



*Centre de recherche
interdisciplinaire
en réadaptation
du Montréal métropolitain*



REDCap
Research Electronic Data Capture

Workshop

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Agenda

- Our Development Journey (JRH)
- Data Management
- What is REDCap?
- Why use REDCap?
- Information Workflow in REDCap
- Examples of REDCap in Research / Administration
- Best Practices in REDCap
- REDCap Availability
- REDCap Project Development Support
- Future Workshops and Discussion

Our Development Journey (JRH)

■ 2012

- Microsoft SQL Server
- MySQL
- FileMaker Pro
- Valentina Studio Pro (Xojo)

■ Barriers

- Expensive
- Required significant resources

■ Solutions

- Google Spreadsheets (Simulation Parameters)
- REDCap (Research / Administrative Databases)

C	D	E
Template	SS_L1-EN	L2-HE
EN	EN	IW
English	English	Hebrew
C:\SimulationData\Environ Sim\Images\UHM_Templat e\	C:\SimulationData\EnvironSi m\Images\UHM_L1\	C:\SimulationData\EnvironSim\I mages\UHM_L2\
Supermarket	Simons	אקדמון
Yes	Yes	Yes
153, 255, 153	153, 255, 153	153, 255, 153
Store1\WallBkg.png	Store1\WallBkg.png	Store1\WallBkg.png
Store1\LogoBkg.png	Store1\LogoBkg.png	Store1\LogoBkg.png
Cane Sugar	Zip Waist Dress	טוש חדגשה
5.00	78.00	2.00
Store1\Item1.png	Store1\Item1.png	Store1\Item1.png
Kraft Singles	Laser Cut Neoprene Tee	מספריים
6.00	48.00	1.00
Store1\Item2.png	Store1\Item2.png	Store1\Item2.png
Dove Soap Bars	Pure Linen Shift Dress	חולץ סיכות
4.00	89.00	2.00
Store1\Item3.png	Store1\Item3.png	Store1\Item3.png
Eggs Large	Ultra Baggy Bogo Jumpsuit	פתקיות ממו
7.00	65.00	6.00
Store1\Item4.png	Store1\Item4.png	Store1\Item4.png
Gain Washing Soap	Minimalist Cotton Trench	דבק סופר גלו
6.00	195.00	6.00
Store1\Item5.png	Store1\Item5.png	Store1\Item5.png

Data Management

■ Global view (Data)

- **Capture**
data capture system that is easy to use and works across multiple disciplines
- **Storage**
how is data handled over its entire lifecycle
- **Sharing**
how is the data transferred/transformed and by whom
- **Quality**
how to assess data quality
- **Analysis**
how do you represent and store your outcomes
- **Compliance**
rules that specify safeguards in place for data collected
- **Retrieval**
data archiving policies
- **Reuse**
Reuse policies of existing data

Electronic Data Capture



- Developed by Vanderbilt University in 2004 and open to non-profit use in 2006 (Current used in ~3800 institutions)
- Investment (**Framework**)
 - **Free** (Non-profit and academic institutions)
 - Cost associated with infrastructure
- Accessibility (**web-based**)
 - Promotes multi-site collaborations
- Customization
 - **Fully customizable** which encourages use in multiple disciplines
- Secure
 - Provides **different authentication modes** (including 2FA)
 - Powerful User Rights Management with audit logs
- Data Quality
 - Inbuilt data **quality checks** for missing data



REDCap (Framework)



- REDCap is **NOT** a
 - Statistical Tool
 - Project Management Tool
 - Randomization / Anonymization Tool
 - Data Storage System (Raw Data)
 - Electronic Medical Record (EMR) - **SHOULD NOT BE USED FOR THIS PURPOSE**

REDCap (Framework)



- REDCap is a **web application** for building and managing databases
 - *can be accessed on any browser on any device that has access to the internet.*
 - *if you are collaborating in a multi-site trial, regardless of the time zone, everyone is looking at the same dataset.*

- Security practices must be instituted on the network and server(s) hosting REDCap and **also within the REDCap software itself.**
 - *To help protect and secure the data, the application employs various methods to protect against malicious users who may attempt to identify and exploit any security vulnerabilities in the system.*
 - *REDCap releases updates frequently especially when a critical bug is reported by a user*

- Much of the security surrounding REDCap relies on the **IT infrastructure and environment** in which REDCap has been installed.

- This includes both the web server and database server, as well as the connection between the two and the **connection of the web server with the REDCap end-user.**

REDCap (First Step)

- What will be the structure of my data (classical vs longitudinal)?
 - *This is a very important question as it determines what your data will look like*
 - *Will it be structured or unstructured (ex. Interview that need to be coded and then entered)*
- Will the data be collected remotely or fact to face or via electronic devices (experiment)?
- Will we use a paper form or an electronic form to capture data?
- Who will do the data entry, the participant or the research assistant?
- How many participant groups are there in the study?
- How will the person enter the answers to these questions?
 - *Some questions might require the person to type in alpha numeric text*
 - *Some questions might require the person to use the mouse to select a choice*

REDCap (Second Step)

- What is the main priority of the project?
- What are the primary outcomes of the project?
- Who are the key personnel involved in the project?
- Which personnel will have access to what kinds of data (all data vs. deidentified data)?
- What project metrics will help keep the project on track with its goals?
- Is your data collection strategy in compliance with the application regulations (Ethics)
 - *Check and confirm before starting any actual data collection activities.*
- A lot of institutions now use Standard Operating Procedures (SOPs) to streamline this process
 - *Use of SOPs enhances compliances and increases your chance for success*

REDCap (Projects)

- Projects are the main entities (containers) for data in REDCap
- Projects can be created for several use cases;
 - *In the current version, only the following 2 options will be supported:*
 - Operational Support – This option is for administrative projects
 - Research – Almost all research projects fall into this category

+ Create a new REDCap Project

You may begin the creation of a new REDCap project on your own by completing the form below and clicking the Create Project button at the bottom.

Project title:

Title to be displayed on project webpage

Purpose of this project:
How will it be used?

Project notes (optional):
Comments describing the project's use or purpose that are displayed on the My Projects page.

Start project from scratch or begin with a template?

---- Select One ----

---- Select One ----

Practice / Just for fun

Operational Support

Research

Quality Improvement

Other

(blank slate)

XML file (CDISC ODM format) ?

☐ Use a template (choose one below)

★ Choose a project template (comes pre-filled with fields, forms/surveys, and other settings)

select template	Template title <small>(sorted by title)</small>	Template description
	A Single Survey (demo of field	A single data collection instrument enabled as a survey. Demonstrates the most frequently.

REDCap (Projects)

- Allows you to store some basic information about a project

Purpose of this project:
How will it be used?

Research

Name of P.I. (if applicable):

First name MI Last name

Email of P.I. (if applicable)

Name of P.I. as cited in publications (if applicable): (e.g., Harris PA)

IRB number (if applicable):

Please specify:

- ☐ Basic or bench research
- ☐ Clinical research study or trial
- ☐ Translational research 1 (applying discoveries to the development of trials and studies in humans)
- ☐ Translational research 2 (enhancing adoption of research findings and best practices into the community)
- ☐ Behavioral or psychosocial research study
- ☐ Epidemiology
- ☐ Repository (developing a data or specimen repository for future use by investigators)
- ☐ Other

REDCap (Development - Forms/Instruments)

- The basic element of a project is called an “Instrument” which basically represents a form that you use to enter your data
- The Record ID (ex: Research Participant ID) is the key that binds all the data together for that participant
- Provides several field types to easily customize your data entry experience
 - *Text Boxes*
 - *Radio Buttons*
 - *Checkboxes*
 - *Dropdowns*

Demographics

Adding new Research Participant ID JRH_1234

Research Participant ID JRH_1234

Consent Information

Date subject signed consent Today Y-M-D
YYYY-MM-DD

Upload the patient's consent form [Upload document](#)

Contact Information

First Name

Last Name

Street, City, State, ZIP Expand

Phone number Include Area Code

E-mail

Personal Information

Date of birth Today Y-M-D

Age (years) View equation

Gender ☐ Female ☐ Male ☐ Not Specified

reset

REDCap (Matrix Fields)

- Matrix fields allows you to display a group of similar multiple-choice fields in a very compact area on a page.

The following qualities are important in my supervisor:						
		Extremely Important	Very Important	Somewhat Important	Slightly Important	Not Important at All
1)	BELIEVABLE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
						reset
2)	APPROACHABLE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
						reset
3)	HONEST	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
						reset
4)	SUCCESSFUL	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
						reset
5)	QUALIFIED	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
						reset

REDCap (Signature Fields)

Add signature

Please sign your name with your finger or mouse:

SIGN HERE

Save signature

[reset](#)

REDCap (Branching Logic)

- The fields on a REDCap form can be set to be hidden during certain circumstances (in other words, the fields are visible ONLY when the values of some other fields meet certain conditions)

Organisation de conférences/Conference organisation	
Durant les années 2017 à 2020 (inclusivement), avez-vous été impliqué dans l'organisation de conférences ou congrès?/ During the years 2017 to 2020 (inclusively), were you involved in the organization of conferences?	<div><div>H</div><div><input checked="" type="radio"/> Oui/Yes</div></div> <div><div>H</div><div><input type="radio"/> Non/No</div></div>
	reset
Si oui, combien? If yes, how many?	<div><div>H</div><div><input type="text"/></div></div>

REDCap (Data Entry Types)

- The forms developed for the project can be completed either by

logging onto the REDCap website

The screenshot shows the 'Demographics' form in REDCap. At the top, it says 'Adding new Research Participant ID JRH_1234'. Below this, the 'Research Participant ID' is set to 'JRH_1234'. The form is divided into several sections: 'Consent Information' (highlighted in pink), 'Contact Information' (highlighted in green), and 'Personal Information' (highlighted in green). The 'Consent Information' section includes a 'Date subject signed consent' field with a calendar icon and a 'Today' button, and an 'Upload the patient's consent form' field with an 'Upload document' button. The 'Contact Information' section includes fields for 'First Name', 'Last Name', 'Street, City, State, ZIP', 'Phone number' (with an 'Include Area Code' option), and 'E-mail'. The 'Personal Information' section includes fields for 'Date of birth', 'Age (years)' (with a 'View equation' link), and 'Gender' (with radio buttons for Female, Male, and Not Specified). A 'reset' button is located at the bottom right of the form.














Surveys (no login required – just a weblink)

The screenshot shows the 'Client Information' survey form. It starts with a header 'Client Information' and a sub-header 'Please complete the information below. Thank you!'. The form is divided into several sections: 'Site Identifiers' (with a 'Client Unique ID' field), 'Demographic Info' (with fields for 'Age', 'Gender', 'Date of admission to stroke rehabilitation unit', 'Date of stroke', 'Type of stroke', 'Side of stroke (brain hemisphere)', and 'Walking deficit'). Each field has a 'reset' button next to it. The 'Gender' field has radio buttons for 'Female' and 'Male'. The 'Type of stroke' field has radio buttons for 'Ischemic' and 'Hemorrhagic'. The 'Side of stroke (brain hemisphere)' field has radio buttons for 'Left' and 'Right'. The 'Walking deficit' field has radio buttons for 'Yes' and 'No'. A 'reset' button is located at the bottom right of the form.

REDCap (Example Form)

- Six-minute walk test – with distances completed at each minute

 **6MWT**

 Editing existing Research Participant ID JRH_1	
Research Participant ID	JRH_1
6 Minute Walk Test	
Distance at 1 min (meters)	  <input type="text" value="30"/>
Distance at 2 min (meters)	  <input type="text" value="60"/>
Distance at 3 min (meters)	  <input type="text" value="90"/>
Distance at 4 min (meters)	  <input type="text" value="120"/>
Distance at 5 min (meters)	  <input type="text" value="150"/>
Distance at 6 min (meters)	  <input type="text" value="180"/>

REDCap (Longitudinal Study)

- A single project can have several forms
- The forms can be used for single visit data or multiple visits (Longitudinal study)
 - *Advantage – Repeating data collection instruments (without the need to pre-define the number of repetitions)*

Data Collection Instrument	Baseline (1)	Visit 1 (2)	Visit 2 (3)	Visit 3 (4)	Final Visit (5)
Demographics	✓				
Baseline Data	✓				
Monthly Data		✓	✓	✓	
Completion Data					✓

Data Collection Instrument	Event 1 (1)
Demographics	✓
Baseline Data	✓
Monthly Data	✓
Completion Data	✓

Data Collection Instrument	Event 1 (1)
Demographics	✓
Baseline Data	✓
Month 1 Data	✓
Month 2 Data	✓
Month 3 Data	✓
Completion Data	✓

REDCap (Longitudinal Study)

Data Collection Instrument	Events							
	Enrollment (1)	Dose 1 (2)	Visit 1 (3)	Dose 2 (4)	Visit 2 (5)	Dose 3 (6)	Visit 3 (7)	Final visit (8)
Demographics	✓							
Contact Info	✓							
Baseline Data	✓							
Visit Lab Data			✓		✓		✓	
Patient Morale Questionnaire		✓	✓	✓	✓	✓	✓	✓
Visit Blood Workup			✓		✓		✓	✓
Visit Observed Behavior			✓		✓		✓	✓
Completion Data								✓
Completion Project Questionnaire								✓

REDCap (Surveys)

- The survey capability in REDCap is both extensive and customizable
- Survey responses get timestamped with the date and time when the “Submit” button was clicked by the participant.
- Surveys in longitudinal studies are complex and should be designed with care

The screenshot shows a REDCap survey form titled "Client Information". At the top right, there is a "Resize font:" option with a plus icon and a minus icon. Below the title, the instruction "Please complete the information below." is displayed, followed by a "Thank you!" message. The form is organized into sections: "Site Identifiers" and "Demographic Info".

Site Identifiers

- Client Unique ID**: A text input field with a red asterisk and the text "* must provide value" below it.

Demographic Info


- Age**: A text input field with a red asterisk and the text "* must provide value" below it.
- Gender**: Two radio buttons labeled "Female" and "Male". A red asterisk and the text "* must provide value" are to the left. A "reset" link is on the right.
- Date of admission to stroke rehabilitation unit**: A date picker with a calendar icon, a "Today" button, and "D-M-Y" format. A red asterisk and the text "* must provide value" are to the left.
- Date of stroke**: A date picker with a calendar icon, a "Today" button, and "D-M-Y" format. A red asterisk and the text "* must provide value" are to the left.
- Type of stroke**: Two radio buttons labeled "Ischemic" and "Hemorrhagic". A red asterisk and the text "* must provide value" are to the left. A "reset" link is on the right.
- Side of stroke (brain hemisphere)**: Two radio buttons labeled "Left" and "Right". A red asterisk and the text "* must provide value" are to the left. A "reset" link is on the right.
- Walking deficit**: Two radio buttons labeled "Yes" and "No". A red asterisk and the text "* must provide value" are to the left. A "reset" link is on the right.

REDCap (Surveys)


- Surveys can be sent using

- *public links (anonymous)*
- *using personalized links*
 - Semi-anonymous
 - Identifiable




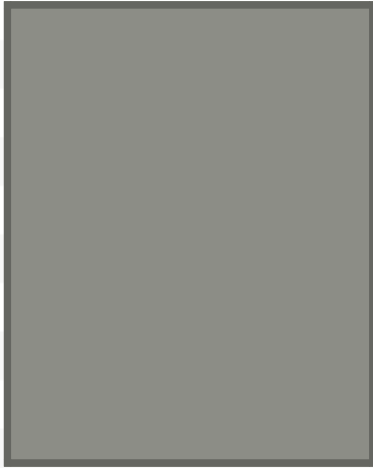





























Manage Survey Participants

 Public Survey Link

 Participant List

 Survey Invitation Log

The Participant List option allows you to **send a customized email** to anyone in your list and **track who responds to your survey**. It is also possible to identify an individual's survey answers, if desired, by providing an Identifier for each participant (this feature must first be enabled by clicking the 'Enable' button in the table below). Unless an Identifier is used, all survey responses collected are considered anonymous. [More details](#)

Participant List belonging to [Initial survey] "Pre Screening Survey" Remove all participants						
Displaying 1 - 10 of 10		 Add participants	 Compose Survey Invitations	 Export list		
Email	Participant Identifier (optional) Disable	Link	Invitation Scheduled?	Invitation Sent?	Responded?	
arodrigu1@bsd.uchicago.edu			-			remove
braumann@bsd.uchicago.edu (ID 2)			-			remove
braumann@ci.uchicago.edu (ID 3)		-	-			remove
brigitte_raumann@yahoo.com			-			remove
dermoore82@gmail.com			-			remove
jimtaylor@yahoo.com			-			remove
john.williams@hotmail.com			-			remove
kle@bsd.uchicago.edu			-			remove
nbahroos@bsd.uchicago.edu			-			remove
putnamtr@gmail.com			-			remove

REDCap (Surveys)

- Surveys can use Save and Return Later Functionality

- *Can use codes for return*

The screenshot displays a REDCap survey interface. At the top, there is a header area with the text "Survey Title" and "Please complete the survey below." In the top right corner, there are links for "Resize font:" and "Return". Below the header, the survey is divided into sections. The first section, "Section 1", contains two questions: "Select an option" with a dropdown menu and "Select an item" with radio buttons for "Low", "High", and "N/A". A "reset value" link is located to the right of the radio buttons. At the bottom of the survey, there are two buttons: "Next Page >>" and "Save & Return Later". A modal dialog box titled "Validation code needed to return" is open in the foreground. It contains the text: "Copy or write down the validation code below. Without it, you will not be able to return and continue this survey. Once you have the code, click *Close* and follow the other instructions on this page." Below this text, there is a label "Validation code:" followed by a text input field containing the code "d9gkxlz7". A "Close" button is located at the bottom right of the dialog box.

Survey Title

Please complete the survey below.

Page 1 of 2

Section 1

Select an option

Select an item

Low
High
N/A

reset value

Next Page >>

Save & Return Later

Validation code needed to return



Copy or write down the validation code below. Without it, you will not be able to return and continue this survey. Once you have the code, click *Close* and follow the other instructions on this page.

Validation code: d9gkxlz7

Close


REDCap (Surveys)

- Use Survey Logins


 **Survey Login** 

Survey title: **"Followup Survey"**


Before beginning or continuing this survey, you must first log in by successfully entering the correct values below. **You must successfully enter a value for the field below.** Please note that the login is *not* case sensitive.

 **ERROR:** The login was not successful because the value entered was not correct. Try again.
Please enter your correct date of birth to continue.

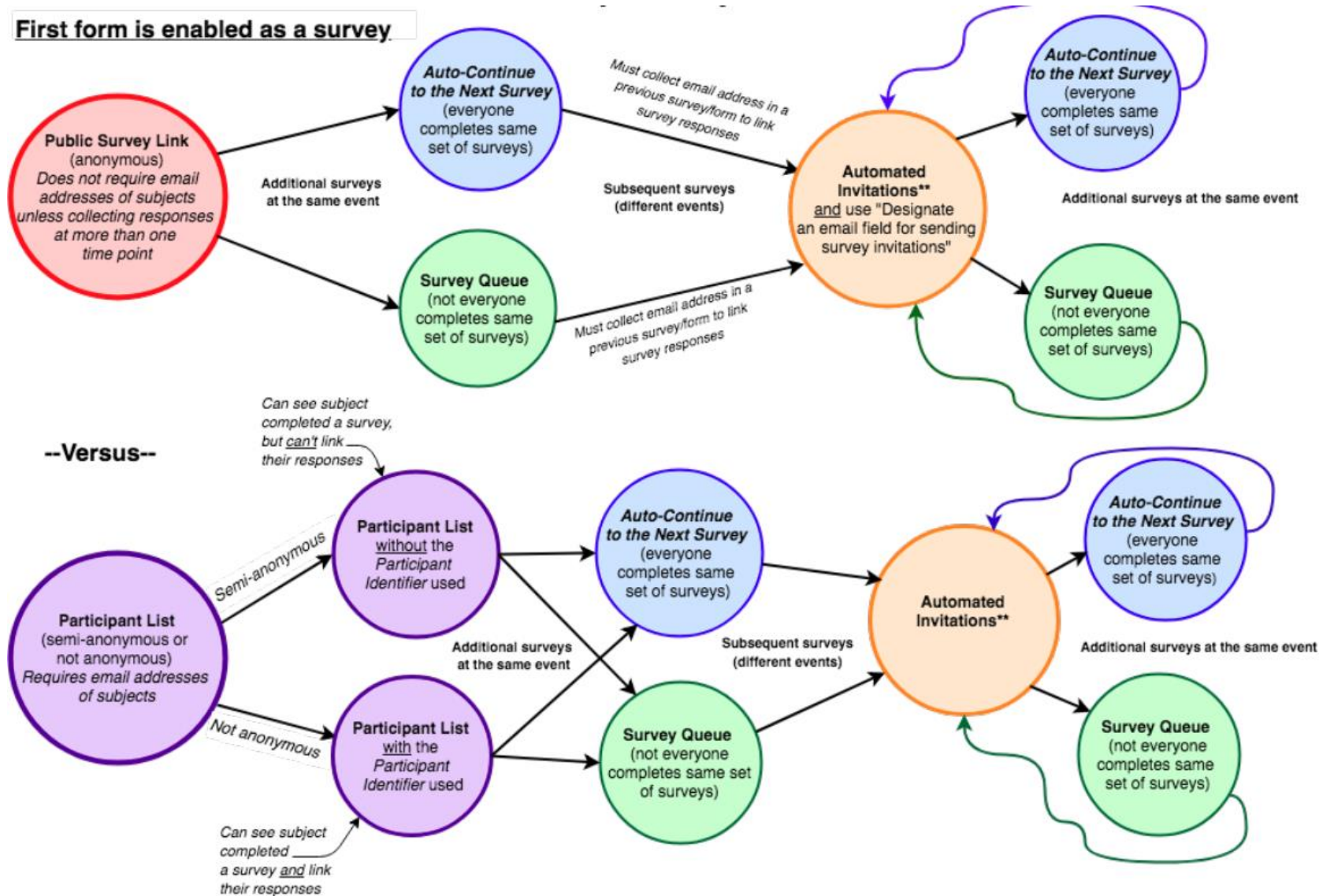
What is your date of birth?

 M-D-Y

You will need to re-enter this value on the follow-up survey

Log In 

REDCap (Surveys)



REDCap (Critical Step)

■ TEST – TEST –TEST

- ALWAYS enter test data
- Create a set of Test records/data
 - *include intentionally “wrong” data – to ensure that the application behaves as you expect*
- If possible, have your colleagues enter test data (print the forms)
 - *their feedback will help you change your design to collect better quality data*
- Check if validation works well
 - *this will force the user to enter data in a specific way*
- Check if branching logic works well
 - *questions that should not be seen are indeed hidden*
- Make sure that the questions that absolutely require an answer are marked as required
 - *else the user can easily skip them*
- Check if records are created in the way you expect them to be created

REDCap (Critical Step)

■ **TEST – TEST –TEST**






■ To test a Survey

- *Send a link to yourself and to your colleagues*
- *Take it a few times to make sure instructions and termination options work as designed*
- *Make sure the survey results are saved in the format you expect*

REDCap (Critical Step)

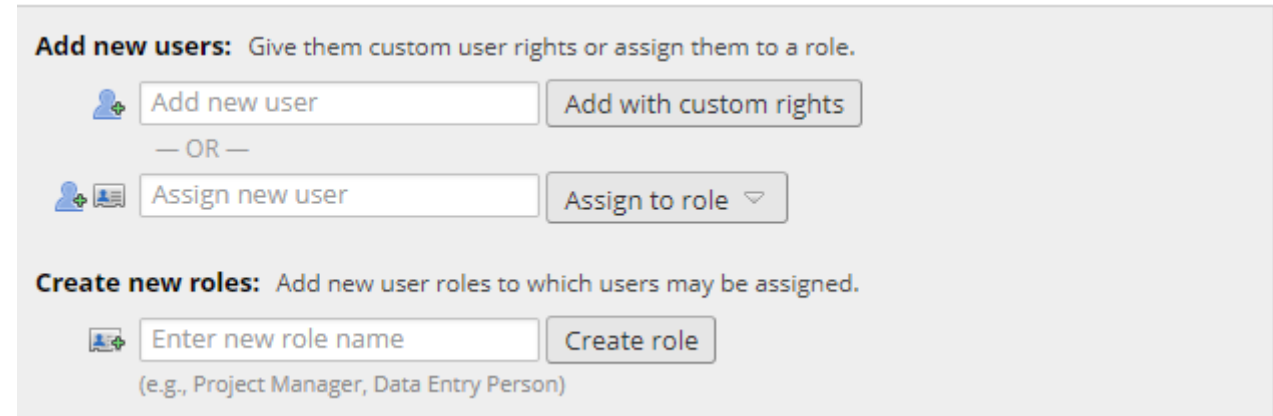
■ Codebook

- Familiarize with the codes used in your project
- Do they correspond with your project data structure and your data analysis


#	Variable / Field Name	Field Label <i>Field Note</i>	Field Attributes (Field Type, Validation, Choices, Calculations, etc.)
Instrument: General Information (general_information) ^ Collapse			
 1	rschr_id	Code du chercheur/Researcher ID (NIP)	text
 2	rschr_name	Section Header: <i>Information Chercheur/Researcher Information</i> Nom du chercheur/ Researcher's name :	text Field Annotation: @DEFAULT-FROM-PREVIOUS-EVENT
 3	rschr_axis	Axe/ Axis	dropdown 0 Axe 1 1 Axe 2 Field Annotation: @DEFAULT-FROM-PREVIOUS-EVENT
 4	rschr_thematic	Unité thématique/ Thematic unit	dropdown 0 Thème 1 1 Thème 2 Field Annotation: @DEFAULT-FROM-PREVIOUS-EVENT
 5	rschr_site	Site/ Site	dropdown 0 IURDPM_pavillon_Gingras 1 IURDPM_pavillon_Lindsay 2 IURDPM_pavillon_Laurier 3 Centre de réadaptation Lethbridge-Layton-Mackay_site_Constance-Lethbridge 4 Centre de réadaptation Lethbridge-Layton-Mackay_site_Mackay 5 Centre de réadaptation Lethbridge-Layton-Mackay_site_MAB 6 Hôpital Juif de réadaptation 7 Institut Nazareth et Louis-Braille 8 Institut Raymond-Dewar 9 Centre de réadaptation Lucie-Bruneau 10 Centre de réadaptation Estrie Field Annotation: @DEFAULT-FROM-PREVIOUS-EVENT

REDCap (Users)



- All user accounts are created by the REDCap Project Manager
 - *Requests can be made using the online form*
 - *Only CRIR members and their collaborators can have a user account on the platform*
- Once the user is added to the system, the PI can add them to their own project and assign them the appropriate project rights
 - *The REDCap Project Manager does not grant new users' access to your project*
 - *It is the responsibility of PI to assign different roles to users so that they maintain the confidentiality and integrity of the project data*




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)

REDCap (Users)

- Adding team members and configuring their different access policies is an excellent way to test your project
- REDCap provides extremely granular user configurations

Data Entry Rights

*NOTE: The data entry rights *only* pertain to a user's ability to view or edit data on a web page in REDCap (e.g., data entry forms, reports). It has no effect on data imports or data exports.*

	No Access	Read Only	View & Edit
Demographics	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
6MWT	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Dimension Info	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Trial Outcomes Dim 1	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Trial Outcomes Dim 2	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Trial Outcomes Dim 3	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Trial Outcomes Dim 4	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Baseline Data (Week 0)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Pre-Intervention (Week 4)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Post-Intervention (Week 8)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Follow-Up (Week 12)	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Completion Data	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

REDCap (User Rights Example)

Suggested REDCap Access by Project Role								
(See Glossary of Terms and Role Descriptions above)								
REDCap Project Role	Principal Investigator	Administrator	Project Coordinator	Data Coordinator	Statistician	Project Staff	Read Only	Data Entry
Project Design and Setup	✓	✓	✓					
User Rights	✓	✓	✓					
Data Access Group (if applicable)	✓	✓	✓					
Data Export Tool (select one)	No Access						✓	✓
	De-Identified				✓	✓		
	Remove Identifiers				✓	✓		
	Full Data Set	✓	✓	✓				
Add / Edit Reports	✓	✓	✓					
Stats & Charts	✓	✓	✓					
Calendar	✓	✓	✓					
Data Import Tool	✓	✓	✓					
Data Comparison Tool	✓	✓	✓					
Logging	✓	✓	✓					
File Repository	✓	✓	✓			✓		

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)


REDCap (User Rights Example)


Suggested REDCap Access by Project Role									
(See Glossary of Terms and Role Descriptions above)									
REDCap Project Role		Principal Investigator	Administrator	Project Coordinator	Data Coordinator	Statistician	Project Staff	Read Only	Data Entry
Data Quality	Create & Edit Rules	✓	✓	✓	✓	✓			
	Execute Rules	✓	✓	✓	✓	✓			
Create Records		✓	✓	✓	✓		✓		✓
Rename Records		✓	✓	✓	✓				
Delete Records		✓	✓	✓	✓				
Record Locking Customization		✓	✓	✓					
Lock / Unlock Records	Disabled					✓	✓	✓	✓
	Locking / Unlocking	✓	✓	✓					
	Lock/Unlock with E-sign								
Allow locking of all forms at once for a given record		✓	✓	✓					
Data Entry Rights	No Access								
	Read Only					✓		✓	
	View & Edit	✓	✓	✓	✓		✓		✓
Edit Survey Responses		✓	✓	✓	✓				
Manage Survey Participants (for surveys only)		✓	✓	✓			✓		
API	Export	✓	✓	✓					
	Import	✓	✓	✓					

REDCap (Data Export)





- REDCap allows you to either export
 - “All Data” – This exports all data available in your project
 - “Custom Report” – This allows you to filter the data and customize the fields in the report

 Create New Report

 My Reports & Exports

 Other Export Options

This module allows you to easily view reports of your data, inspect plots and descriptive statistics of your data, as well as export your data to Microsoft Excel, SAS, Stata, R, or SPSS for analysis (if you have such privileges). If you wish to export your **entire** data set or view it as a report, then Report A is the best and quickest way. However, if you want to view or export data from only specific instruments (or events) on the fly, then Report B is the best choice. You may also create your own custom reports below (if you have such privileges) in which you can filter the report to specific fields, records, or events using a vast array of filtering tools to make sure you get the exact data you want. Once you have created a report, you may view it as a webpage, export it out of REDCap in a specified format (Excel, SAS, Stata, SPSS, R), or view the plots and descriptive statistics for that report.

My Reports & Exports				
		Report name	View/Export Options	Management Options
	A	All data (all records and fields)	 View Report  Export Data  Stats & Charts	
	B	Selected instruments (all records)	 Make custom selections	

REDCap (Data View)

- You can view all reports (“All Data” or “Custom Report”) in REDCap without exporting them

Research Participant ID research_id	Dimension # dimension	Level # level	Passed level passedlevel	Total amount of coins collected totalcoins	Target distance set for the client (m) targetdist	Total distance (m) totaldistance	Total Trial Time (s) totaltrialtime	Average speed (m/s) avgspeed	Flag Trial Bad trialflag__0	Trial No trialno
HO_S1	1	1		0	79.0	0.0	135.969421	0.0	Unchecked (0)	
HO_S1	1	1		0	79.0	2.96813	61.270191	0.048443	Unchecked (0)	
HO_S1	1	1		10	79.0	9.747583	58.643696	0.166217	Unchecked (0)	
HO_S1	1	1		10	79.0	9.953447	49.306019	0.201871	Unchecked (0)	
HO_S1	1	1	yes	90	15.0	14.428075	52.354305	0.275585	Unchecked (0)	
HO_S1	1	2	yes	90	20.0	19.133024	40.088356	0.477271	Unchecked (0)	
HO_S1	1	3		100	25.0	25.169928	61.021999	0.412473	Unchecked (0)	

REDCap (Custom Report)


- The biggest advantage of “Custom Reports” is that they automatically get updated with new records entered into the system

height < 150

Subject ID (study_id)	Event Name (redcap_event_name)	Height (height)
1020	Baseline	148
1003	Baseline	145
1015	Baseline	145
1011	Baseline	143
1010	Baseline	140
1022	Baseline	134
1026	Baseline	134
1005	Baseline	125
1025	Baseline	123
1018	Baseline	120

Name of Report:

STEP 1

 **User Access:** Choose who can view this report

☒ **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**

Add all fields from selected instrument:

Field 1	<input type="text" value="study_id 'Subject ID'"/>	<input type="button" value="add"/>	Instrument: Demographics	<input checked="" type="button" value="x"/>
Field 2	<input type="text" value="height 'Height'"/>	<input type="button" value="add"/>	Instrument: Demographics	<input checked="" type="button" value="x"/>
Field 3	<input type="text" value="Type variable name or field label"/>	<input type="button" value="add"/>		

STEP 3

 **Filters (optional)**

[How to use filters and AND/OR logic](#)

Operator / Value

Filter 1	<input type="text" value="height 'Height'"/>	<input type="button" value="add"/>	<	<input type="text" value="150"/>	<input checked="" type="button" value="x"/>
	in	<input type="text" value="All events"/>			
AND <input type="button" value="add"/>					
Filter 2	<input type="text" value="Type variable name or field label"/>	<input type="button" value="add"/>	=	<input type="text" value=""/>	
	in	<input type="text" value="All events"/>			

 Switch format: [Use advanced logic](#)

REDCap (Data Export)

- REDCap allows you to export data in several formats including SAS and R
- Viewing and exporting reports is the best way to test your project

✓ Data export was successful!

The data export was successful, and your data is now ready to be downloaded. Click the download icon(s) below on the right to download your data file. If exporting to a specific statistical analysis package, you will additionally need to download the syntax file that is provided for that stats package. For more details, follow the instructions in the box below.



SPSS Statistical Software

Download and save all 3 files on the right to a common location. First, double-click on the Pathway Mapper (.bat) file, which will run quickly and invisibly. (If you are not using a Windows operating system, such as Mac or Linux, please see the *Additional Instructions*.) Now double-click on the *.sps file, which will open SPSS. When the file is loaded and displayed, choose Run-->All from the top menu options. This action will launch the script that will automatically read in all data and manipulate data fields with labels, option values, etc.

[Additional instructions](#)

Click icon(s) to download:





Send file?

↓ Exporting "All data (all records and fields)"


Select your export settings, which includes the export format (Excel/CSV, set.


Choose export format

☒  CSV / Microsoft Excel (raw data)

☐  CSV / Microsoft Excel (labels)

☐  SPSS Statistical Software

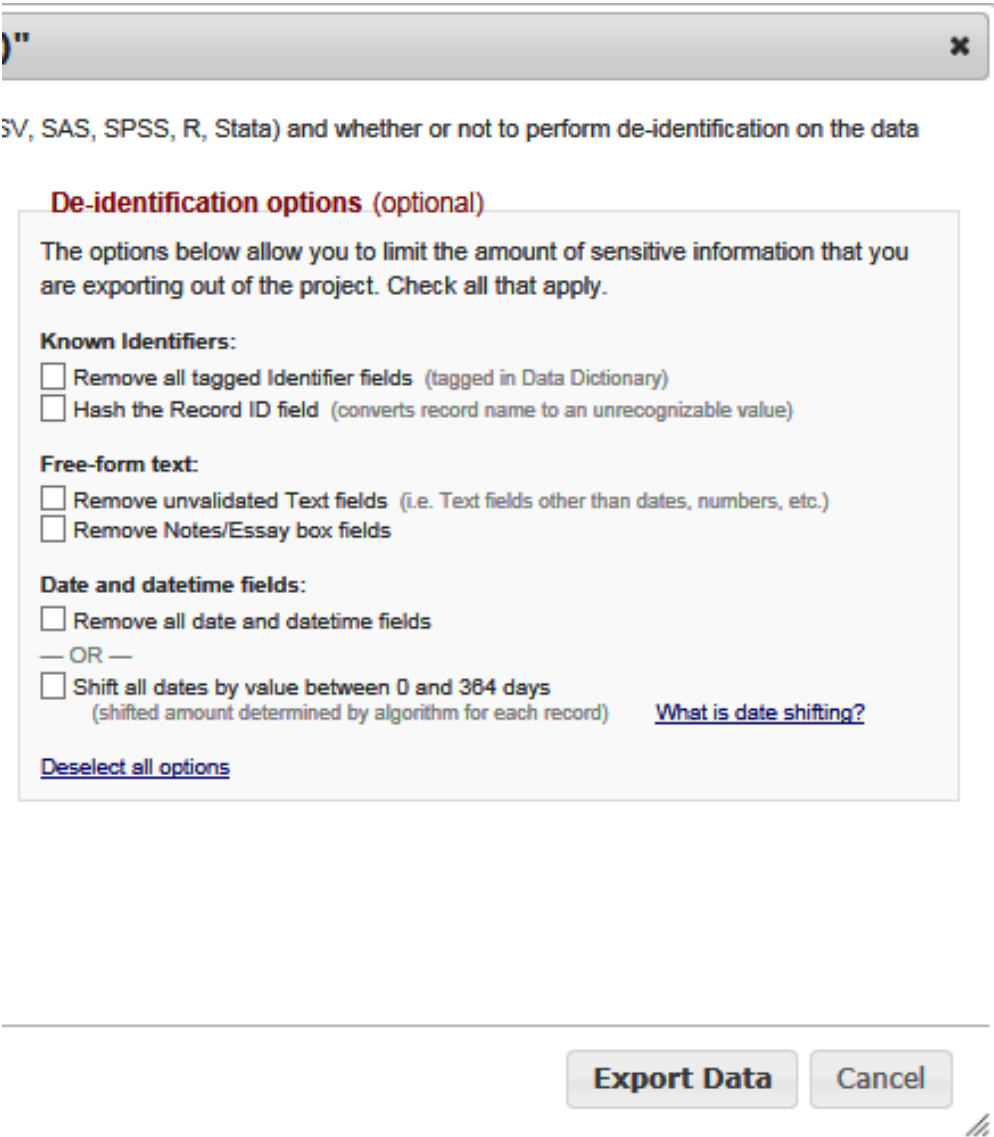
☐  SAS Statistical Software

☐  R Statistical Software

☐  STATA Statistical Software

REDCap (Data Export)

- This tool gives the user access to export all recorded data or selected data fields.
 - *The default access is “De-Identified” if user has access to all the data*
- The other export options are
 - **No Access:** User cannot export data
 - **De-Identified:** Free form text fields, date/time fields and any fields marked as “identifier” removed
 - **Remove Identifier fields:** Removes only fields marked as “identifier”
 - **Full Data Set:** User has access to export ALL data (Only Project Owner and Project Administrator should have this right)



The screenshot shows a web-based interface for REDCap data export. At the top, there is a header bar with a close button (X). Below the header, the text "SV, SAS, SPSS, R, Stata) and whether or not to perform de-identification on the data" is visible. The main section is titled "De-identification options (optional)" in red. It contains a paragraph: "The options below allow you to limit the amount of sensitive information that you are exporting out of the project. Check all that apply." Below this, there are three sections of options, each with a checkbox:

- Known Identifiers:**
 - ☐ Remove all tagged Identifier fields (tagged in Data Dictionary)
 - ☐ Hash the Record ID field (converts record name to an unrecognizable value)
- Free-form text:**
 - ☐ Remove unvalidated Text fields (i.e. Text fields other than dates, numbers, etc.)
 - ☐ Remove Notes/Essay box fields
- Date and datetime fields:**
 - ☐ Remove all date and datetime fields

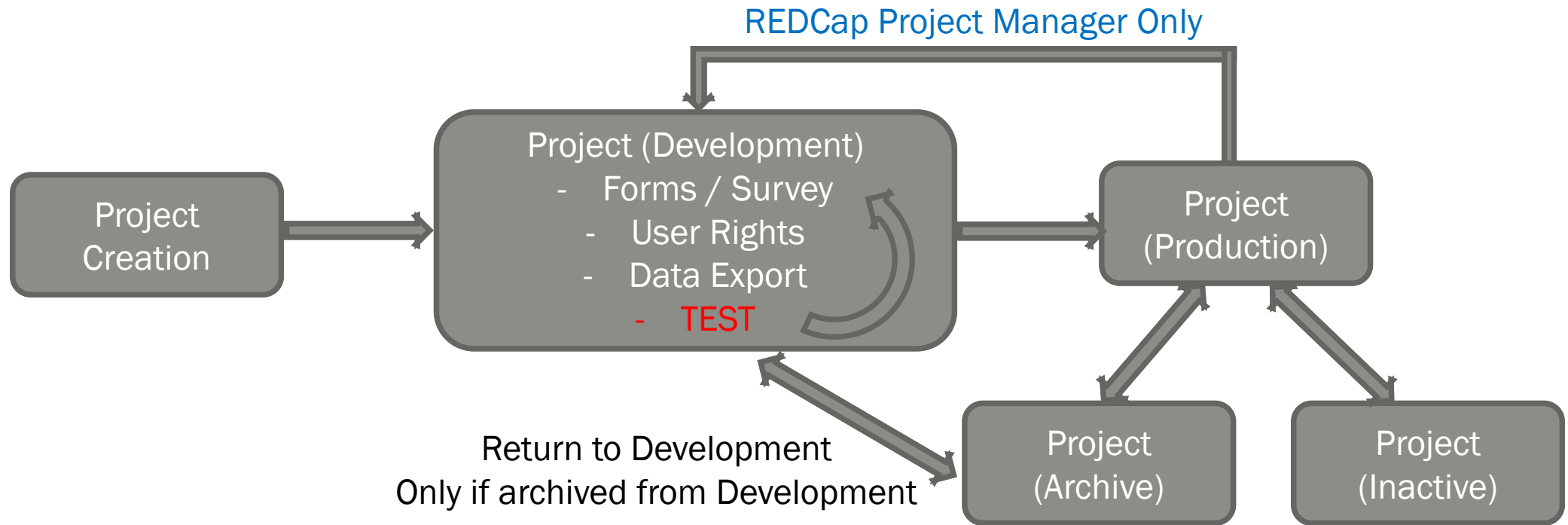
Below these sections, there is a line "— OR —" followed by another checkbox option:

- ☐ Shift all dates by value between 0 and 364 days (shifted amount determined by algorithm for each record) [What is date shifting?](#)

At the bottom of the options section, there is a link: [Deselect all options](#).

At the bottom of the entire interface, there are two buttons: "Export Data" and "Cancel".

REDCap (Project Modes)



REDCap (Production)

- Production mode puts into place safeguards to protect your real data against loss or damage

Move Project To Production Status?



Are you sure you wish to leave the DEVELOPMENT stage? If you proceed, the project will be moved to PRODUCTION status so that real data may be collected. If you select the 'Delete ALL data' option below, all current collected data, calendar events, and uploaded documents will be deleted, otherwise all will remain untouched as the project is moved to production.

★ Have you checked the [Check For Identifiers](#) page to ensure all identifier fields have been tagged?

Keep existing data or delete?

- ☐ Keep ALL data saved so far. **(2 records)**
- ☐ Delete ALL data, calendar events, documents uploaded for records/responses, survey responses (if applicable), and any logging events pertaining to data collection.

Once in production, you will not be able to edit the project fields in real time anymore. However, you can make edits in Draft Mode, which will be auto-approved or else might need to be approved by a REDCap administrator before taking effect.

YES, Move to Production Status

Cancel

REDCap (Production)

- Altering a database that is in Production can cause data loss.
- In order to alter the database, you need to enter the “Draft” mode
- Avoid
 - *Changing existing variable names*
 - *Changing existing coded variables*

NOTE:

The project is currently in PRODUCTION status, and thus changes cannot be made in real time to the project as when in Development status. However, changes to the project may be drafted in DRAFT MODE, after which such changes will be reviewed and approved by a REDCap administrator. Once those changes are approved, you will then receive an email confirmation informing you that those changes have taken effect on your production project.

 [Share your instruments with others via the REDCap Shared Library](#)

Would you like to enter DRAFT MODE to begin drafting changes to the project?

Enter Draft Mode

REDCap (Production)

- Changes made in “Draft” mode are automatically approved if they do not alter the data in any way
- If changes made in “Draft” mode significantly alter the data, the system will inform the REDCap Project Manager
- The REDCap Project Manager after corresponding with you will then approve those changes to the database

Details regarding all changes made in Draft Mode:

- Records in project: 0
- Fields to be added: 3
- Fields to be modified: 0
- Total potentially critical issues: 0
 - Deleted fields that contain data: 0
 - Potentially critical issues in modified fields that contain data: 0
- Total field count BEFORE the changes below are committed: 2
- Total field count AFTER the changes below are committed: 5
- Will these changes be automatically approved? **Yes** ✓ [\(Super users: Change how this works\)](#)

Fields to be ADDED:

- first_name "First Name"
- last_name "Last Name"
- smoker "Smoker?"

Forms to be ADDED: none

Fields to be DELETED: none

Forms to be DELETED: none

KEY for Comparison Table below

White cell = no change

Yellow cell = field changed (Black text = new value, Gray text = cur

Green cell = new project field

REDCap Tools (Data Management)

■ REDCap Status Dashboard

- *Provides a high-level view of data*
- *Helps identify which portions of data are missing or incomplete*




Research Participant ID	Demographics	6MWT	Dimension Info	Trial Outcomes Dim 1	Trial Outcomes Dim 2	Trial Outcomes Dim 3	Trial Outcomes Dim 4	Baseline Data (Week 0)	Pre-Intervention (Week 4)	Post-Intervention (Week 8)	Follow-Up (Week 12)	Completion Data
HO_S1				+	+							
HO_S2				+	+							
HO_S3												
HO_S4				+								
JRH_1				+	+							
JRH_2												














































































REDCap Tools (Data Management)

■ REDCap Status Dashboard

 [Research Participant ID JRH 1](#)
[Select other record](#)


Data Collection Instruments:

-  Demographics
-  **6MWT**
-  Dimension Info
-  Trial Outcomes Dim 1 (66) 
-  Trial Outcomes Dim 2 (12) 
-  Trial Outcomes Dim 3
-  Trial Outcomes Dim 4
-  Baseline Data (Week 0)
-  Pre-Intervention (Week 4)
-  Post-Intervention (Week 8)
-  Follow-Up (Week 12)
-  Completion Data


Research Participant ID	Demographics	6MWT	Dimension Info	Trial Outcomes Dim 1	Trial Outcomes Dim 2	Trial Outcomes Dim 3	Trial Outcomes Dim 4	Baseline Data (Week 0)	Pre-Intervention (Week 4)	Post-Intervention (Week 8)	Follow-Up (Week 12)	Completion Data
HO_S1				 	 							
HO_S2				 	 							
HO_S3												
HO_S4												
JR_H_1				 								
JR_H_2												

Trial Outcomes Dim 1


1

 13-06-2019-D1L1


2

 13-06-2019-D1L1

3

 13-06-2019-D1L2

4

 13-06-2019-D1L3

REDCap Tools (Data Management)

■ REDCap Data Import Tool


- *Allows you to import data from a csv file*

Data Import Tool

This module may be used for importing data into this project from a CSV (comma delimited) file or alternatively from an XML file in CDISC ODM format. Below are the steps you will need to follow in order to import your data successfully into this project.

NOTICE: This project is currently in Development status. **Real data should NOT be entered** until the project has been moved to Production status.

 **CSV import**

 **CDISC ODM (XML) import**

Instructions:

- 1.) Click the link below to download your data import template as a CSV (comma delimited) file. Save it locally to your computer and then open it to begin filling it with the data you wish to import.

 [Download your Data Import Template](#) (with records in rows)

OR

 [Download your Data Import Template](#) (with records in columns)

REDCap Tools (Data Management)

■ REDCap Data Comparison Tool

Data Comparison Tool

NOTICE: The Data Comparison Tool does not **fully** support the Repeating Instruments and Events feature, which appears to be enabled in this project. Data can be compared (and even merged if using Double Data Entry), but it will only allow comparison and merging of Instance #1 of a repeating instrument or repeating event. Thus all other repeating data will be ignored on this page. Also, all non-repeating data can still be compared and merged.

This page may be used for comparing two records currently in the project. Select a record from each of the lists below and hit the 'Compare' button. A comparison table will then be displayed showing the differences between the two records.

Research Participant ID	
<input type="text" value="JRH_1"/>	<input type="text" value="JRH_2"/>
<input type="button" value="Compare"/>	

REDCap Tools (Data Management)


■ REDCap File Repository Tool

File Repository

This page may be used for storing and retrieving files and documents used for this project. You may upload files here to save for retrieval later, or you may download previously uploaded files in the file list below. Whenever a data export is performed, the resulting data and syntax files are stored here also.

 **User Files**

 **Data Export Files**

 **Upload New File**

REDCap Tools (Data Management)

■ REDCap Randomization Tool

Setup

Dashboard

STEP 1: Define your randomization model

This step will allow you to define the randomization model you will be implementing and all its parameters, which includes defining strata (if applicable) and optionally randomizing subjects per group/site (if a multi-site study).

A) Use stratified randomization? ☐

It is often necessary to ensure equal treatment among a number of factors. Stratified randomization is the solution to achieve balance within one or more subgroups, such as gender, race, diabetics/non-diabetics, etc. By choosing strata (criteria fields), you may then be able to ensure balance within those subgroups. [Tell me more](#)

B) Randomize by group/site? ☐

If this is a multi-center/multi-site project (or something similar), you may want to stratify the randomization by each group/site. You can select an existing multiple choice field that represents the groups/sites, OR you can use Data Access Groups to stratify by group/site.

C) Choose your randomization field
This is the field where the allocated randomization (treatment) group will be saved and stored, and is where the Randomize button will appear on your data collection form.

- select a field -

▼

 for

Event 1 (Arm 1: Flavors)

▼

Save randomization model

Erase randomization model

REDCap Tools (Data Management)

■ REDCap Calendar Tool



Calendar

[VIDEO: How to use this page \(5 min\)](#)

The Calendar application can be used as a project calendar within this database to help organize your schedule and keep track of any upcoming events. It will allow you to add or modify calendar events and then view them either in a daily, weekly, or monthly format below. To add a new note or calendar event to any day, click **+New** at the top of that day's box to begin entering the information.

Day Week Month Agenda

◀ December ▼ 2010 ▼ ▶

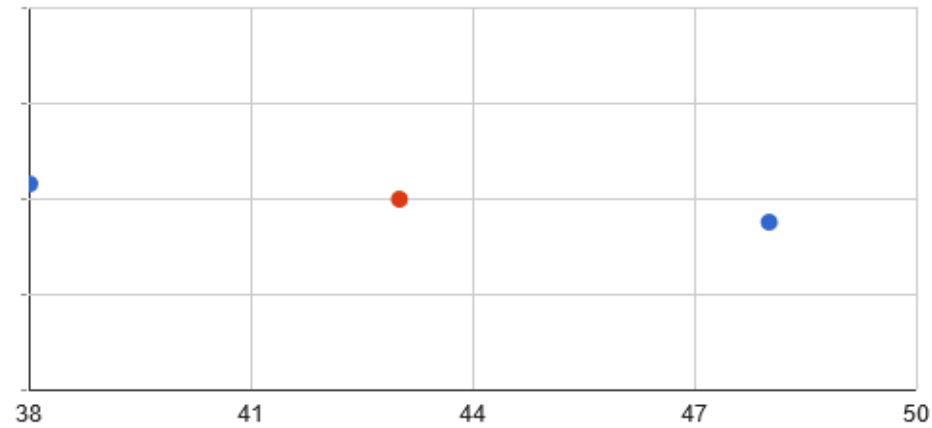
 [Print Calendar](#)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			+ New 1 ● 9:30am 1001 - Initial v ● 1:30pm 1005 - Enrolln	+ New 2 ● 1:15pm 1003 - visit 2	+ New 3 ● 3:00pm 1002 - visit 3	+ New 4
+ New 5	+ New 6 ● 9:30am 1003 - dose 1	+ New 7 ● 2:30pm 1003 - dose 2	+ New 8 ● 1004 - follow up call ● 11:30am 1009 - Enroll	+ New 9	+ New 10	+ New 11
+ New 12	+ New 13	+ New 14 ● 12:00pm 1003 - dose 1	+ New 15	+ New 16 ● 4:45pm 1008 - visit 1	+ New 17	+ New 18

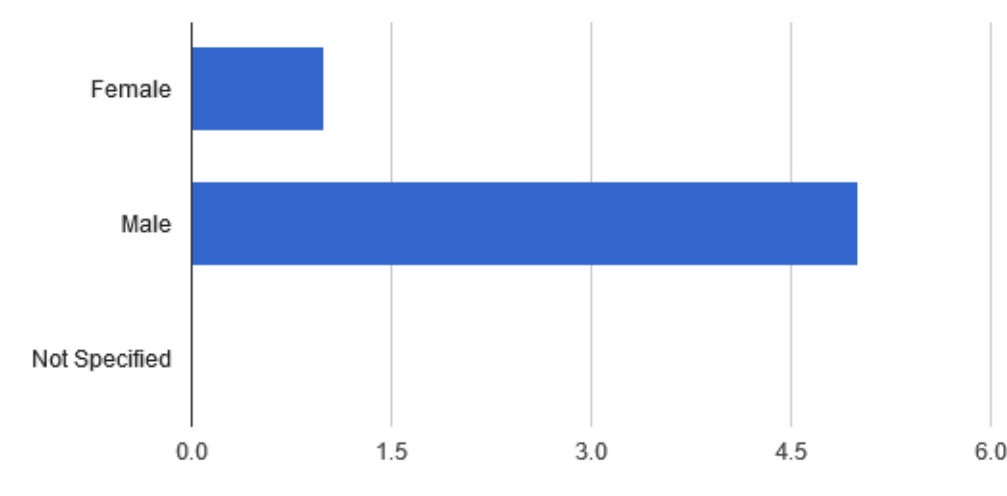
REDCap Tools (Data Visualization)

■ REDCap Stats and Graphs Tool

■ Age variability

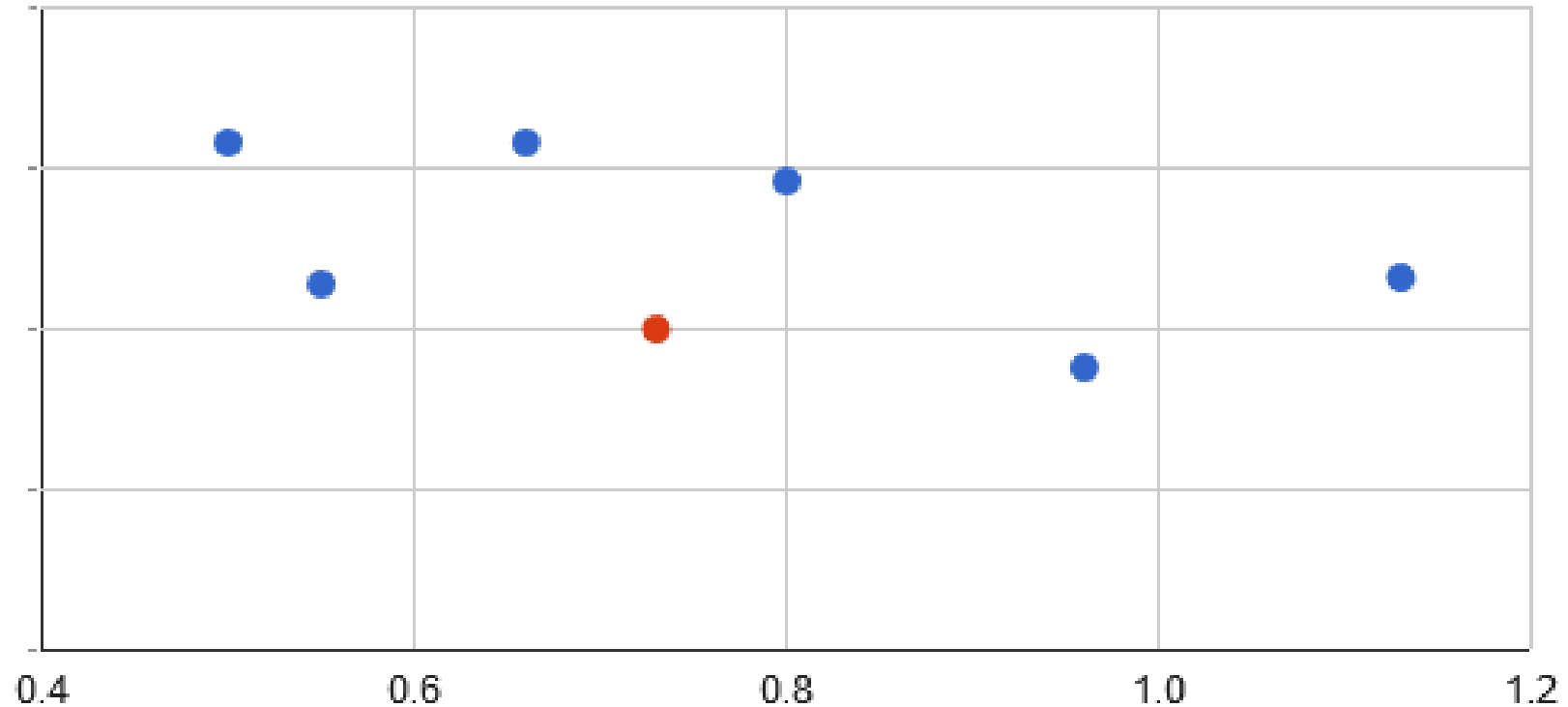


■ Gender



REDCap Tools (Data Visualization)


- **REDCap Stats and Graphs Tool**
- Specific Outcomes (Speed at 2 min in 6MWT)



REDCap Tools (Data Auditing)

■ REDCap Logging Tool (Accountability)

Logging

 [Download entire logging record to Microsoft Excel \(CSV\)](#)

This module lists all changes made to this database, including data exports, data changes, and the creation or deletion of users.

Filter by event: All event types (excluding page views) ▼
Filter by user name: All users ▼
Filter by record: All records ▼
Displaying events (by most recent): 1 - 100 ▼

Time / Date	User name	Action	List of Data Changes OR Fields Exported
4:09pm 12/22/2010	redcap3	Created User testuser	user = 'testuser'
4:09pm 12/22/2010	redcap3	Manage/Design	Create database field
4:08pm 12/22/2010	redcap3	Updated Record 1032	family_id = '1032', first_name = [REDACTED] last_name = [REDACTED] dob = [REDACTED] age = [REDACTED] sex = [REDACTED]
4:08pm 12/22/2010	redcap3	Created Record 1032	proband_relation = '0', subject_info_complete = '0', study_id = '1032'
4:07pm 12/22/2010	redcap3	Updated Record 1001	off_site_clinics(10) = checked
3:42pm 12/22/2010	redcap3	Data Export	study_id, proband_relation, proband_relation_other, family_id, first_name, last_name, dob, age, sex, birth, ethnic_ori, ethnic_ori_other, off_site_clinics, off_site_notes, comments, height, weight, subject_info_complete,

REDCap Tools (Data Quality)

■ REDCap Data Quality Tool

Data Quality Rules

Execute rules: All All except A&B All custom Clear

Apply to: -- All records -- ▼

	Rule #	Rule Name	Rule Logic (Show discrepancy only if...)	Real-time execution ?	Total Discrepancies	Health Sciences Group	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		
	Add	<div>Enter descriptive name for new rule (e.g., Participants below age 18)</div>	<div>Enter logic for new rule (e.g., [age] < 18) How do I use special functions?</div>	<div><input type="checkbox"/> Execute in real time on data entry forms ?</div>			

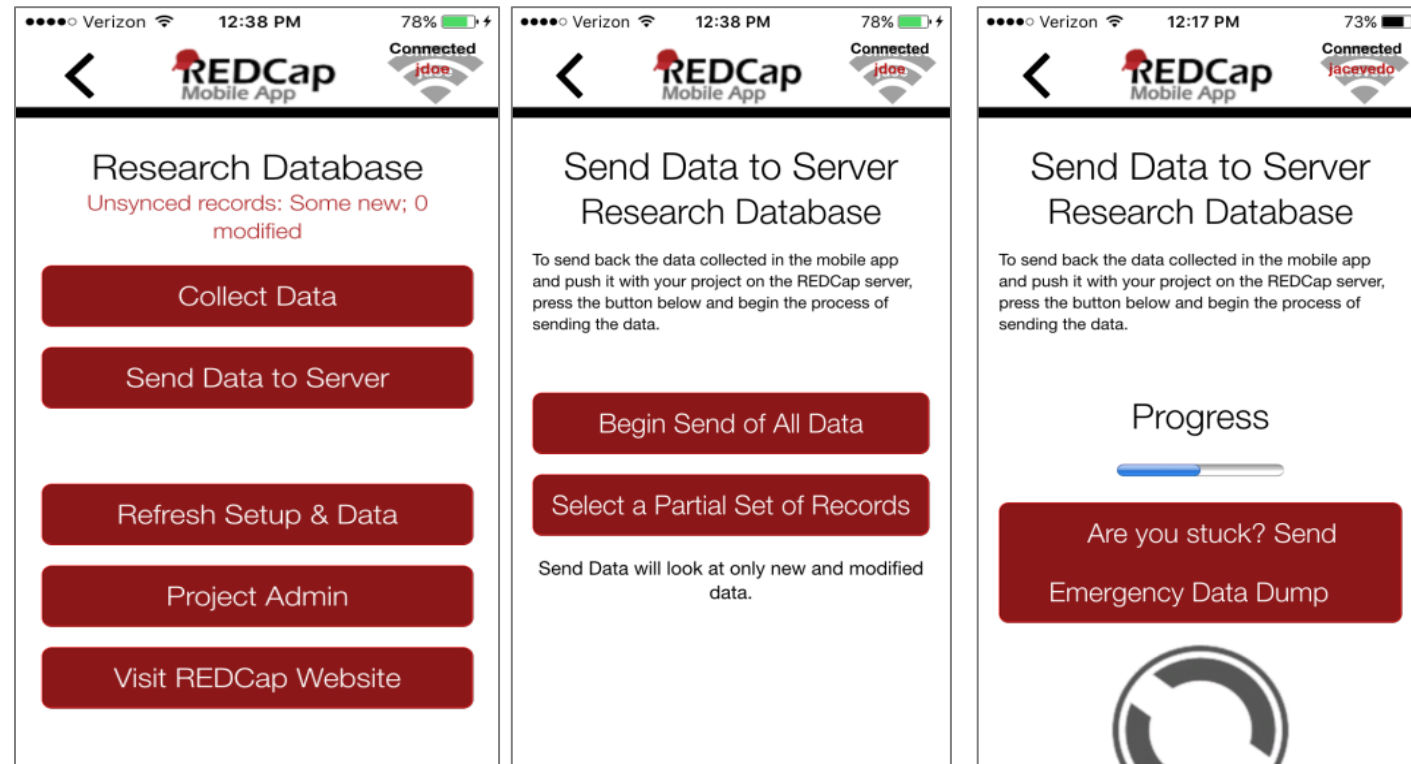
* The Missing Values rules above automatically exclude fields hidden by branching logic when searching for missing values. If a field is hidden by branching logic on a data entry form or survey, then it is expected that such a field would not have a value. Thus for these cases, the values for those hidden fields will not be classified as missing. Additionally, checkbox fields are also excluded since an unchecked checkbox is itself often considered to be a real value.

** The term 'hidden fields' refers to any fields on a survey or data entry form that are not being displayed because branching logic is hiding them, which assumes that the field's value should be blank/null.

REDCap Tools (Data Capturing)

■ REDCap Mobile App

- The App should **only be used** when
 - *There is no internet service (e.g., no WiFi or cellular service)*
 - *Or where there is unreliable internet service*
- When back online, you can send data to the project's REDCap server
- This will synchronize the mobile device's data with the main REDCap project
- User rights inside the Mobile App will follow the user's rights in the Project



REDCap Tools (Data Capturing)

■ REDCap Mobile App (Examples)



REDCap Tools (Data Capturing)

■ MyCap

12:15

Activities

Fri 09 Sat 10 Sun 11 Mon 12 Tue 13 Wed 14 Thu 15

Daily Symptom Adult 1

Daily Symptom Child 1

Daily Symptom Adult 2

Activities Messages Briefcase Profile

12:16

← Daily Symptom Adult 1 CANCEL

Are you having any of the following symptoms today?

- ☐ Nasal Discharge (Runny Nose)
- ☐ Nasal Congestion (Stuffy Nose)
- ☐ Sneezing
- ☐ Coughing
- ☐ Fever
- ☐ Malaise (Generally Feeling Ill)
- ☐ Throat Discomfort (Sore or Itchy)
- ☐ Chills
- ☐ Headache
- ☐ None

12:16

← Daily Symptom Adult 1 CANCEL

Are you having any of the following symptoms today?

- ☒ Nasal Discharge (Runny Nose)
- ☐ Nasal Congestion (Stuffy Nose)
- ☒ Sneezing
- ☐ Coughing
- ☐ Fever
- ☐ Malaise (Generally Feeling Ill)
- ☒ Throat Discomfort (Sore or Itchy)
- ☐ Chills
- ☐ Headache
- ☐ None

12:16

← Daily Symptom Adult 1 CANCEL

Nasal Discharge (Runny Nose)

- ☐ None (0)
- ☐ Mild (1)
- ☐ Moderate (2)
- ☐ Severe (3)





NEXT

REDCap Tools (External Modules)

- Individual Packages of Software Installed by the REDCap Project Manager
 - *Function at System and Project Level*
 - *Provide Ability to Extend REDCap's Current Functionality*
 - *Customize REDCap's Behavior*
 - *Customize REDCap's Appearance*
 - *Curated by the Vanderbilt REDCap Technical Team*
 - *New and Updated Modules Released Frequently*
 - *Recommend Testing Prior to Production Implementation*

REDCap Tools (External Modules)

- Example (Dynamically Colored Record Labels)

Record ID	Participant information
<u>1</u> (Aragorn, Catherine)	
<u>2</u> (Boleyn, Anne)	
<u>3</u> (Seymour, Jane)	
<u>4</u> (Cleves, Anne)	

REDCap Tools (API)

- The REDCap API is an interface that allows external applications to connect to REDCap remotely
 - *used for programmatically retrieving or modifying data or settings within REDCap*
 - *such as performing automated data imports/exports for a specified REDCap project.*

REDCap Tools (API)

■ REDCap API Example

6MWT

Editing existing Research Participant ID **JRH_1**

Research Participant ID: JRH_1

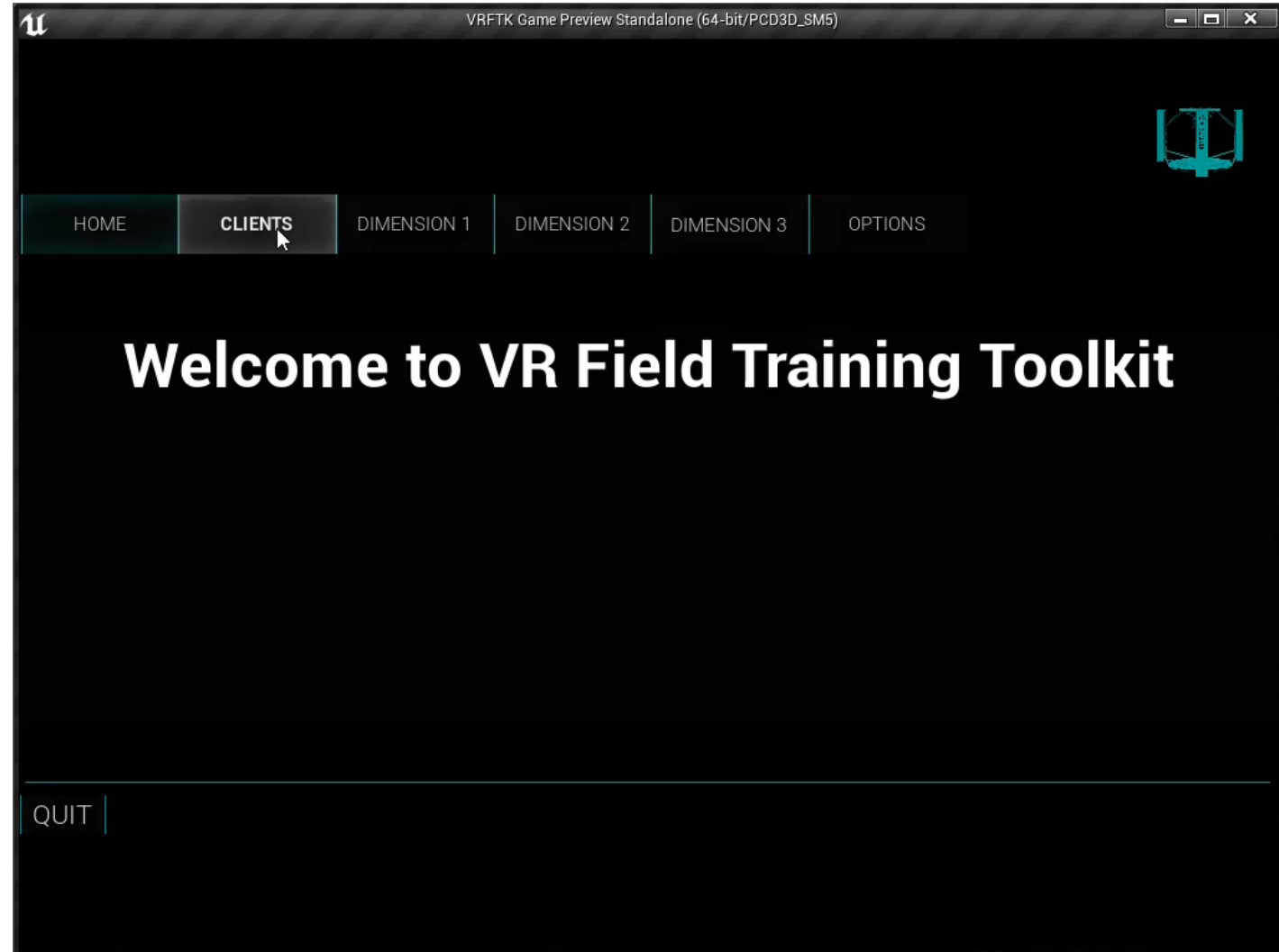
6 Minute Walk Test

Distance at 1 min (meters)	<input type="text" value="30"/>
Distance at 2 min (meters)	<input type="text" value="60"/>
Distance at 3 min (meters)	<input type="text" value="90"/>
Distance at 4 min (meters)	<input type="text" value="120"/>
Distance at 5 min (meters)	<input type="text" value="150"/>
Distance at 6 min (meters)	<input type="text" value="180"/>

Research Participant ID **JRH_1**
[Select other record](#)

Data Collection Instruments:

- ☒ Demographics
- ☒ **6MWT**
- ☒ Dimension Info
- ☒ Trial Outcomes Dim 1 (66) +
- ☒ Trial Outcomes Dim 2 (12) +
- ☐ Trial Outcomes Dim 3
- ☐ Trial Outcomes Dim 4
- ☒ Baseline Data (Week 0)
- ☒ Pre-Intervention (Week 4)
- ☒ Post-Intervention (Week 8)
- ☒ Follow-Up (Week 12)
- ☒ Completion Data



REDCap Security

- Handle ‘Sensitive’ & Identifiable Data with extra Care
 - *Be extra careful if you are collecting potentially “Sensitive” and/or Identifiable Data.*
 - *Only collect the minimum identifiable data required.*
 - *Be sure to flag all identifying data fields as an “Identifier” in REDCap, so that you can easily export de-identified data.*
 - *Assign appropriate Project access rights (eg Data export) to your Project Team.*

- In REDCap it is easy to download a full set of data, including PHI, if you have the permissions.
 - *Because of that convenience, it would be easy to download a set to your desktop, view the data, and then leave it, forgetting it’s there, even past its usefulness. These “forgotten” record sets could get into the wrong hands if left, unprotected or forgotten.*

REDCap Security

- The Best Practice is to keep a separate “Master List” that stores the identifiers and associates them with the participant ID in REDCap.

MASTER LIST

Study ID	Client Name
A8TN9C	
9NV95I	
K81M2Z	
NNQUU3	
9TVUT2	
T2G357	
U4XVZM	
F0OA56	
1HMMOH	
2ZM505	

Study ID	Client Name
FILC1C	
4UZ5RV	
AAN5KV	
W0CZOD	
THF45X	
BO08UI	
3B45ZU	
ICNTMQ	
HLQ6HW	
GOAGF0	

REDCap Security

- Identify the personal identifiers in this form

Demographics

Adding new Research Participant ID JRH_1234

Research Participant ID JRH_1234

Consent Information

Date subject signed consent Today Y-M-D
YYYY-MM-DD

Upload the patient's consent form [Upload document](#)

Contact Information

First Name

Last Name

Street, City, State, ZIP Expand

Phone number Include Area Code

E-mail

Personal Information

Date of birth Today Y-M-D

Age (years) View equation

Gender ☐ Female ☐ Male ☐ Not Specified

[reset](#)

REDCap Security

■ HIPAA Identifiers

- *Name*
- *All geographic subdivisions smaller than state, except for the initial 3 digits of a zip code when it contains more than 20,000 people.*
- *All elements of dates (except year) and all elements of dates for ages over 89.*
- *Telephone Number*
- *Fax Number*
- *Email Address*
- *Social Security Number*
- *Medical Record number*
- *Health Plan Beneficiary Number*
- *Account Numbers*
- *Certificate/license numbers*
- *Vehicle identifiers and Serial Numbers, including License Plates*
- *Device identifiers and Serial Numbers*
- *Web Universal Resource Locators (URLs)*
- *Internet Protocol (IP) Address Numbers*
- *Finger and Voice Prints*
- *Full-face photos*
- *Any other unique identifying number, characteristic or code*

Demographics

Adding new Research Participant ID JRH_1234

Research Participant ID JRH_1234

Consent Information

Date subject signed consent Today Y-M-D

Upload the patient's consent form [Upload document](#)

Contact Information

First Name

Last Name

Street, City, State, ZIP

Phone number Include Area Code

E-mail

Personal Information

Date of birth Today Y-M-D

Age (years) View equation

Gender ☐ Female ☐ Male ☐ Not Specified

[reset](#)

REDCap Security

- It is the responsibility of BOTH the Project Owner and the Project member, who exported the data from the REDCap Project to any electronic data storage device such as laptops to
 - *take adequate measures to protect the exported data*
 - *ensure its proper use*
- All Project members with ‘Export Data’ user right should be trained and knowledgeable in securely handling the exported data

REDCap Examples

- Measure the use of an app used in research projects
- Permission to contact patients for research purposes
- Telehealth services monitoring
- Quality Improvement
- Annual Faculty Reports

REDCap Examples (Systematic Review)

To use REDCap to manage your systematic review, it is important to

- Create a clear protocol to make the REDCap coding as easy as possible.
- Create conditional questions based on the protocol.
- Manage project progress with the Record Status Dashboard.
- Make assignments to communicate with researchers about the articles that they must review.
- Export data and selected questions in a readable format.

REDCap Examples (Systematic Review)

Using REDCap for a Systematic Review



Article ID: _____

Reviewer Initials: _____

Date of Review: _____

Article Authors /Year: _____

INCLUSION: Article includes information about:

___ education on consequences of TBI **OR** ___ self-management training on how to manage consequences of TBI **AND**

___ education (or training) intended for people with TBI or caregivers, family, or other support system

Both of the above must be checked for article to be reviewed.

EXCLUSION (if any checked, STOP REVIEW):

___ education or training concerns a specific deficit or problem associated with TBI (physical, cognitive, or emotional function; substance abuse) (note: comprehensive “packages” or education programs with modules on various specific topics are OK) **OR**

___ education is intended for disability or disease other than TBI/ABI **OR**

___ training concerns goal management, problem solving, executive function, managing schedules, etc. **OR**

___ education or training is focused on prevention of TBI/ABI **OR**

___ **target audience** is professionals (medical professionals, teachers, coaches, athletic trainers, etc.) **OR**

___ target audience is general public (e.g., public awareness campaigns) **OR**
















___ there is no education or training discussed in the article **OR**

___ other reason (specify): _____

REDCap Examples

■ CRIR Administration

General Information
























 Editing existing Code du chercheur/Researcher ID (NIP) 3	
Code du chercheur/Researcher ID (NIP)	3 <small>To rename the record, see the record action drop-down at top of the Record Home Page.</small>
Information Chercheur/Researcher Information	
Nom du chercheur/ Researcher's name :	  <input type="text"/>
Axe/ Axis	  Axe 1 ▼
Unité thématique/ Thematic unit	  Thème 1 ▼
Site/ Site	  <input type="text"/>
Université/ University :	  <input type="text"/>
Organisation de conférences/Conference organisation	
Durant les années 2017 à 2020 (inclusivement), avez-vous été impliqué dans l'organisation de conférences ou congrès?/ During the years 2017 to 2020 (inclusively), were you involved in the organization of conferences?	  <input type="radio"/> Oui/Yes <input type="radio"/> Non/No <small>reset</small>
Regroupements/réseau stratégiques/Strategic group/team networks	
Durant les années 2017 à 2020 (inclusivement), avez-vous été impliqué dans des regroupements/réseau stratégiques à portée internationale? During the years 2017 to 2020 (inclusively), were you involved in international strategic group/team networks?	  <input type="radio"/> Oui/Yes <input type="radio"/> Non/No <small>reset</small>

REDCap Examples

■ CRIR Administration

Project Information

Current instance:  1 - 

 Editing existing Code du chercheur/Researcher ID (NIP) 3 	
Code du chercheur/Researcher ID (NIP)	3
Information Liée au Projet/Project Information	
Titre du projet/ Project title:	  <input type="text"/>
Code du projet/ Project code:	  <input type="text"/>
Objectif du projet/ Aim of the project:	  <input type="text"/>
Organisme de financement/Funding agency	  <input type="text"/>
Quel est votre statut dans ce projet? What is your status in this project?	  Co-PI 
Ce projet est-il réalisé en collaboration avec d'autres chercheurs du CRIR ? / Is this project being carried out in collaboration with other CRIR researchers?	 <input type="radio"/> Oui/Yes  <input checked="" type="radio"/> Non/No reset
Date de début du projet/ Project start date:	  04-01-2016  Today M-D-Y
Date de fin de projet/ Project end date:	  <input type="text"/>  Today M-D-Y
Est-ce que ce projet est fondamental ou clinique? / Is this a fundamental or a clinical project?	 <input type="radio"/> Fondamental/Fundamental  <input type="radio"/> Clinique/Clinical reset

REDCap Best Practices

- Determine the data which are required to answer the Research Question(s)
 - *Do not collect “additional” data which does not add value to your research*
- Plan and review the actual Data Collection workflow.
 - *Is it practical and efficient?*
 - *Identify the necessary logistics, resources and people needed for data collection*
- Always TEST your project
 - *Are you able to continue data collection without REDCap in case it is not available*
 - *Are you able to download all of your data*
 - *Check integrity of the data by creating reports*
- Always specify measurement units
- Always use data validation

REDCap Best Practices

- Avoid Free-Text fields
 - *Use categorial response field types instead (dropdown list / radio button)*
- Print PDF forms to use in case the REDCap system is not available
- Use short and clear variable names
 - *They should be unique within a project*
 - *Not start with underscore or a number*
 - *Should be descriptive and clear enough to understand what is being collected*
- Provide instructions to reduce misinterpretations
- Be clear and concise with data questions

REDCap Best Practices

- Use **consistent coding of variables**
 - *Example – 1 = Yes, 0 = No*
 - *‘Unknown’ or ‘Other Response’ = very large or negative number (999)*
- Avoid missing values
 - *Try to use “None” / “Not known” etc*
- Group related variables on forms to improve data entry workflow
 - *Keep forms short to minimize risk of data loss.*
- Do not change variable names or values of categorical field types once you begin collecting real data.
- For a survey with many questions, break them into multiple pages using section headers.

REDCap Project Development Support

■ REDCap Project Manager mandates:

- *Assists in designing, creating and administering projects within REDCap*
- *Provides regulatory application guidance to research investigators by advising how to manage data and private health records on the REDCap platform*
- *Reviews projects for proper user configurations to ensure security compliance*
- *Ensures data sets are built in a way they will respond correctly for analysis by providing application support guidance*

REDCap Project Development Support

■ REDCap Project Manager mandates:

- *Coordinates and facilitates regular audit activities*
- *Creates client-server applications for end users (C#, Python, Unity, Unreal) and provides assistance in the direct integration of REDCap databases into research projects.*
- *Educates the CRIR community on development techniques and approaches through educational workshops as well as in person mentoring*
- *Builds relationships with end-users / labs / groups as point-of-contact for any kind of assistance with REDCap.*

REDCap Project Development Support

REDCap Project Manager contact information:

■ Email:

- samir.sangani@mail.mcgill.ca
- samir.sangani.cissslav@ssss.gouv.qc.ca

■ Phone Number:

- (450) 688-9550 ext 4817

■ Prefer to do zoom meetings as

- *Saves traveling time*
- *Can be scheduled quickly*
- *Can be recorded for reviewing at a later time*

REDCap Project Manager's Code of Conduct and Ethics

- I will ensure my highest priority is to respect the individuals behind the data and will encourage and promote the writing and adoption of relevant policies and Standard Operating Procedures to be consistent with the institutions ethical principles.
- I will strive to match privacy and security safety guards with privacy and security expectations. I will maintain and protect the confidentiality of any information to which I may have access, regardless of the method by which I came into knowledge of it.
- I understand that the data housed in REDCap needs to be protected in the most secure ways possible. I will audit the database in a timely manner, addressing and dealing with any potential issues as soon as possible. I will educate myself on all aspects of security, including for the database, the web server, and any other relevant area requiring protection.
- I will use any and all resources and knowledge I have to ensure that REDCap is available more than 99% of the time. This includes doing upgrades / maintenance during a time that will have minimal impact to the users and participants. I will ensure that the database backups are viable, retrievable and usable.
- I will continue to update and enhance my technical knowledge. I will ensure that my skills are in tandem with my responsibilities, and that I am able to quickly and efficiently learn a new skill as required. I will share my knowledge and experience with others.
- I will communicate with management, users and colleagues about REDCap matters of mutual interest. I will strive to listen to and understand the needs of all parties in all aspects of a project.

REDCap FAQs

LOGIN SECTION
Select the Login item that best fits your question.
(A screenshot will appear for some selected items.)

How do I access REDCap?

My Account is suspended.

How do I add a secondary email address to my REDCap profile account?

REDCap Availability

- **ALL CRIR RESEARCHERS AND CLINICIANS (including support from REDCap Project Manager)**
 - *housed on a secure Amazon Web Server which is deployed in an isolated, three-tiered Virtual Private Cloud*
 - *Any and all web-based information transmission is encrypted by default at rest and in flight (in accordance with HIPAA)*
 - *Database backups are performed automatically to enable operational and disaster recovery*
 - *To help protect against common web exploits, the application uses an enterprise firewall solution, the AWS Web Application Firewall (WAF)*
- **Available for FREE** – However we do request that if you have funding in your grant and if you think the resources provided are helpful please consider allocating some amount of funds to REDCap platform.

REDCap Availability

- Two potential environments – Staging and Production
- Once the projects are ready to move to production mode, they will be moved to production server (removed from staging server to make space for other projects)
- Regular evaluation of new releases of REDCap and the REDCap Project Manager will test them to determine the impact of new features and fixes before its implementation in production environment (Upgrades to REDCap need to strike a balance between safety of existing projects and keeping up with new functionality and pertinent bug fixes)
- We will be providing Standard Operating Procedure documents for
 - *Adding New Users*
 - *New Project Requests*
 - *Data Sharing Agreements*

REDCap Workshops

- We are open to offering workshops based on the requirements of the institutions
 - *The workshops can target both beginners as well as advanced users*

- Beginner workshop would include
 - *Principles about REDCap*
 - *Best Practices for getting started with online databases and surveys*

- Intermediate / Advanced Workshops would include
 - *Creating and scheduling multi-site studies (Survey Queues, Calendar scheduling, Alerts and Notifications, Data Access Groups)*
 - *Advanced API Use in Research Studies (How to securely receive and transmit data in your research experiments)*

Thank You!!!

