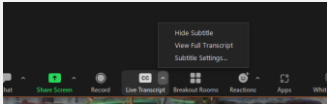


CRRO RESEARCH SEMINAR OCTOBER 19TH, 2022

REDCap Case Studies – A deeper dive

HOUSEKEEPING AND REMINDERS

- Today's session is being recorded. All recordings and slides of [previous seminars](#) are available on CRRO website.
- We've turned on auto-captioning for accessibility and better understanding.
You can turn this off on your own screen if it's distracting. 
- Evaluation survey will be available at the end – this is valuable to how these are presented and what topics we cover.
- It's great to see faces and make connections – please turn your camera on if possible!
- Turning your camera on and off is a great way to fix connection issues but remember to turn back on.

[Research Professionals Network → Join!](#)

- Monthly workshops – must be a member to attend
- Provides professional development opportunities

[CRRO Mailing List → Join!](#)

- Receives email communications on training

CRRO EDUCATION CALENDAR

October

RPN Workshop
Fundamentals



November

Seminar
RPN Workshop
Fundamentals



December

Seminar
RPN Workshop
PI Training
Fundamentals



[All information including topics and dates available on CRRO Education Calendar](#)

All active through June 2023

TODAY'S AGENDA

- Speakers will present on how they are using REDCap for their studies, exploring the different functionality of REDCap and more traditional data collection methods. This seminar will focus on real-world implementation and recommendations for learning and best practices.
 - Sarah Brédy, BA – Research Assistant in General Internal Medicine
 - Worked on different BMC projects that included translations and recruitment from the clinic. Currently working on a multitude of projects such as writing a paper and conducting qualitative interviews on both prostate cancer patients and refugees.
 - Sarah Weber, MPH – Project Management Specialist in Infectious Diseases
 - Project Management Specialist at BMC with Dr. Karen Jacobson's research group. Primary role is the management of domestic and international research studies on tuberculosis and COVID-19. Currently manages two large cohort studies in South Africa focused on the relationship between alcohol/substance use and tuberculosis.
 - Kayla Brown, MS, MS - Psychiatry
 - Fourth year PhD student in the Behavioral Neuroscience program at Boston University and completed a dual MS degree in Medical Sciences and Clinical Research from Boston University in 2019. Serves as the Clinical Research Coordinator for Dr. Ann Rasmusson's investigator-initiated multi-site Phase II clinical trial studying the effects of allopregnanolone on memory processes involved in recovery of posttraumatic stress disorder. Primary research interests include the role autoimmune diseases, infections, and neuroinflammation play in psychiatric disorders.
- Panel session for all questions – hold all questions until all presenters are complete
 - Put questions in chat and they'll get answered when the panel convenes
 - Use the "raise your hand" function and we'll call on you to ask your question during the panel session

REDCap: Minimizing the Language Gap in Research

Sarah Brédy
B.A.
BMC Research Assistant



Language Gap in Research

- A significant percentage of adult US clinical trials exclude individuals who cannot communicate in English or are not native English speakers.
- Diverse samples in clinical trials can make findings more generalizable to the overall population
- Diverse samples may also provide more insight into treatment efficacy in a wider population

How can REDCap help?



Branching Logic

- This allows particular questions or fields to be hidden in certain circumstances.



Form 1 (Top):

To which gender identity do you most identify? (select one)

☒ Female
☐ Male
☐ Other
☐ Prefer not to say

What is your race? (select all that apply)

☐ American Indian/Alaska Native
☐ Asian
☐ Native Hawaiian or Other Pacific Islander
☐ Black or African American
☐ White
☐ Prefer to self-describe
☐ Prefer not to say

Form 2 (Bottom):

To which gender identity do you most identify? (select one)

☐ Female
☐ Male
☒ Other
☐ Prefer not to say

Please Describe

What is your race? (select all that apply)

☐ American Indian/Alaska Native
☐ Asian
☐ Native Hawaiian or Other Pacific Islander
☐ Black or African American
☐ White
☐ Prefer to self-describe
☐ Prefer not to say

Branching Logic Continued...

Variable: comfy_lang Branching logic: [language_eligibility] = '1'

Which language are you most comfortable reading and speaking in?

* must provide value

☐ English
☐ Haitian Creole
☐ Spanish

reset

Add Field Add Matrix of Fields Import from Field Bank

Variable: language_preference Branching logic: [language_eligibility] = '1'

Which language do you prefer to take the survey in?

* must provide value

☐ English
☐ Haitian Creole
☐ Spanish

reset

Add Field Add Matrix of Fields Import from Field Bank

Branching Logic Continued...

Variable: preg_care Branching logic: [language_preference] = '1'

8B. In your most recent pregnancy, how would you describe your relationship with your pregnancy care team?

☐ Strong (they know me, and they help me with my problems)
☐ Medium (they might know me, and they sometimes help with my problems)
☐ Weak (they do not know me, they do not help me with my problems)
☐ Don't know/Not sure

reset

Add Field Add Matrix of Fields Import from Field Bank

Variable: preg_relati_span Branching logic: [language_preference] = '3'

8B. . En su embarazo más reciente, ¿cómo describiría la relación con su equipo de atención para el embarazo?

☐ Fuerte (me conocen y me ayudan con mis problemas).
☐ Más o menos (puede que me conozcan y a veces me ayudan con mis problemas).
☐ Débil (no me conocen, no me ayudan con mis problemas).
☐ No sé/No estoy segura

reset

Add Field Add Matrix of Fields Import from Field Bank

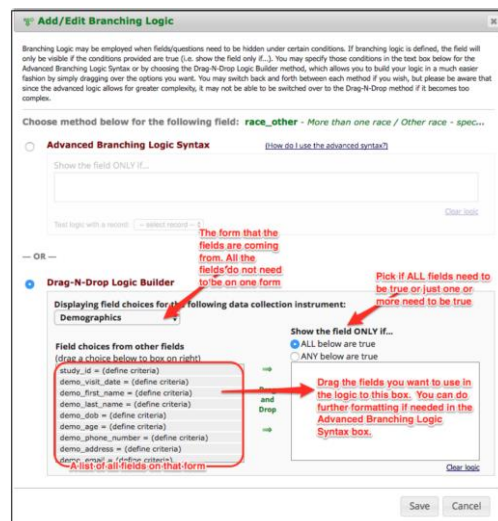
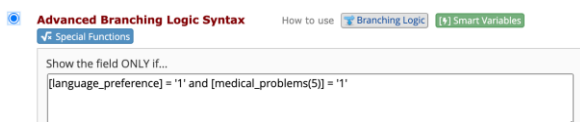
Variable: age_hc Branching logic: [language_preference] = '2'

1. Ki laj ou? (ans)

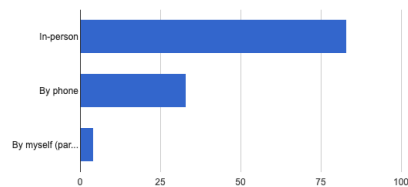
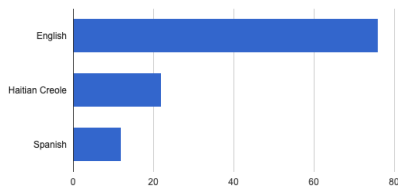
Let's go into REDCap!

Branching Logic Common mistakes

- Each field has a variable name to identify them, so double check that you are choosing the right one.
- Be careful when choosing if ALL or ANY below are true



Other Reasons why Redcap was helpful



Enter the Survey Access Code

To allow a respondent to begin this survey, have them navigate to the URL below and enter the survey access code. The code is permanent and will never change. (Note: The web address is the same for all projects and surveys, so you may bookmark the address on a computer or device to quickly return to it multiple times.)

1.) Go to this web address:

<https://redcap.bumc.bu.edu/surveys/>

2.) Then enter this code:

C8T9KYJPP

OR

Generate Short Code

Alternatively, you may generate a shorter, temporary code that will expire after only one use or after one hour has passed.

Generate Short Code

Scan the QR Code

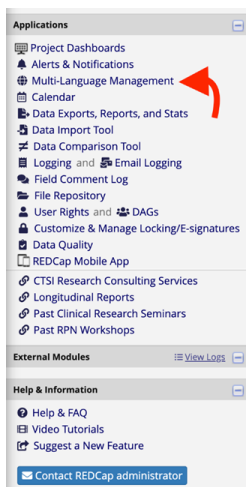
The survey link has been converted into a QR code, which can now be scanned by a device that has an app capable of reading QR codes. Once the QR code below is scanned, it should take the respondent directly to the survey in a web browser.



Print for Respondent

Close

REDCap's Versatility



Languages Forms/Surveys Alerts Misc User Interface Settings Save Changes

Manage the available languages in this project using the table and options below by following these steps:

1. Create your default language (i.e., used when creating your fields, instruments, etc.). This will serve as the reference for the other languages.
2. Add other languages that you wish to offer as a translation of the default language.
3. Translate your default text into different languages by clicking the tabs above or the icons to the right of each language below.
4. Test your translations by switching back and forth between languages on your data entry forms and/or surveys. Note that only active languages will be available for selection on those places.
5. Learn how to implement some language-related action tags, such as `@LANGUAGE-SET`, if desired. Learn about them here: [Action Tags](#)

+ Add a new language

ID	Display Name	Active	Default	Fallback	RTL	Actions
en-US	English	<input checked="" type="checkbox"/>	<input checked="" type="radio"/>	<input checked="" type="radio"/>	<input type="checkbox"/>	
ht	Haitian Creole	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	
es	Spanish	<input checked="" type="checkbox"/>	<input type="radio"/>	<input type="radio"/>	<input type="checkbox"/>	

(Optional) Designate a field for storing a participant's language preference

Use this feature to set a source for a participant's language preference (their initial language setting). This must be a radio or dropdown field with choices matching the language ID you have defined for each language above, or a text box field with no field validation. The value of this field can be set manually through data entry/data import or with the `@LANGUAGE-CURRENT-FORM/SURVEY` action tags. The value of this setting will dictate the language used for

Thank you!

References:

- Frayne SM, Burns RB, Hardt EJ, Rosen AK, Moskowitz MA. The exclusion of non-English-speaking persons from research. J Gen Intern Med. 1996;11(1):39-43. doi:10.1007/BF02603484
- Muthukumar AV, Morrell W, Bierer BE. Evaluating the frequency of English language requirements in clinical trial eligibility criteria: A systematic analysis using ClinicalTrials.gov. PLoS Med. 2021;18(9):e1003758. Published 2021 Sep 14. doi:10.1371/journal.pmed.1003758
- Egleston BL, Pedraza O, Wong YN, et al. Characteristics of clinical trials that require participants to be fluent in English. Clin Trials. 2015;12(6):618-626. doi:10.1177/1740774515592881
- <https://www.bmc.org/medical-professionals/office-minority-physician-recruitment>
- <https://www.ctsi.ufl.edu/wordpress/files/2017/06/Branching-Logic-in-REDCap-%E2%80%93How.pdf>



TOTAL Study REDCap

CRRO Clinical Research Seminar | REDCap Case Studies
October 19, 2022

Sarah Weber, MPH

Transmission of Tuberculosis Among illicit drug use Linkages (TOTAL)

- Recruiting 750 people who smoke illicit drugs in Worcester, South Africa to assess TB exposure and disease prevalence
- Data captured in REDCap:
 - Questionnaires on substance use and social network, a TB symptom screening, medical history, and behavioral assessments
 - Test results including rapid HIV testing, Xpert Ultra testing for TB disease, Mtb culture, Mtb whole genome sequencing, host RNA sequencing
 - For individuals with possible TB disease, an interview to identify individual social contacts and places of social aggregation to estimate social epidemiologic links



REDCap Features

1. Field embedding
2. Secondary REDCap for tracking samples ("Sample Tracking System")

1. Field Embedding

Social Contact Survey

Ask participants where they have spent time within the last 1-2 years, including:

- Household information
- Work
- School
- Grocery stores, malls and other retail shops
- Hairdressers/barbers
- Places of worship
- Gyms/recreation centers
- Bars/shebeens/taverns/clubs/restaurants
- Friends and family members' houses
- Places they smoke drugs
- Transport
- Incarcerations

For each place, we record the name, GPS coordinates, and frequency of time spent there.

Assess overlap as potential hot spots for TB transmission.

Previous Formatting

Shopping Related

18. Which shops have you most commonly gone to in the past 2 years? (list up to 3) (names of shops) (Examples: Checkers, Spar, Pick n Pay, Shoprite, Clicks, local General Dealer (ask for specific name) local Superette (ask for specific name) etc.)

Name of Shop #1:

Name of Shop #2:

Name of Shop #3:

18a. GPS coordinates of shops

GPS coordinates shop #1 (Checkers):
Decimal Degrees (e.g. -33.6492, 19.4578)

GPS coordinates shop #2 (Shoprite):
Decimal Degrees (e.g. -33.6492, 19.4578)

19. Which malls/shopping centres have you most commonly gone to in the past 2 years (list up to 3) (mall/shopping centre names)? (Examples: Q Square, Mountain Mill Mall, etc.)

Name of Mall #1:

Name of Mall #2:

Name of Mall #3:

19a. GPS coordinates of malls/shopping centres

Enter names of places
(up to 3)

Location names populate
into each GPS
coordinates field (**pipng**)

The # of places entered =
how many GPS coordinate
fields populate (**branching
logic**)

Changes with Field Embedding

OLD

Shopping Related

18. Which shops have you most commonly gone to in the past 2 years? (list up to 3) (names of shops) (Examples: Checkers, Spar, Pick n Pay, Shoprite, Clicks, local General Dealer (ask for specific name) local Superette (ask for specific name) etc.)

Name of Shop #1:

Name of Shop #2:

Name of Shop #3:

18a. GPS coordinates of shops

GPS coordinates shop #1 (Checkers):
Decimal Degrees (e.g. -33.6492, 19.4578)

GPS coordinates shop #2 (Shoprite):
Decimal Degrees (e.g. -33.6492, 19.4578)

19. Which malls/shopping centres have you most commonly gone to in the past 2 years (list up to 3) (mall/shopping centre names)? (Examples: Q Square, Mountain Mill Mall, etc.)

Name of Mall #1:

Name of Mall #2:

Name of Mall #3:

19a. GPS coordinates of malls/shopping centres

NEW

Shopping Related

5. Which shops have you most commonly gone to in the past 2 years? (list up to 3) (names of shops) (Examples: Checkers, Spar, Pick n Pay, Shoprite, Clicks, local General Dealer (ask for specific name) local Superette (ask for specific name) etc.)

Names of Shops	GPS Coordinates of Shops
Shop #1: <input type="text" value="Checkers"/>	<input type="text"/>
Shop #2: <input type="text" value="Shoprite"/>	<input type="text"/>
Shop #3: <input type="text"/>	<input type="text"/>

6. Which malls/shopping centres have you most commonly gone to in the past 2 years (list up to 3) (mall/shopping centre names)? (Examples: Q Square, Mountain Mill Mall, etc.)

Names of Malls/Shopping Centres	GPS Coordinates of Malls/Shopping Centres
Mall #1: <input type="text"/>	<input type="text"/>
Mall #2: <input type="text"/>	<input type="text"/>
Mall #3: <input type="text"/>	<input type="text"/>

GPS coordinate fields next to each location name.
They still only populate when names are entered.

Embedded Fields in Designer Mode

Variable: sc_shops

5. Which shops have you most commonly gone to in the past 2 years? (list up to 3) (names of shops) (Examples: Checkers, Spar, Pick n Pay, Shoprite, Clicks, local General Dealer (ask for specific name) local Superette (ask for specific name) etc.)

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shops_info

Names of Shops GPS Coordinates of Shops

Shop #1	{sc_shop1}	{sc_shop1gps}
Shop #2	{sc_shop2}	{sc_shop2gps}
Shop #3	{sc_shop3}	{sc_shop3gps}

Contains embedded fields

Variable: sc_malls

10. Which malls/shopping centres have you most commonly gone to in the past 2 years (list up to 3) (mall/shopping centre names)? (Examples: Q Square, Mountain Mill Mall, etc.)

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_malls_info

Names of Malls/Shopping Centres GPS Coordinates of Malls/Shopping Centres

Mall #1	{sc_mall1}	{sc_mall1gps}
Mall #2	{sc_mall2}	{sc_mall2gps}
Mall #3	{sc_mall3}	{sc_mall3gps}

Contains embedded fields

How to Embed Fields

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shop1

Name of Shop #1

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shop2

Name of Shop #2:

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shop3

Name of Shop #3:

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shopsadd

18a. GPS coordinates of shops

gps10001

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shop1gps Branching logic: {sc_shop1} > ""

GPS coordinates shop #1 ({sc_shop1}):

Decimal Degrees (e.g. -33.6492, 19.4578)

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shop2gps Branching logic: {sc_shop2} > ""

GPS coordinates shop #2 ({sc_shop2}):

Decimal Degrees (e.g. -33.6492, 19.4578)

Add Field Add Matrix of Fields Import from Field Bank

Variable: sc_shop3gps Branching logic: {sc_shop3} > ""

- Each individual field must be created on the instrument before being embedded into another field.
- Here, we have separate fields for each of the shop names and gps coordinates.

How to Embed Fields

Edit 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 form on this page. For an overview of the different field types available, you may view the [Field Types video \(4 min\)](#).

Field Type: Descriptive Text (with optional Image/Video/Audio/File Attachment)

Field Label

☒ Use the Rich Text Editor

Variable Name (utilized in logic, calculations)
sc_shops_info
ONLY letters, numbers, and underscores

How to use: [Smart Variables](#) [Pip](#)

Optional file attachment, image, audio, or video:
☒ Embed an external video (provide URL)
 e.g. <https://youtube.com/watch?v=E1h...>
<https://vimeo.com/62730281>, <https://vimeo.com/62730281>, <https://vimeo.com/62730281>, <https://vimeo.com/62730281>
 Display format of video: ☐ In-line ☐ Full-screen
 - or -
☒ Attach an image, file, or audio
☒ Upload file
 Display format of attachment: ☐ Link ☐ Inline image ☐ As video, file, audio, or audio
 (neces/nephews/cousins/aunts/uncles)

Names of Shops

Shop #	Names of Shops	GPS Coordinates of Shops
Shop #1	{sc_shop1}	{sc_shop1gps}
Shop #2	{sc_shop2}	{sc_shop2gps}
Shop #3	{sc_shop3}	{sc_shop3gps}

Insert table by selecting number of rows and columns.

In table cells, enter field labels and embedded variable names in curly brackets.

Create a new Descriptive Text field.

Select the Rich Text Editor.

Embedding Fields into Multiple Choice

Edit Field

You may add a new project field to this data collection instrument by completing the form on this page. For an overview of the different field types available, you may view the [Field Types video \(4 min\)](#).

Field Type: Multiple Choice - Radio Buttons (Single Answer)

Field Label

10. What is your relationship to Person 1?

Choices (one choice per line) [Copy existing choices](#)

3. My grandchild
 4. My sibling
 5. My friend
 6. My parent
 7. My grandparent
 8. Other relative (nieces/nephews/cousins/aunts/uncles)
 9. Other (sc_hh_tb_relation_other1)

10. What is your relationship to Person 1?

☐ My spouse/partner
☐ My child
☐ My grandchild
☐ My sibling
☐ My friend
☐ My parent
☐ My grandparent
☐ Other relative (nieces/nephews/cousins/aunts/uncles)
☒ Other

Name of field to embed is added next to choice option in curly brackets.

Now, when "Other" is selected, the free text field populates next to it.

2. Sample Tracking System

Sample Tracking System

- Purpose: to track location of study samples and transport to labs.
- Every sample collected and entered into the main study REDCap is given a sample ID.
- Sample tracking system REDCap contains one record for each sample, named by sample ID.

TOTAL Sample Tracking System

PID 6001

Record Status Dashboard (all records)

Displayed below is a table listing all existing records/responses and their status for every collection instrument (and if longitudinal, for every event). You may click any of the colored buttons in the table to open a new tab/window in your browser to view that record on that particular data collection instrument. Please note that if your form-level user privileges are restricted for certain data collection instruments, you will only be able to view those instruments and if you belong to a Data Access Group, you will only be able to view records that belong to that group.








Dashboard displayed: [Default dashboard] ▼

Displaying record Page 13 of 33: "TCUL.P0377.01" through "TCUL.P0383.01" of 3,230 records

1

Enter new record name [+ Create](#)

Displaying: Instrument status only | [Lock status only](#) | [All status types](#)

Sample ID	Sample Tracking System
TCUL.P0377.01	 +
TCUL.P0378.01	 +
TCUL.P0380.01	 +
TCUL.P0381.01	 +
TCUL.P0382.01	 +
TCUL.P0382.02	 +
TCUL.P0383.01	 +

Repeating Forms to Check-in & Check-out Samples

TOTAL Sample Tracking System

PID 6001

Record Home Page



The grid below displays the form-by-form progress of data entered for the currently selected record. You may click on the colored status icons to access that form/event.

Choose action for record

Sample ID TCUL.P0377.01

Data Collection Instrument	Status
Sample Tracking System	 +

Repeating Instruments

Sample Tracking System (2)
1 
2 
+ Add new

- Each sample record has one repeating form with two instances.
- Instance #1:** checking the sample into the study clinic after collection
- Instance #2:** checking the sample out of the study clinic when it is transported to the lab

Check-in Form

Sample ID TCUL.P0377.01
To rename the record, see the record action drop-down at top of the Record Home Page.

Participant's ID (PID) P0377

Date sample was collected? 17-10-2022 Today D-H-Y

What is the sample type?

- ☐ Sputum for Xpert Ultra (TXPERT)
- ☒ Sputum for MTB culture for TB diagnosis (TCUL)
- ☐ Blood PAXgene for RNA sequencing (TRNA)
- ☐ Blood COVID serology (TCOVID)
- ☐ Urine (TURINE)
- ☐ Sputum for WGS from Direct Isolate (TWGSDIR)
- ☐ Sputum for WGS From Culture (TWGSCUL)
- ☐ Bioaerosols (TAERO)

Are you checking-in or checking out this sample? 1. Check-in

Date of Check-In (date sample added to fridge) 17-10-2022 Today D-H-Y

New location of sample

- ☒ 1. Study Clinic
- ☐ 2. In transit/shipped

Specify location of sample in fridge (box name)

- ☐ NHLS
- ☒ CULTURE
- ☐ PAXGENE
- ☐ SEROLOGY
- ☐ URINE
- ☐ WGS
- ☐ RASC

Whether sample is being checked-in or checked-out determines subsequent fields (populate based on form branching logic)

Check-out Form

Sample Tracking System

Current Instance: 2

Editing existing Sample ID TCULP0377.01. (Instance #2)

Event: Sample Tracking System (Arm 1: Aim 1, Aim 2, and Aim 3 Arm 1)

Sample ID TCULP0377.01
To rename the record, see the record action drop-down at top of the Record Detail Page.

Participant's ID (PID) P0377

Date sample was collected? 17-10-2022 Today 0-84 Y

What is the sample type?

- ☐ Sputum for Xpert Ultra (TXPERT)
- ☒ Sputum for MTB culture for TB diagnosis (TCUL)
- ☐ Blood PAXgene for RNA sequencing (TRNA)
- ☐ Blood COVID serology (TCOVID)
- ☐ Urine (TURINE)
- ☐ Sputum for WGS from Direct Isolate (TWGSDIR)
- ☐ Sputum for WGS from Culture (TWGSCUL)
- ☐ Bioaerosols (TAERO)

Are you checking-in or checking out this sample? 2. Check-out

If you are checking out the sample, please confirm it is for sample transport 1. Yes, it is for transport

Date of Check-Out (date sample being transported) 18-10-2022 Today 0-84 Y

First fields appear by default based on first instance: ID, date of sample collection, sample type

Confirmation of sample transport and date of check-out populate, because check-out was selected (branching logic).

Shipment Reports

Reports generated to track shipments:

My Reports & Exports					
	Report name	View/Export Options	Management Options	Report ID (auto-generated)	Unique rep (auto-gen)
A	All data (all records and fields)	View Report Export Data Stats & Charts			
B	Selected instruments (all records)	Make custom selections			
1	Sputum for Shipping Report (Xpert Ultra to NHL)	View Report Export Data Stats & Charts	Edit Copy Delete	18305	R-1758Y
2	Sputum for Shipping Report (Rob Warren Lab)	View Report Export Data Stats & Charts	Edit Copy Delete	18312	R-8754C
3	PAXgene for Shipping Report (Blood PAXgene to Fisan K1)	View Report Export Data Stats & Charts	Edit Copy Delete	18315	R-964LS
4	Blood for COVID Serology Shipping Report	View Report Export Data Stats & Charts	Edit Copy Delete	18316	R-782XN
5	Urine for Shipping Report	View Report Export Data Stats & Charts	Edit Copy Delete	18317	R-558NJ
6	RASC Samples	View Report Export Data Stats & Charts	Edit Copy Delete	20200	R-648FR
7	Urine sample check out reports	View Report Export Data Stats & Charts	Edit Copy Delete	22965	R-5437DI
8	Xpert Samples Missing Results	View Report Export Data Stats & Charts	Edit Copy Delete	23053	R-63379
	+ Create New Report				

Shipment Reports

Example report:

TOTAL Sample Tracking System PID 6001

Data Exports, Reports, and Stats [VIDEO: How to use Data Exports, Reports, and Stats](#)

[+ Create New Report](#) [My Reports & Exports](#) [Other Export Options](#) [View Report: Sputum for Shipping Report \(Rob Warren Lab\)](#)

Number of results returned: 6
Total number of records queried: 6,206
Report execution time: 11.3 seconds

[Stats & Charts](#) [Export Data](#) [Print Page](#) [Edit Report](#)

Sputum for Shipping Report (Rob Warren Lab)
This report shows all samples at the study ready for transport to Rob Warren's lab (Aim 1, Aim 2, and Aim 3 Arm 2 sputum samples)

Sample ID	Repeat Instrument	Repeat Instance	Participant's ID (PID)	Date sample was collected?	What is the sample type?
sample_id	redcap_repeat_instrument	redcap_repeat_instance	pid	collection_date	sample_type
TCUL_P0476.02	Sample Tracking System	1			Sputum for MTB culture for TB diagnosis (TCUL) (2)
TCUL_P0477.02	Sample Tracking System	1			Sputum for MTB culture for TB diagnosis (TCUL) (2)
TCUL_P0479.02	Sample Tracking System	1	P0479	11-10-2022	Sputum for MTB culture for TB diagnosis (TCUL) (2)
TCUL_P0494.01	Sample Tracking System	1	P0494	11-10-2022	Sputum for MTB culture for TB diagnosis (TCUL) (2)
TWGSCUL_P0452.01	Sample Tracking System	1	P0452	11-10-2022	Sputum for WGS From Culture (TWGSCUL) (7)
TWGSDIR_P0452.01	Sample Tracking System	1	P0452	11-10-2022	Sputum for WGS from Direct Isolate (TWGSDIR) (6)

This report pulls all samples for culture which have been checked-in but not yet checked-out.

Report Filter Logic

STEP 3

☒ Show data for all repeating instruments for each record returned ?

Filters (optional)

Advanced filter logic:

(e.g., [age] > 30 and [sex] = "1")

[How do I use special functions?](#)

`((([sample_type] = "2") OR ([sample_type] = "6") OR ([sample_type] = "7"))) AND ([check_in_check_out] != "2" AND [current-instance] = [last-instance])`

TIP: Use [X-instance] Smart Variables to filter repeating data.

- Show only repeating instance data: `[current-instance] <> ""`
- Show only the first repeating instance: `[current-instance] <> "" and [current-instance] = [first-instance]`

Filtering for sputum samples for MTB culture or whole genome sequencing

Sample is not being checked-out (it is being checked-in)

Record pulled is the last instance recorded for this participant (last entry is a sample check-in).

One other random tip...

- Each time our team creates a new REDCap project, we copy the project and create a “training portal.”
- Training portals are identical projects without real data.
- Before a project is implemented, field staff are given access to the training portal to familiarize themselves with the forms and practice data entry.
- When we make moderate to major changes to a REDCap project (new instrument, major structural changes or additions to an instrument, etc.), we first add them to the training portal so we can test the changes and give the team opportunity to practice.

REDCap for an Investigator-Initiated Multi-site Phase II Clinical Trial

BY KAYLA BROWN, MS, MS

CLINICAL RESEARCH COORDINATOR & PHD STUDENT

Prior REDCap Experience

- 3 years at Stanford University
- 6 months in the Psychiatry Department at Boston Medical Center

Study Design

Facilitation of Extinction Retention & Reconsolidation Blockade by Intravenous Allopregnanolone in Posttraumatic Stress Disorder

- PI & FDA IND Sponsor: Ann Rasmusson, MD

Multi-site studies within REDCap database:

1. PK Study 1: Extinction Retention
2. PK Study 2: Reconsolidation Blockade
3. Main Study 1: Extinction Retention
4. Main Study 2: Reconsolidation Blockade

Study Design

Each study has 3 subgroups:

1. Women in early follicular menstrual phase
2. Women in mid-luteal menstrual phase
3. Men

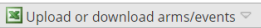
Main Studies:

1. Double blind placebo-controlled phase II clinical trials
2. Stratified randomization by both site & subgroup

REDCap Implementation






1. Define arms
2. Define events for each arm
3. Designate data collection instruments to events on each arm
4. Designate repeatable events or repeatable instruments for each event
5. Harmonize REDCap variables to be consistent with NIMH Data Archive (NDA) variables

PK Studies Arm

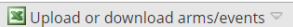


Arm 1: PK Arm 2: Exp +Add New Arm

Arm name: **PK** [Rename Arm 1](#)








	Event # [event-number]	Event Label [event-label]	Custom Event Label [optional]	Unique event name (auto-generated) [event-name]	Event ID (auto-generated, unchangeable) [event-id]
	1	Psychological Screening	psych_screen	psychological_scre_arm_1	37826
	2	Medical Screening	med_screen	medical_screening_arm_1	38276
	3	Ad Hoc Clinical Visit	adhoc_visit	ad_hoc_clinical_vl_arm_1	38277
	4	Day 1	day_1	day_1_arm_1	38278
	5	Day 2	day_2	day_2_arm_1	38279
<div style="display: flex; align-items: flex-start;"> <div style="border: 1px solid #ccc; padding: 5px; margin-right: 10px;">Add new event</div> <div style="flex-grow: 1;"> <div style="border: 1px solid #ccc; height: 20px; margin-bottom: 5px;"></div> <div style="font-size: 0.8em; color: #666;">Descriptive name for this event</div> <div style="border: 1px solid #ccc; height: 20px; margin-top: 10px; margin-bottom: 5px;"></div> <div style="font-size: 0.8em; color: #666;">Custom Event Label (optional) Example: [visit_date], [weight] kg</div> </div> </div>					

Main Studies Arm



Arm 1: PK Arm 2: Exp +Add New Arm

Arm name: **Exp** [Rename Arm 2](#)

	Event # [event-number]	Event Label [event-label]	Custom Event Label [optional]	Unique event name (auto-generated) [event-name]	Event ID (auto-generated, unchangeable) [event-id]
	1	Psychological Screening	psych_screen	psychological_scre_arm_2	38771
	2	Medical Screening	med_screen	medical_screening_arm_2	38772
	3	Ad Hoc Clinical Visit	adhoc_visit	ad_hoc_clinical_vl_arm_2	38773
	4	Day 1	day_1	day_1_arm_2	38774
	5	Day 2	day_2	day_2_arm_2	38775
	6	Day 3	day_3	day_3_arm_2	38776
	7	1 Week Follow-Up	followup	1_week_followup_arm_2	38777

PK Studies Data Collection Instruments

Arm name: PK

[Begin Editing](#) [Save](#)

Data Collection Instrument	Psychological Screening (1)	Medical Screening (2)	Ad Hoc Clinical Visit (3)	Day 1 (4)	Day 2 (5)
Allo Study Information	✓	✓			✓
Demographics (survey)	✓				
Scheduling for Biological Females		✓		✓	
BAT-L (survey)	✓		✓		
CSSRS	✓	✓	✓	✓	✓
Clinician Assessment of Risk to Self/Others	✓	✓	✓	✓	✓
LEC-5 (survey)	✓		✓		
CAPS-5	✓		✓		
CADSS (survey)	✓		✓		
SCID-5	✓		✓		
SF-12 (survey)	✓		✓		
PHQ-9 (survey)	✓		✓		
PCL-5 (survey)	✓		✓		
ISI (survey)	✓		✓		
PANAS (survey)	✓		✓		
STAXI-2	✓		✓		
Vital Signs		✓	✓	✓	✓
Height and/or Weight		✓	✓	✓	
RAVLT		✓	✓		
Cognitive Assessment		✓	✓		
Urine and Saliva Tox Test Results		✓	✓	✓	✓
Creatinine Lab Test Results		✓	✓	✓	
Clinical Lab Test Results		✓	✓		
Screening Physical and Neurological Exam		✓	✓		
Screening Assessments (EKG, WCCVT, Hearing Test)		✓	✓		
Discharge Neurological Exam					✓
Sickness Questionnaire (survey)					
BPI (survey)					
Monk VAS (survey)			✓	✓	✓
Qualitative Sedation Ratings			✓	✓	✓
Source Memory Task				✓	✓
Adverse Events	✓	✓	✓	✓	✓
Protocol Deviations	✓	✓	✓	✓	✓

Main Studies Data Collection Instruments

Arm name: Exp

[Begin Editing](#) [Save](#)

Data Collection Instrument	Psychological Screening (1)	Medical Screening (2)	Ad Hoc Clinical Visit (3)	Day 1 (4)	Day 2 (5)	Day 3 (6)	1 Week Follow-Up (7)
Allo Study Information	✓	✓	✓	✓	✓	✓	✓
Demographics (survey)	✓						
Scheduling for Biological Females		✓	✓	✓			
BAT-L (survey)	✓		✓				
CSSRS	✓	✓	✓	✓	✓	✓	✓
Clinician Assessment of Risk to Self/Others	✓	✓	✓	✓	✓	✓	✓
LEC-5 (survey)	✓		✓				
CAPS-5	✓		✓				
CADSS (survey)	✓		✓				
SCID-5	✓		✓				
SF-12 (survey)	✓		✓				
PHQ-9 (survey)	✓		✓	✓			✓
PCL-5 (survey)	✓		✓	✓			
ISI (survey)	✓		✓	✓			✓
PANAS (survey)	✓		✓				✓
STAXI-2	✓		✓				
Vital Signs		✓	✓	✓	✓	✓	
Height and/or Weight		✓	✓	✓	✓		
RAVLT		✓	✓				
Cognitive Assessment		✓	✓				
Urine and Saliva Tox Test Results		✓	✓	✓	✓	✓	
Creatinine Lab Test Results		✓	✓		✓	✓	
Clinical Lab Test Results		✓	✓				
Screening Physical and Neurological Exam		✓	✓				
Screening Assessments (EKG, WCCVT, Hearing Test)		✓	✓				
Discharge Neurological Exam					✓		
Sickness Questionnaire (survey)			✓	✓			✓
BPI (survey)			✓	✓			✓
Monk VAS (survey)			✓	✓	✓	✓	
Qualitative Sedation Ratings			✓	✓	✓	✓	
Source Memory Task				✓	✓	✓	
Adverse Events	✓	✓	✓	✓	✓	✓	✓
Protocol Deviations	✓	✓	✓	✓	✓	✓	✓

Repeatable Events versus Instruments

1. Repeat event if study visit could be conducted more than once
2. Repeat instrument if data collection instrument will be collected more than one time during a study visit

Repeatable Events versus Instruments

Project status: ☒ Production

Main project settings
Complete! Some options below are disabled because they are not applicable to your project.
☐ Disable ☒ Use surveys in this project ☐ Disable ☒ Use longitudinal data collection

Design your data collection
Complete! Add or edit fields on your data collection instrument using the Online Designer (online method) or the Online Designer (offline method).
Download the current Data Dictionary
Go to ☒ Online Designer or ☐ Offline Designer
Have you checked the ☒ Check for updates button? ☐ No ☒ Yes
Learn how to use ☒ Smart Variables

Define your events and events
Complete! Create events for re-using data collection instruments.
Go to ☒ Define My Events or ☐ Define My Instruments

Enable optional modules
Complete! Some options below are disabled because they are not applicable to your project.
☐ Modify ☒ Repeatable instruments ☐ Enable ☒ Auto-numbering for events ☐ Enable ☒ Scheduling module

Repeatable instruments and events

An excellent way to collect repeating data in REDCap is to use repeatable instruments and/or repeatable events. This is sometimes called one-to-many data collection. Some examples may include but are not limited to the following: data from multiple visits or observations, concomitant medications, adverse events, or repetitive surveys (daily, weekly, etc.).

Below you can specify a data collection instrument or a whole event of instruments to be infinitely repeatable, in which each repeating instrument or event can be repeated a different number of times for each record. You may set any event in the project to be repeatable "for" alternatively set selected instruments to be repeatable within an event. The **'Repeat Entire Event'** option means that all the event's instruments will repeat together and stay connected, whereas the **'Repeat Instruments'** option implies that the instruments will repeat separately and independently from each other on that event. Once an instrument or event is set to repeat, you will see options on the Record Home Page to add another instance of the instrument/event for the currently selected record.

Event Name	Repeat entire event or selected instruments?	Instrument name (select instruments to repeat)	Custom label for repeating instruments (optional)
Psychological Screening (Arm 1: PK)	Repeat Entire Event (repeat)	<input checked="" type="checkbox"/> All Study Information <input checked="" type="checkbox"/> Demographics <input checked="" type="checkbox"/> IRT-L <input checked="" type="checkbox"/> CSRS <input checked="" type="checkbox"/> Clinician Assessment of Risk t... <input checked="" type="checkbox"/> LEC-5 <input checked="" type="checkbox"/> CAPS-5 <input checked="" type="checkbox"/> CQDS <input checked="" type="checkbox"/> SCID-5 <input checked="" type="checkbox"/> PHQ-9 <input checked="" type="checkbox"/> PCL-5 <input checked="" type="checkbox"/> ISI <input checked="" type="checkbox"/> PANAS <input checked="" type="checkbox"/> STAXI-2 <input checked="" type="checkbox"/> Adverse Events <input checked="" type="checkbox"/> Protocol Deviations	

Repeatable instruments and events

Event Name	Repeat Instruments (repeat)
Day 1 (Arm 1: PK)	<input checked="" type="checkbox"/> All Study Information <input type="checkbox"/> Scheduling for Biological Fem... <input type="checkbox"/> CSRS <input type="checkbox"/> Clinician Assessment of Risk t... <input checked="" type="checkbox"/> Vital Signs <input type="checkbox"/> Height and/or Weight <input type="checkbox"/> Urine and Saliva Tox Test Res... <input type="checkbox"/> Creatinine Lab Test Results <input type="checkbox"/> Discharge Neurological Exam <input checked="" type="checkbox"/> Monk VAS <input type="checkbox"/> Qualitative Sedation Ratings <input type="checkbox"/> Source Memory Task <input checked="" type="checkbox"/> Adverse Events <input checked="" type="checkbox"/> Protocol Deviations
Day 2 (Arm 1: PK)	<input checked="" type="checkbox"/> All Study Information <input type="checkbox"/> CSRS <input type="checkbox"/> Clinician Assessment of Risk t... <input checked="" type="checkbox"/> Vital Signs <input type="checkbox"/> Urine and Saliva Tox Test Res... <input type="checkbox"/> Creatinine Lab Test Results <input type="checkbox"/> Monk VAS <input type="checkbox"/> Qualitative Sedation Ratings <input type="checkbox"/> Source Memory Task <input checked="" type="checkbox"/> Adverse Events <input checked="" type="checkbox"/> Protocol Deviations

1. Define Data Access Groups (DAGs)

Access to certain project records may be limited by using Data Access Groups (DAGs), in which only users within a given Data Access Group can access records created by users within that group. This may be useful in the case of a multi-site or multi-group project that requires that groups not be able to access another group's data. Once you have created DAGs, if you would like your users to be in multiple DAGs, you may use the optional DAG Switcher feature to allow users to move themselves in and out of specific DAGs on their own. [Additional instructions](#)

Allopregnanolone Study Information

* must provide value

- * must provide value

- * must provide value

- * must provide value

- 24

Calculated Fields

Field Type: Calculated Field

Field Label: Insomnia Total Score

Calculation Equation: `sum([insomnia_falling1], [insomnia_staying1], [insomnia_waking1], [insomnia_satisfied1], [insomnia_noticeable1], [insomnia_worried1], [insomnia_interfere1])`

Test calculation with a record: -- select record --

Action Tags / Field Annotation (optional): @HIDDEN-SURVEY

Please rate the current (i.e., last one week) severity of your insomnia problem(s):

None Mild Moderate Severe Very Severe

1) Difficulty falling asleep

2) Difficulty staying asleep

3) Problems waking up too early

4) How satisfied/dissatisfied are you with your current (i.e., last 1 week) sleep pattern?

5) How noticeable to others do you think your sleep problem is (i.e., in the last 1 week) in terms of impairing the quality of your life?

6) How worried/distressed are you about your current (i.e., last 1 week) sleep problem?

7) To what extent do you consider your sleep problem to interfere with your daily functioning (e.g., daytime fatigue, mood, ability to function at work/daily chores, concentration, memory, mood, etc.) currently (i.e., last 1 week)?

Calculated Fields

Calculation equation for variable "ga_total"

Variable Name: `ga_total`

Field Label: `Global Affect Total`

Calculation: `round(((gva_happy)+[gva_calm]+200-[gva_sad]-[gva_tense])/4)`

Fields Utilized in Calculation		
Variable Name	Field Label	Form
<code>gva_sad</code>	How sad do you feel?	Monk VAS
<code>gva_tense</code>	How tense do you feel?	Monk VAS
<code>gva_happy</code>	How happy do you feel?	Monk VAS
<code>gva_calm</code>	How calm do you feel?	Monk VAS

Calculation equation for variable "gv_total"

Variable Name: `gv_total`

Field Label: `Global Vigor Total`

Calculation: `round(((gva_alert)+ 300+ [gva_sleepy]-[gva_effort]-[gva_weary])/4)`

Fields Utilized in Calculation		
Variable Name	Field Label	Form Name
<code>gva_alert</code>	How alert do you feel?	Monk VAS
<code>gva_effort</code>	How much of an effort is it to do anything?	Monk VAS
<code>gva_weary</code>	How weary do you feel?	Monk VAS
<code>gva_sleepy</code>	How sleepy do you feel?	Monk VAS

Monk Visual Analogue Scale

Please complete the survey below.

1) How alert do you feel?

Very Little Very Much

2) How sad do you feel?

Very Little Very Much

3) How tense do you feel?

Very Little Very Much

4) How much of an effort is it to do anything?

Very Little Very Much

5) How happy do you feel?

Very Little Very Much

6) How weary do you feel?

Very Little Very Much

Datediff Calculated Fields

0 = round to nearest whole number

Calculation equation for variable "interview_age"

Variable Name: *interview_age*

Field Label: Age in months

Calculation: `round(datediff([dob], [interview_date], 'M'),0)`

Fields Utilized in Calculation		
Variable Name	Field Label	Form Name
<i>interview_date</i>	Date of Visit	Allo Study Information
<i>dob</i>	Date of Birth	Allo Study Information

Non-Numerical Calculated Fields

Use for calculations for which output is not numerical

1. Field Type: Text Field
2. Action Tag: @CALCTEXT function

Calculation equation for variable "crrorsu"

Variable Name: *crrorsu*

Field Label: Creatinine Unit

Calculation: `@CALCTEXT(if([allo_site] = '1', 'mg/dL', 'mg/dL'))`

Fields Utilized in Calculation		
Variable Name	Field Label	Form Name
<i>allo_site</i>	IV Allopregnanolone Study Site	Allo Study Information

Calculation equation for variable "hdl_ll"

Variable Name: *hdl_ll*

Field Label: HDL - Lower Limit

Calculation: `@CALCTEXT(if([allo_site] = '1', '< 34', '< 40'))`

Fields Utilized in Calculation		
Variable Name	Field Label	Form Name
<i>allo_site</i>	IV Allopregnanolone Study Site	Allo Study Information

If/Then Conditional Logic Calculated Fields

Use for calculations where outcome value is based on conditional field being true or false

Calculation equation for variable "creat_ll"

Variable Name: *creat_ll*

Field Label: Creatinine - Lower Limit

Calculation: `(if([allo_site] = 1,0.5,"") and if([sex]= 'F',0.5,"")) or (if([allo_site]= 1,0.7, "") and if([sex]= 'M',0.7, "")) or (if([allo_site]=2, 0.57, ""))`

Fields Utilized in Calculation

Variable Name	Field Label	Form Name
<i>sex</i>	Sex of Participant	Allo Study Information
<i>allo_site</i>	IV Allopregnanolone Study Site	Allo Study Information

Calculation equation for variable "wbc_ll"

Variable Name: *wbc_ll*

Field Label: White Blood Cell (WBC) - Lower Limit

Calculation: `(if([allo_site] = 1,4,"3.4"))`

Fields Utilized in Calculation

Variable Name	Field Label
<i>allo_site</i>	IV Allopregnanolone Study Site

If/Then Conditional Logic Calculated Fields

Calculation equation for variable "ravlt_a1_agecor_ss"

Variable Name: *ravlt_a1_agecor_ss*

Field Label: List A Trial 1 Age-Corrected Standard Score

Calculation: `@CALCTEXT((if([ravlt_age_grp]= 1, (100 + (15 * ((([ravlt_a1_total]- 6.8)/1.6))), '') or (if([ravlt_age_grp]= 2, (100 + (15 * ((([ravlt_a1_total]- 7.0)/1.8))), '') or (if([ravlt_age_grp]= 3, (100 + (15 * ((([ravlt_a1_total]- 6.7)/1.8))), '') or (if([ravlt_age_grp]= 4, (100 + (15 * ((([ravlt_a1_total]- 6.6)/1.7))), '') or (if([ravlt_age_grp]= 5, (100 + (15 * ((([ravlt_a1_total]- 6.2)/1.6))), '')))`

Fields Utilized in Calculation

Variable Name	Field Label	Form Name
<i>ravlt_age_grp</i>	Age-Corrected Group	RAVLT
<i>ravlt_a1_total</i>	List A Trial 1 Raw Score	RAVLT

Current instrument: **RAVLT**

Preview

Variable: *ravlt_age_grp*

Age-Corrected Group

☐ 16-19

☐ 20-29

☐ 30-39

☐ 40-49

☐ 50-59

Variable: *ravlt_a1_total*

List A Trial 1 Raw Score

Variable: *ravlt_a1_uncor_ss*

List A Trial 1 Uncorrected Standard Score

View equation

Variable: *ravlt_a1_agecor_ss*

List A Trial 1 Age-Corrected Standard Score

View equation

@CALCTEXT

Data Quality Checks

Use for data verification to check for potential data entry errors

1	Participants below age 18 or greater than 55	(([interview_age]< 216.0) or ([interview_age] > 672.0))		<input type="button" value="Execute"/>
2	Height < 48 inches or > 94 inches	(([height_st]< 48) or ([height_st]> 94))		<input type="button" value="Execute"/>
3	Weight < 90 lbs or > 400 lbs	(([weight_lbs]<90) or ([weight_lbs] >400))		<input type="button" value="Execute"/>
4	Sitting Diastolic BP < 50 or > 120	(([vital_diabp_sit]< 50) or ([vital_diabp_sit] > 120))		<input type="button" value="Execute"/>
5	Sitting Systolic BP < 90 or >160	(([vital_sysbp_sit]<90) or ([vital_sysbp_sit]> 160))		<input type="button" value="Execute"/>
6	Sitting HR < 50 or > 120	(([heart_rate_sit]< 50) or ([heart_rate_sit] > 120))		<input type="button" value="Execute"/>
7	Standing Diastolic BP < 40 or > 120	(([vital_diabp_stand]< 40) or ([vital_diabp_stand]> 120))		<input type="button" value="Execute"/>
8	Standing Systolic BP < 80 or > 160	(([vital_sysbp_stand]< 80) or ([vital_sysbp_stand]> 160))		<input type="button" value="Execute"/>
9	Standing HR < 50 or > 130	(([heart_rate_stand]< 50) or ([heart_rate_stand]> 130))		<input type="button" value="Execute"/>
10	Respiration Rate < 8 or > 24	(([respct]< 8) or ([respct]> 24))		<input type="button" value="Execute"/>
11	Pulse Oximeter < 96%	[pulse_ox] <96		<input type="button" value="Execute"/>
12	Temperature < 95 or > 100 degrees F	(([temperature]<95) or ([temperature]> 100))		<input type="button" value="Execute"/>
13	# of Blasts/Explosions within 10 ft > 400	(([batl_s1b10]> 400) or ([batl_s7b10]> 400))		<input type="button" value="Execute"/>
14	# of Blasts/Explosions between 11 and 100 ft > 1000	(([batl_s1b100]>1000) or ([batl_s7b100]> 1000))		<input type="button" value="Execute"/>

FDA Part 11 Compliance

REDCap functions that Require Validation Testing for FDA Part 11 Compliance:

1. Calculated, Signature, Slider/Visual Analog Scale, & File Upload Field Types
2. Text Fields that include validation (date, number, integer, letters only, min, max, etc.)
3. Embedded fields
4. Action tags/field annotation (@CALCTEXT, @HIDDEN-SURVEY, etc.)
5. Branching logic

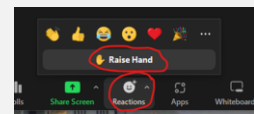
Thank you!

sarah.weber@bmc.org



PANEL DISCUSSION

- Use the chat function to ask questions
- Use the “raise hand” function to ask questions



- Sarah Brédy, BA – Research Assistant in GIM
- Sarah Weber, MPH – Project Management Specialist in ID
- Kayla Brown, MS, MS – Psychiatry

WRAP UP AND FINAL REMINDERS

- Today's session is being recorded.
- All recordings and slides of [previous seminars](#) are available on CRRO website.
- Evaluation survey will be emailed and is linked in the chat – this is valuable to information for how seminars are presented and what topics are covered.
- Always looking for presenters and speakers – please add suggestions on the evaluation!

Upcoming Events

10/25: RPN Workshop - Multitasking and Managing a Coordinator's Varied Role
11/2: Seminar – BMC SOP Implementation
11/TBD: RPN Workshop – Project Management
11/29: Fundamentals Sessions start weekly on Thursday
12/14: Seminar – Topic TBD
12/8: Principal Investigator Training
12/TBD: RPN Workshop – Topic TBD

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THANK YOU FOR ATTENDING