



THE UNIVERSITY OF  
TENNESSEE  
HEALTH SCIENCE CENTER.

# Advanced REDCap Training Session

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# Learning Objectives

- **Survey Dissemination**
- **Randomization Build**
- **Piping**

# Survey Dissemination

# Surveys in REDCap

- A survey is a version of a data form that is completed by a study participant without logging into the REDCap system
- REDCap offers two survey options: Public and Private

Type of Survey	Use
Public	Responses are anonymous
Private	Responses can be identified

# Public vs Private

Public	Private
Must be the first form	Doesn't need to be the first form
New record for each survey submission	New record before survey submission
One survey link for all participants	Survey links specified for each participants

# Survey Demo

# Randomization Build

# Randomization Build

- Create an instrument in your longitudinal project for “Randomization”
- Create a text box field for the date of randomization
- Insert necessary fields
  - Field label
  - Variable name
  - Validation
  - Action Tag/Field Annotation
    - Automate the date to the date of randomization
    - @TODAY, today’s date to be automatically inserted

**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 field, it will be added to 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:** Text Box (Short Text, Number, Date/Time, ...)

**Field Label**  Use the Rich Text Editor [?](#)

Date of Randomization

**Action Tags / Field Annotation (optional)**  
@TODAY @READONLY

Learn about [@ Action Tags](#) or [using Field Annotation](#)

**Variable Name** (utilized in logic, calcs, and exports)  
randomization\_date  Enable auto naming of variable based upon its Field Label?  
ONLY letters, numbers, and underscores

How to use [Smart variables](#) [Mapping](#)

**Validation?** (optional) Date (M-D-Y)

Minimum:   
Maximum:

- OR -  
-- select ontology service --

**Required?\***  No  Yes  
\* Prompt if field is blank

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

**Custom Alignment** Right / Vertical (RV)

Align the position of the field on the page

**Field Note (optional)**   
Small reminder text displayed underneath field



# Randomization Build

- Create a “Multiple Choice-Radio Button” field for the treatment arms
- Insert necessary fields
  - Field Label
  - Variable Name
  - Choices
    - For “Blinded” studies, use numeric values instead of text
      - Means having an allocation table where only the biostatistician is aware of the numeric/text value correlation

**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 field, it will be added to 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:

Field Label  Use the Rich Text Editor [?](#)  
Randomized Treatment Arm

Variable Name (utilized in logic, calcs, and exports)  
  Enable auto naming of variable based upon its Field Label?  
ONLY letters, numbers, and underscores

How to use [Smart Variables](#) [Piping](#)

Required?\*  No  Yes  
\* Prompt if field is blank

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

Custom Alignment   
Align the position of the field on the page

Field Note (optional)   
Small reminder text displayed underneath field

Choices (one choice per line) [Copy existing choices](#)  
1, Usual Care  
2, Intervention  
[How do I manually code the choices?](#)

Action Tags / Field Annotation (optional)  
  
Learn about [@ Action Tags](#) or [using Field Annotation](#)

**Save** **Cancel**

# Randomization Build

- On the project setup page, ensure that the randomization module is enabled
- Edit the REDCap users' right to include randomization setup privilege
- Next, project setting page select set up randomization

The screenshot displays the REDCap project setup interface. The top section, titled "Enable optional modules and customizations", lists several modules with "Enable" and "Disable" buttons. The "Randomization module" is highlighted with a red circle and has a green checkmark, indicating it is enabled. Below this, the "Set up a randomization model" section contains a "Go to Set up randomization" button, also circled in red. The bottom section, "Other privileges:", lists various system functions with checkboxes. The "Randomization" section is circled in red, showing "Setup" and "Randomize" checked, and "Dashboard" unchecked. The REDCap logo is visible in the bottom right corner.

**Enable optional modules and customizations**

Optional

Repeatable instruments and events [?](#)

Auto-numbering for records [?](#)

Scheduling module (longitudinal only) [?](#)

Randomization module [?](#)

Designate an email field for sending survey invitations [?](#)

Settings displayed to Administrators only:

Twilio SMS and Voice Call services for surveys [?](#)

**Set up a randomization model**

The randomization module will help you implement a defined randomization model within your project, allowing you to randomize your subjects (i.e. records in your project).

Go to

Setup

Dashboard

Randomize

Create & edit rules

Execute rules

API Export

API Import/Update

**REDCap**  
Research Electronic Data Capture

# Randomization Build

- You will be redirected to the Randomization Setup page
- **Step 1**, make the appropriate selections based on discussion with your PM/PI for stratified randomization or randomization by group/site
- Select the dropdown on the left for “Choose Your Randomization Field”
- Select the “Field Name” designated in your randomization instrument, in the field for treatment arm designation
- Select the dropdown menu on the right under “Choose Your Randomization Field”
- Select the appropriate event where randomization instrument is categorized
- Select “Save Randomization Model”

**Randomization**

Randomization is a process that assigns participants/subjects by chance (rather than by choice) into specific groups, typically for clinical research and clinical trials. The randomization module in REDCap will help you implement a defined randomization model within your project, allowing you to randomize your subjects (i.e. records in your project). In this module, you first define the randomization model with various parameters. Based on the defined parameters, the module creates a template allocation table, which you can use to structure the randomization table you will import. The module also monitors the overall allocation progress and assignment of randomized subjects. Note: It is recommended that only people with experience in randomization set up the Randomization module. [More details](#)

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 (multiple choice 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 Enrollment

- select a field -

ethnicity (Ethnicity)

race (Race)

sex (Gender)

given\_birth (Has the patient given birth before?)...

diagnosis\_unit\_phone (Confirmed?)

subject\_comments (Confirmed?)

randomized\_treatment\_arm (Randomized Treatment Arm)

pmq1 (On average, how many pills did you take each day last week?)...

pmq2 (Using the handout, which level of dependence do you feel you are currently at?)...

pmq3 (Would you be willing to discuss your experiences with a psychiatrist?)...

pmq4 (How open are you to further testing?)...

vbw6 (Blood draw shift?)

vbw7 (Blood draw by)

vbw8 (Level of patient anxiety)

vbw9 (Patient scheduled for future draws?)

vob1 (nervous?)

# Randomization Build

- **Step 2** allows you to download a sample allocation table

This should be used only for practice/testing

- Your project biostatistician should provide you with an official allocation table
- **Step 3**, click “Choose File” to locate an official or practice allocation table

A project should NOT be moved into production with a practice allocation table in place

- Once the appropriate file is selected, click “Upload File”
- Once your file is successfully uploaded, you will see a green checkmark appear
- You may delete your allocation table by selecting “Delete Allocation Table?”
- You may download and view your allocation table by selecting “Download Table”
- To start the process over, select “Erase Randomization Model” in Step 1

## STEP 2: Download template allocation tables (as Excel/CSV files)

Below are some example files that you may download to get a general idea for how you may structure your own randomization table. You do not have to use any of these. In fact, **we recommend that you NOT use these exact templates** but instead recommend that you merely use them as an example or baseline to start from in order to create your own custom allocation file. After uploading your allocation table in Step 3 below, it will then be used as a lookup table to perform assignments when subjects are being randomized. **NOTE:** Record names (e.g., study ID) should NOT be included as a column in your allocation table, but only the fields listed in the example files below. [More details](#)

Example #1 (basic)

Example #2 (all possible combos)


Example #3 (5x all possible combos)

## STEP 3: Upload your allocation table (CSV file)


Once you have created your custom allocation table as a CSV file and made sure that you kept the format prescribed in the template files from Step 2 above, you may now upload the file below. It will be checked for any possible errors first before it is accepted and stored in REDCap. Please note that you will need to create two different allocation tables: one to be used for testing while your project is in development status and the other for use when in production status. Below are some important reminders before you begin uploading your allocation tables.

### Reminders:

- Once your project is in production status, the allocation tables will become locked and unmodifiable.
- Be sure to include more assignments in your allocation table than you think you will need (to accommodate possible drop-out and drop-in of subjects).
- Record names (e.g., study ID) should NOT be included as a column in your allocation table, but only the fields listed in the example files from Step 2 above.

 **Upload allocation table (CSV file) for use in DEVELOPMENT status**  
[Delete allocation table?](#)

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 **Upload allocation table (CSV file) for use in PRODUCTION status**  
 No file chosen



# Randomization Build

- Add a record to test your randomization instrument
- You will now see a “Randomize” button on the form
- Click “Randomize”
- A pop-up box will appear, to proceed with randomization, click “Randomize”
- An additional pop-up box will appear indicating successful randomization and displaying the assigned treatment arm for that participant

When moving your project into production, all test randomizations will be erased

The image shows a sequence of three screenshots from a web application. The top screenshot is the 'Randomization Instrument' form for 'Adding new Study ID 1'. It includes fields for 'Event Name: Enrollment', 'Study ID' (value: 1), 'Date of Randomization' (value: 11-10-2017), and 'Randomized Treatment Arm'. A red circle highlights the 'Randomize' button. Below these fields are 'Form Status' (Incomplete), a 'Lock this record for this form?' section, and 'Save & Exit Form' and 'Save & ...' buttons. The middle screenshot is a pop-up window titled 'Randomizing Study ID "1"'. It contains a 'REMINDER' box stating the project is in development and not for real subjects. At the bottom, a red circle highlights the 'Randomize' button. The bottom screenshot is another pop-up window titled 'Randomizing Study ID "1"'. It features a green checkmark icon and a message: 'Study ID "1" was randomized for the field "Randomized Treatment Arm" and assigned the value "Intervention" (2)'. A 'Close' button is at the bottom right.

# Piping

# Piping

- Piping is a feature in REDCap that allows you to place previously collected data into fields in other forms or surveys
- Piping does not need to be enabled as a “**project setting**”
- Information can be piped in a few different ways:
  - **Across events** by inserting the original event name in front of the piped variable
    - Ex. [Baseline\_data][first\_name]
  - Create customizability in **survey invitations** and survey completion text
    - Ex. “Thank you, [first\_name] for completing the survey.”

# Where can piping be used?

- Field Label
- Field Note
- Section Headers
- Alerts & Notifications
- Option labels for multiple choice fields
- Survey Instructions
- Survey Completion Text
- Survey invitation emails
- Custom text displayed at top of Survey Queue
- Inside the URL for a survey's 'Redirect to a URL' setting

You can pipe *from* all fields EXCEPT checkboxes

Multiple answers cannot be piped at one time



# Piping

- To pipe within the **same event, between forms, or within the same form**, put the variable name in brackets in the desired field
  - Ex. [first\_name]
- To pipe data **between events**, ensure the event name you are piping from precedes the variable name in the desired field
  - Ex. [enrollement\_arm\_1][first\_name]

**Add New Field**

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will be added to 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: Descriptive Text (with optional Image/Video/)

Field Label  Use the Rich Text Editor [?](#)

Hello [enrollment\_arm\_1][first\_name]

Action Tags / Field Annotation (optional)

Learn about [@ Action Tags](#) or [using Field Annotation](#)

Variable Name (utilized in logic, calcs, and exports)

first\_name\_morale\_quest  Enable auto naming of variable based upon its Field Label?  
ONLY letters, numbers, and underscores

How to use [Smart Variables](#) [Piping](#)

Optional file attachment, image, audio, or video:

**Embed an external video** (provide video URL) [?](#)

e.g. <https://youtube.com/watch?v=E1cCuWMupz0>,  
<https://vimeo.com/62730281>,  
<http://example.com/movie.mp4>

Display format of video:  Inline  Inside popup

- or -

**Attach an image, file, or embedded audio**

[Upload document](#)

Display format of attachment on page:

Link  
 Inline image  
 Audio file (play in embedded player on page)  
[Compatibility notice for embedded audio](#)

(Images wider than 600 pixels will be downsized to fit page.)

Save Cancel

Add Field Add Matrix of Fields

Variable: pmq4

How open are you to further testing?

Add Field Add Matrix of Fields

Variable: thank\_you\_morale\_quest

Thank you for your answers [enrollment\_arm\_1][first\_name]

Add Field Add Matrix of Fields

# Questions / Comments

