REDCap

Research Electronic Data Capture

# IHR REDCAP ADVANCED TRAINING

# TOPICS COVERED

- Piping
- Branching Logic
- Survey Dissemination
- Calculated Fields
- Randomization Build
- Advanced Reports
- REDCap Extensions, Plug-ins, Hooks (Auto-notify)
- Newly-Added Advanced Features

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# 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:
  1. Across events by inserting the original event name in front of the piped variable
     - Ex. [Baseline_data][first_name]
  2. Create customizability in survey invitations and survey completion text
     - Ex. "Thank you, [first_name] for completing the survey."
  3. Values may be piped, but not the field labels
     - Descriptive text may be piped as a whole, but not selections of the text

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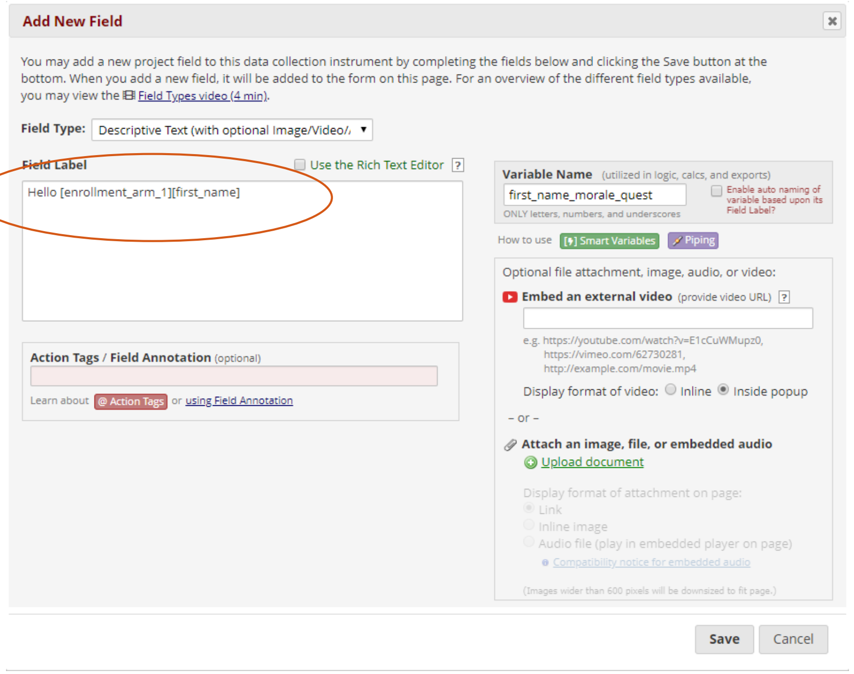
# WHERE CAN PIPING BE USED?

- Field Label
- Field Note
- Section Headers including matrices
- Alerts & Notifications
- Option labels for multiple choice fields
- Slider field labels
- Custom record locking text
- 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 (CONT.)

1. To pipe data within the **same event**, **between forms**, or **within the same form**, put the variable name in brackets in the desired field
   - Ex. [first_name]
2. To pipe data **between events**, ensure the event name you are piping *from* precedes the variable name in the desired field
   - Ex. [enrollment_arm_1][first_name]




# Branching Logic

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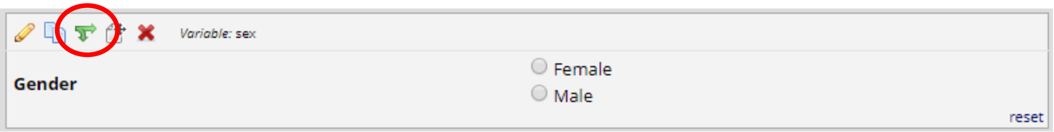
# BRANCHING LOGIC

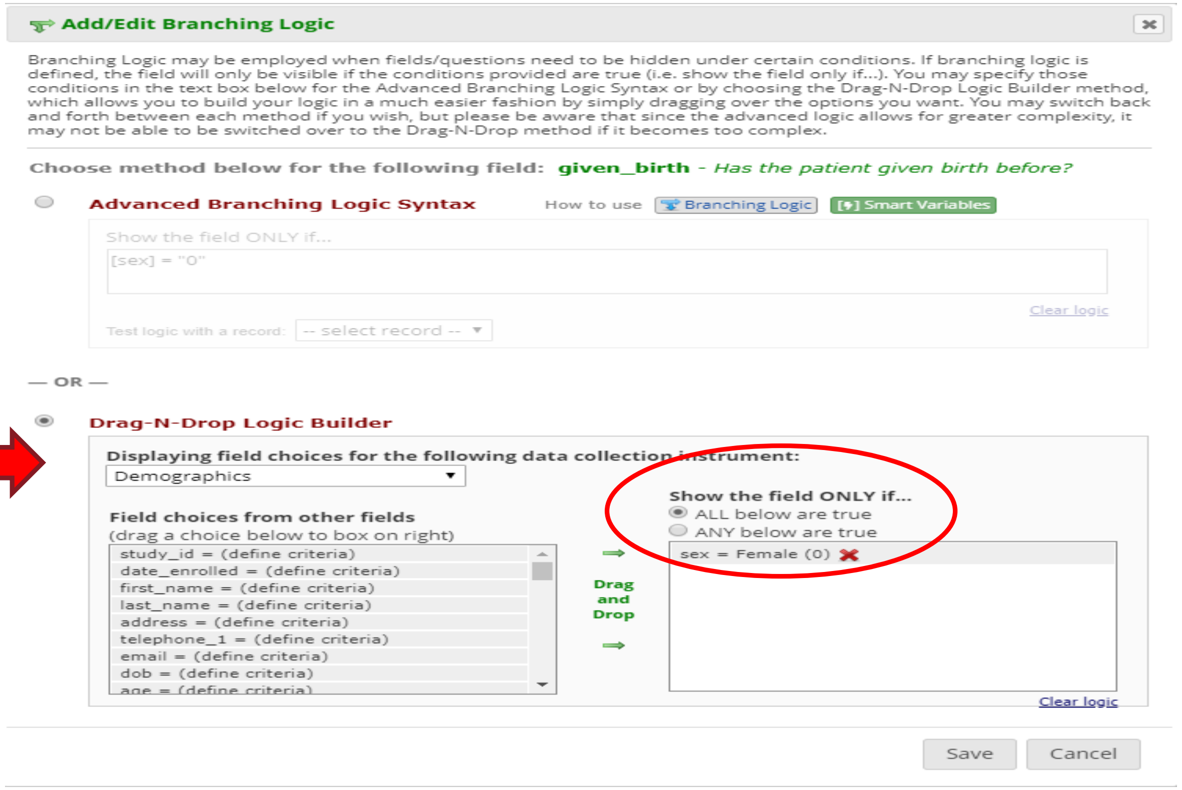
- May be used within different events/forms for longitudinal projects or single forms/surveys for classic projects
- Allows questions or fields to be hidden until certain choices are selected
- Branching must be applied to each field, it cannot be applied at the form/section level
  - E.g. You cannot branch an entire form or section, each field must have designated branching logic in place
- Branching logic can be set up using **online designer** or **data dictionary**
- Section headers will be hidden only if all fields in that section are hidden
- It is possible to branch or hide sections of a form or survey but not entire forms or surveys
  - E.g., You can hide an entire form or survey utilizing the survey queue

# BRANCHING LOGIC (CONT.)- SIMPLE LOGIC

**Set up Simple Branching Logic in Online Designer:**

1. To begin, click on the green arrow at the top of the field
2. Using the Drag-N-Drop Logic Builder, simply drag the appropriate values to the “Show Field Only If” box
3. You may branch using conditional logic of “All Below Are True” or “Any Below Are True”
4. You may select branching options from any instrument in your project using the “Displaying Field Choices…” dropdown menu

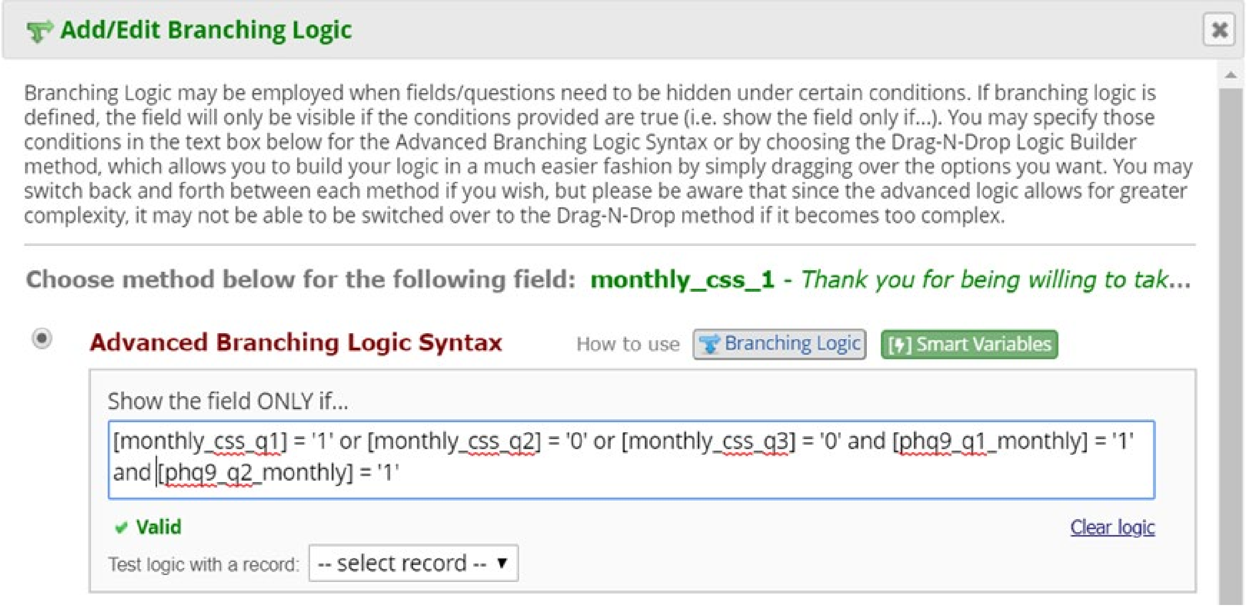


# BRANCHING LOGIC (CONT.)- ADVANCED LOGIC

**Set up Advanced Branching Logic in Online Designer:**

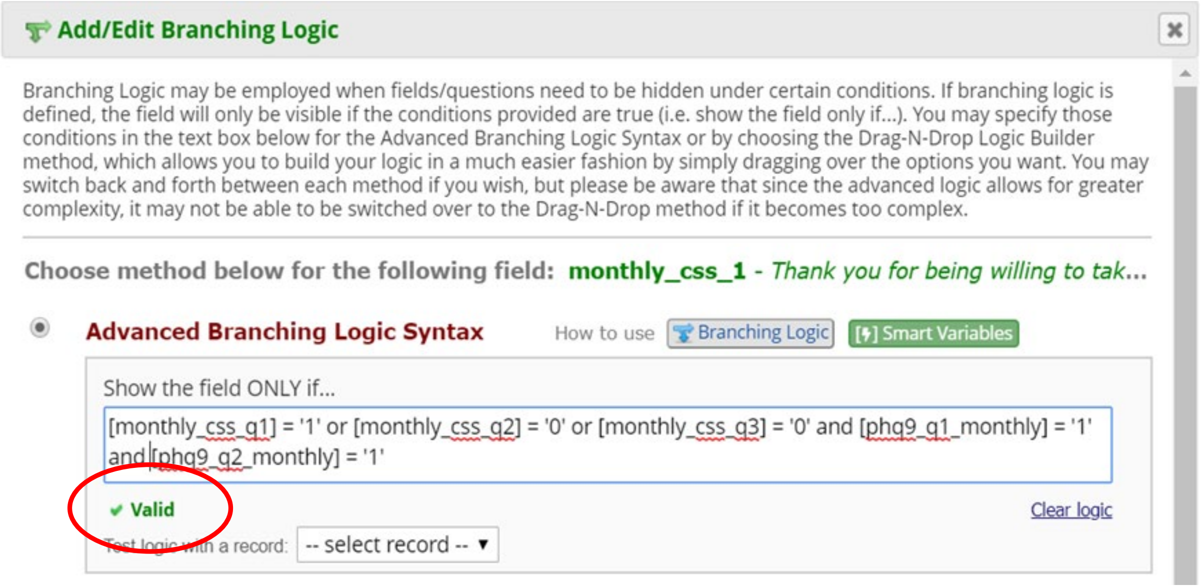
1. Should be used when your conditions fall outside of only “All” or “Any”
2. Variable options may be selected using the “Drag-N-Drop” builder, but then must be converted to advanced logic
    1. Once converted to advanced logic and additional conditions added, cannot be converted back to simple without rebuilding in DND builder
3. Click “Advanced Branching Logic Syntax” to move your simple logic to the advanced logic box



# BRANCHING LOGIC (CONT.)- ADVANCED LOGIC

**Set up Advanced Branching Logic in Online Designer cont'd:**

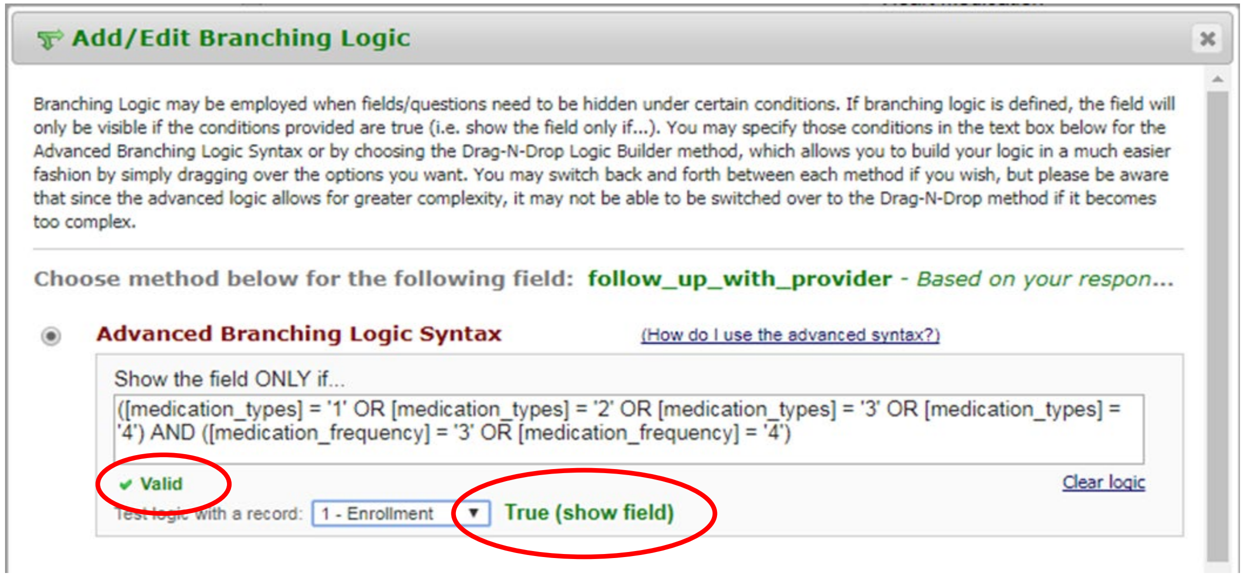
1. Conditional logic variables (AND/OR) and groupings must be manually entered:
   - You can use BOTH "AND/OR" conditions within the same logic
   - Example below: If medication types 1 OR 2 OR 3 OR 4 are being used AND the frequency is 3 OR 4
     - Make sure to use parenthesis to group options together ([x] OR  [x] OR  [x]) AND ([x] OR [x])




2. If the logic is valid, a green checkmark will appear in the lower left corner

# BRANCHING LOGIC (CONT.)- BEST PRACTICES

- To ensure variable names are entered correctly, begin with the “Drag-N-Drop Logic Builder”, then, if needed, change to advanced logic
- Make sure you see the green check mark to ensure your branching logic is valid
- Test your logic by selecting a record as shown in the example to the right

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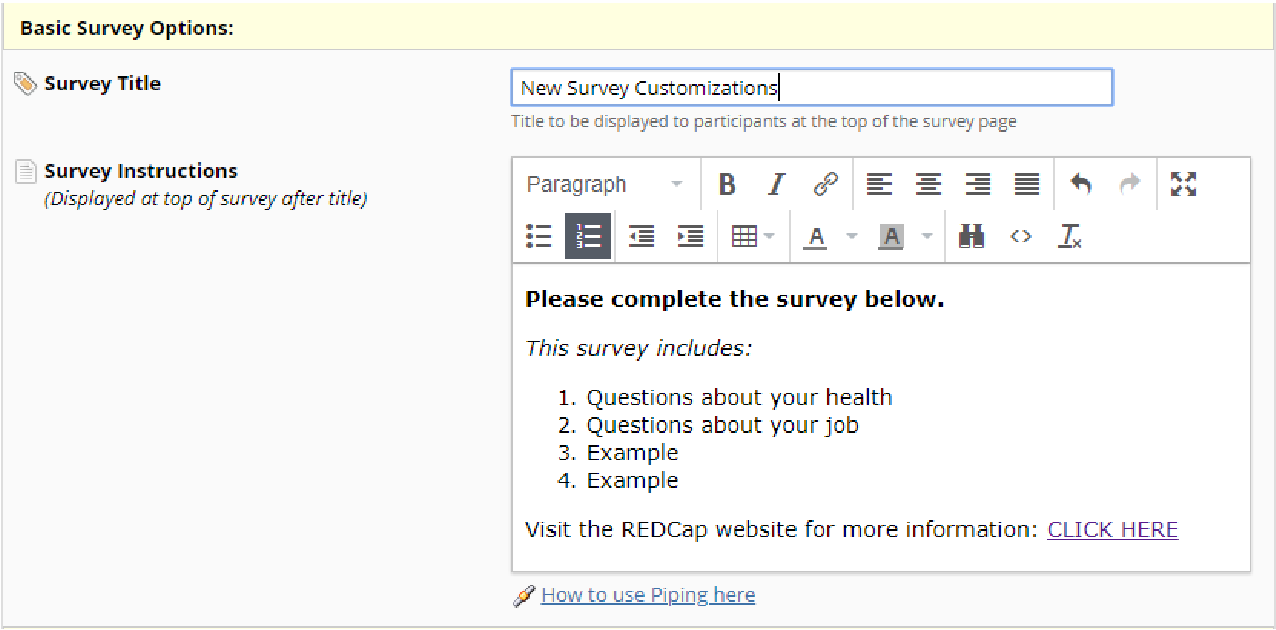
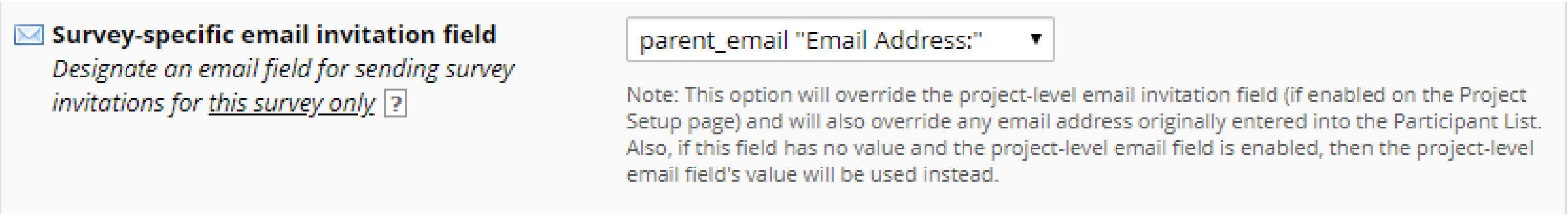
# Survey Settings

# NEW SURVEY CUSTOMIZATIONS

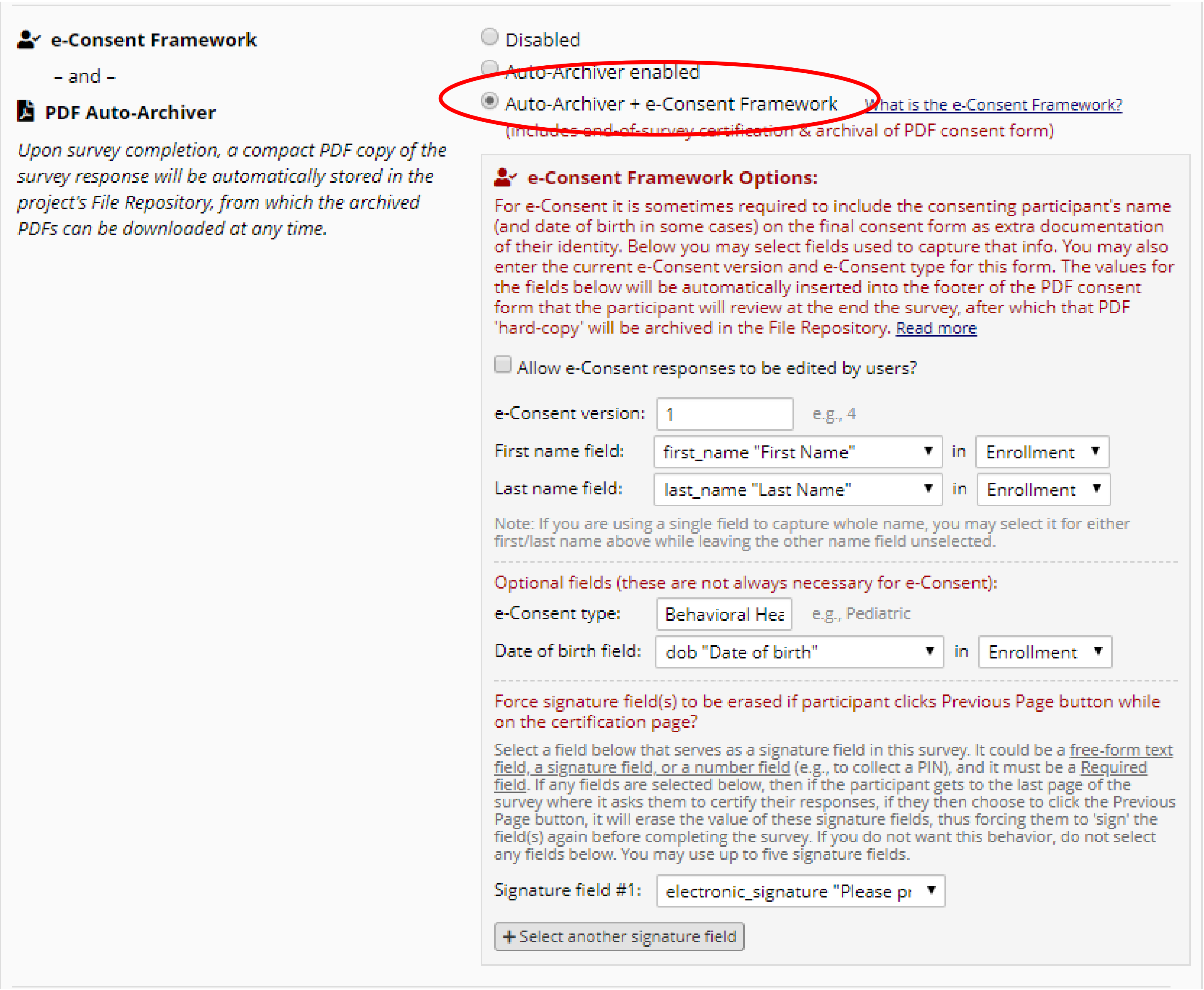
- Rich Text Editor
  - Forego HTML coding
  - Hyperlink
  - Formatting
    - Also available within forms/surveys in adding fields
- Survey-Specific Emails
  - Individual addresses for individual surveys
  - Previously only allowed for 1 – project settings



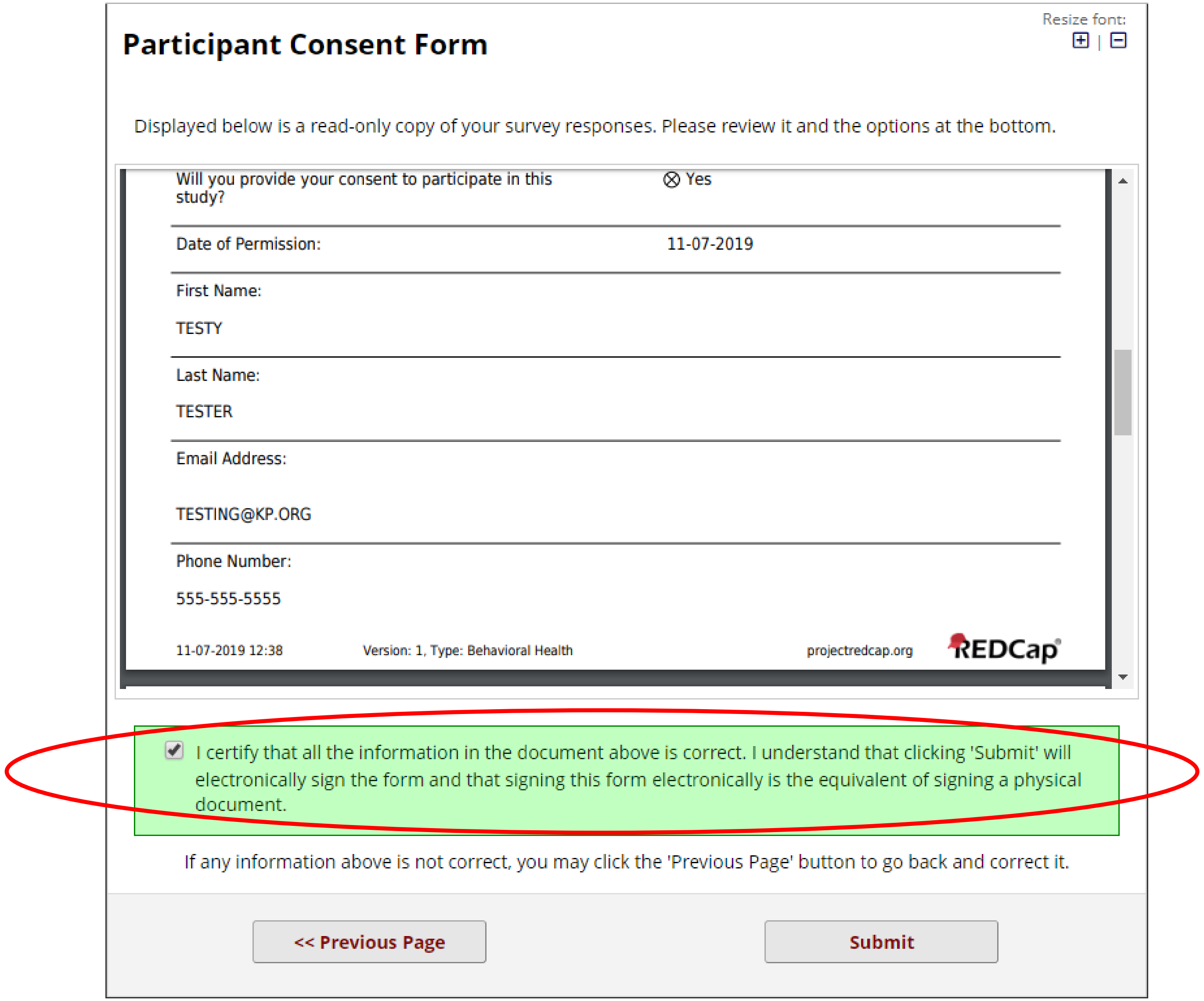
# E-CONSENT FRAMEWORK

- In conjunction with Auto-Archiver only
- Patient confirmation of information accuracy
- Provides general framework only
  - Consent must be built in
  - Necessary fields must be built in
  - Signature process must be built in (wet or typed)
- Allows for consent versioning log



# E-CONSENT FRAMEWORK CONT.

- Participant Review
- Participant Certification
- Cannot submit w/o certification
- Allows for correction of data
- Locks/secures consents


**Participant Consent Form**

Resize font:

Displayed below is a read-only copy of your survey responses. Please review it and the options at the bottom.

| | |
|---|---|
| Will you provide your consent to participate in this study? | ⊗ Yes |
| Date of Permission: | 11-07-2019 |

First Name:

TESTY

Last Name:

TESTER

Email Address:

TESTING@KP.ORG

Phone Number:

555-555-5555

11-07-2019 12:38 Version: 1, Type: Behavioral Health projectredcap.org REDCap

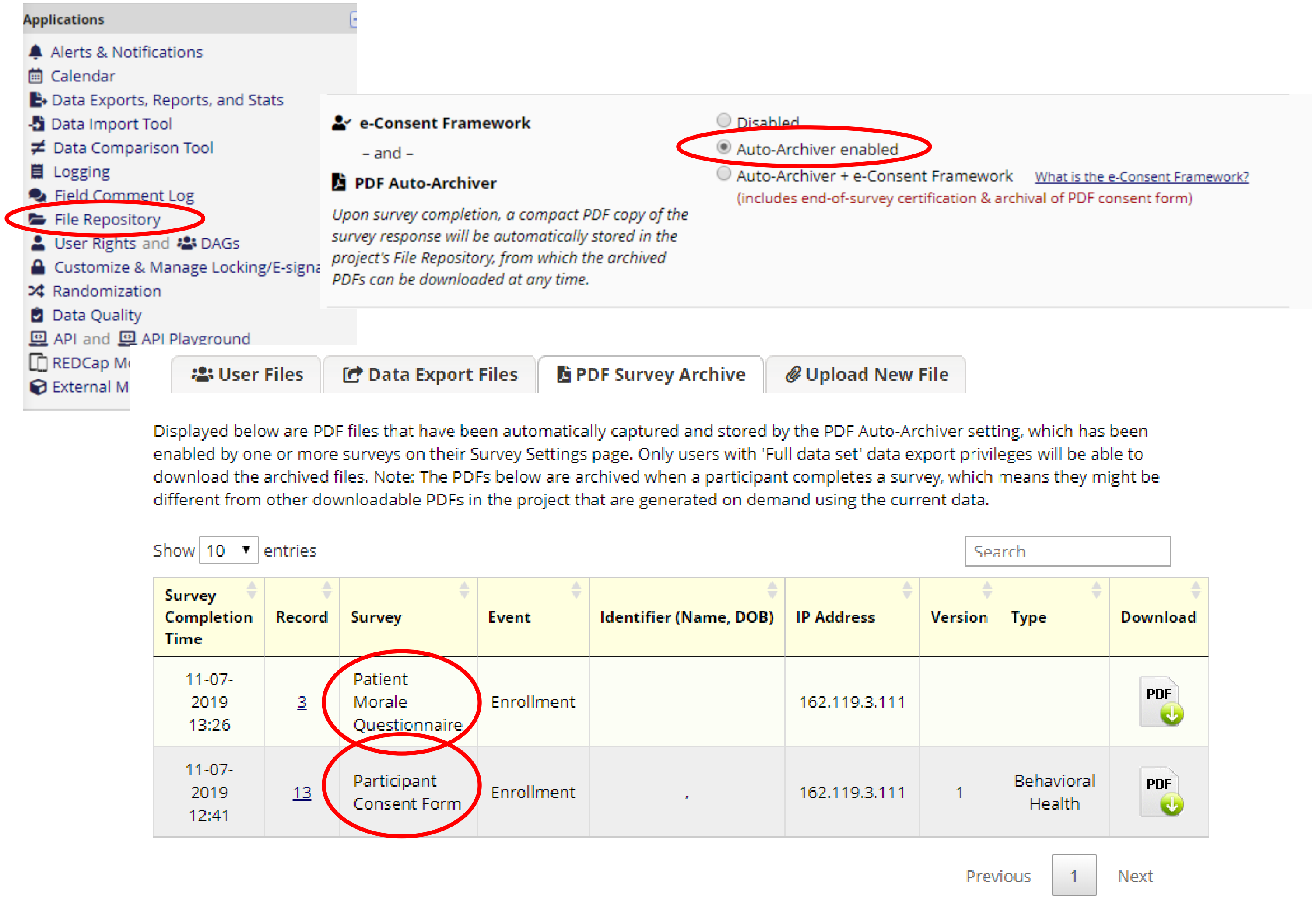
☑ I certify that all the information in the document above is correct. I understand that clicking 'Submit' will electronically sign the form and that signing this form electronically is the equivalent of signing a physical document.

If any information above is not correct, you may click the 'Previous Page' button to go back and correct it.

<< Previous Page Submit

# AUTO-ARCHIVER – PDF SURVEY ARCHIVE

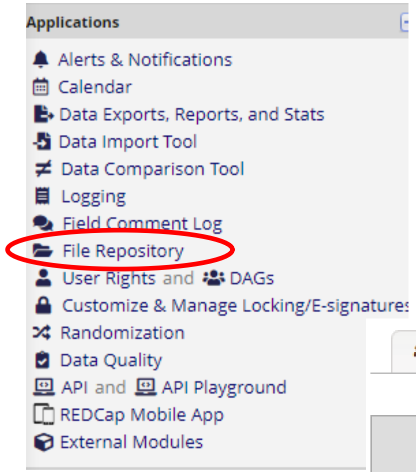
- File Repository
- PDF Survey Archive
- Download includes data/signature
- Can be used outside of consenting
  - Survey storage

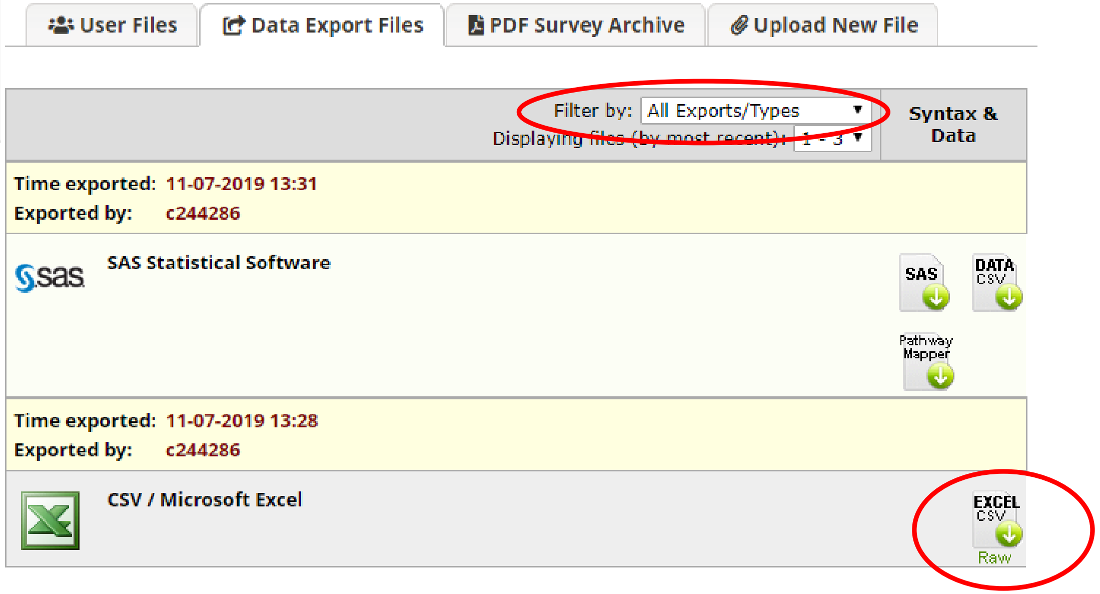


# Updated Applications

# FILE REPOSITORY – DATA EXPORT FILES

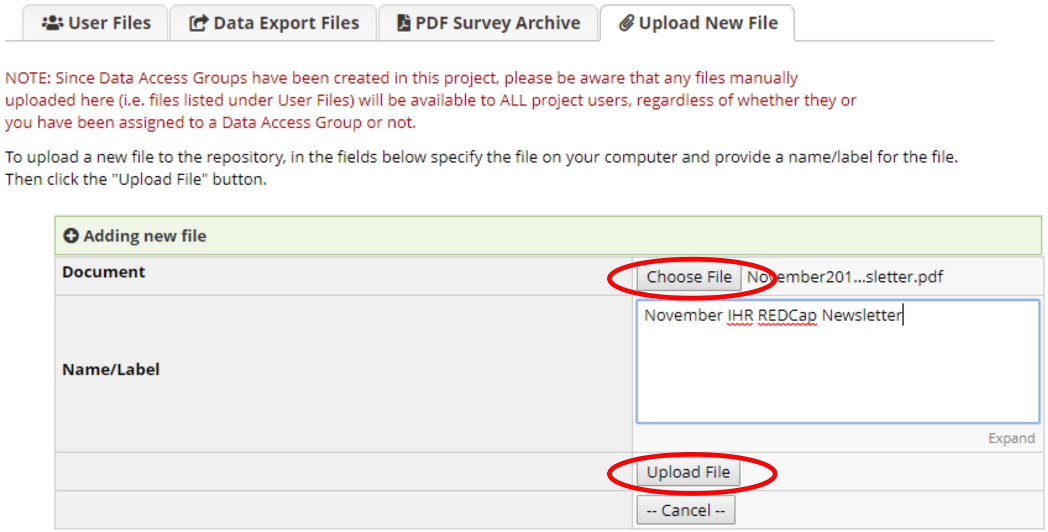
- Data Export Files
  - Keeps a log and CSV of all data exports for the project
  - Time/Date/User
  - Filtration Options

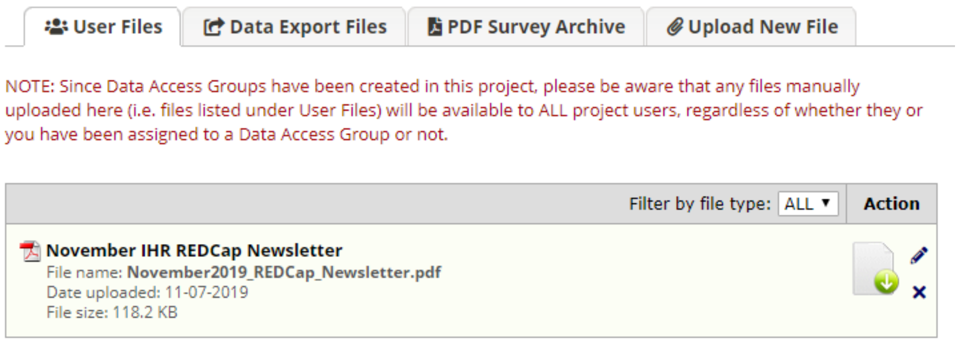


# FILE REPOSITORY – UPLOADING USER FILES

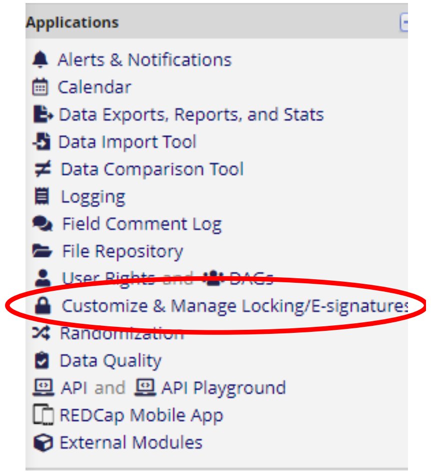
- Manual File Upload
- Storage in “User Files”
  - Excellent for paper-based survey/consent/form storage
- Custom File Naming
- Downloadable
- Filtration Options

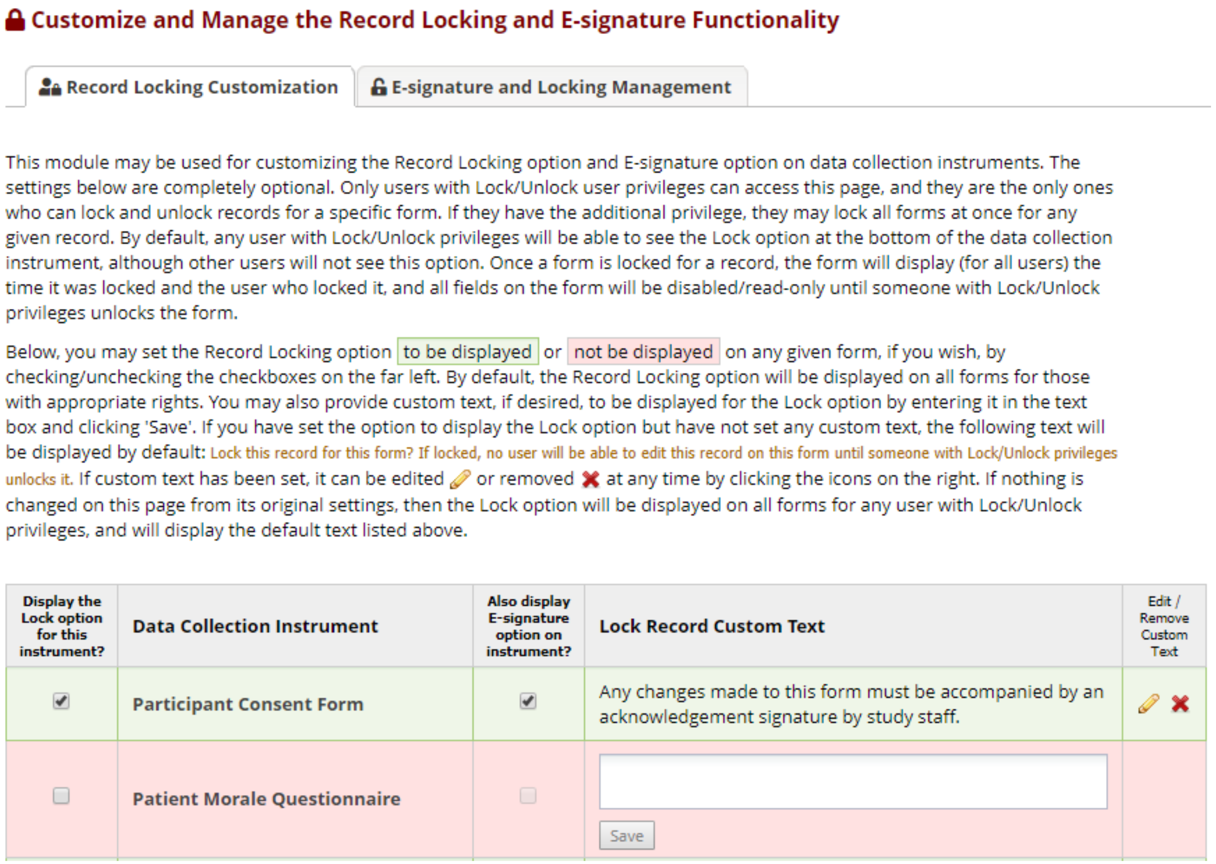


# CUSTOMIZE & MANAGE LOCKING/E-SIGNATURES

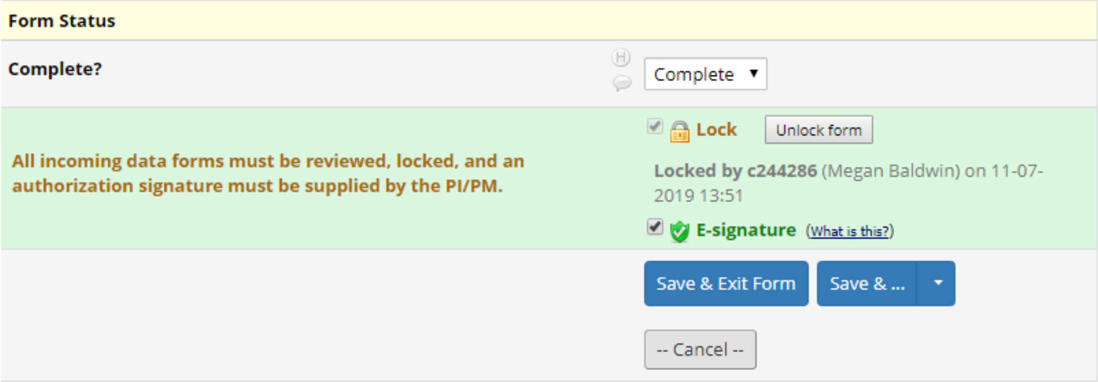
- User-right specific
- Secure forms
  - Consents
  - PHI
- E-Signature to confirm form
  - Verify Data Completion
  - Verify Data Content
  - Denotes that data has been locked & authorized

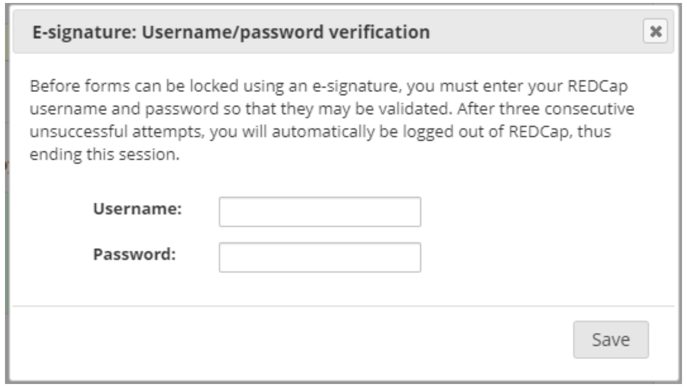


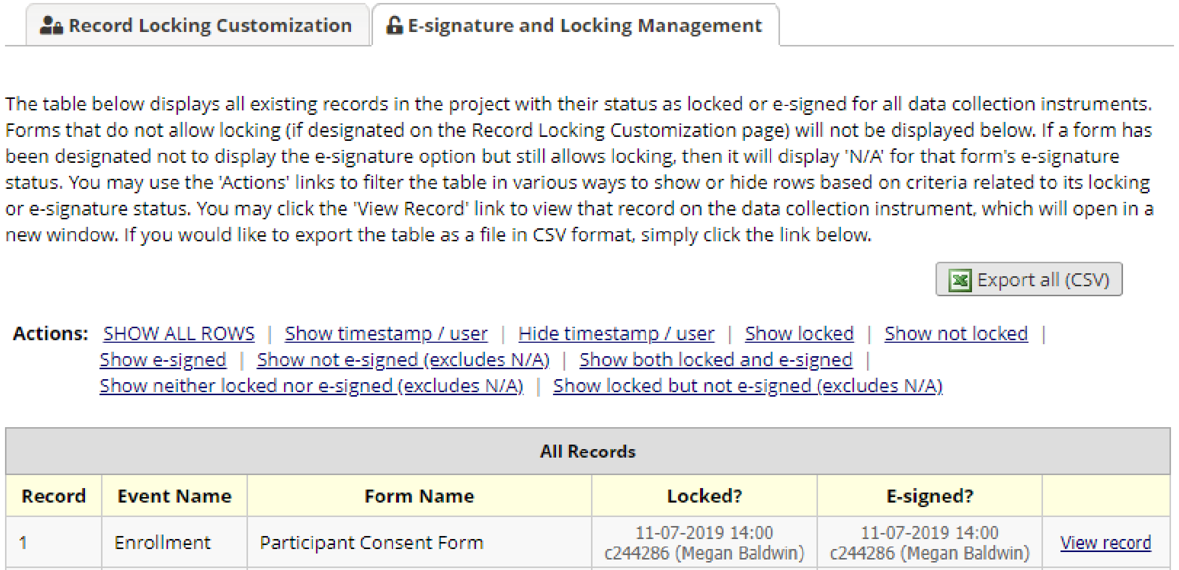



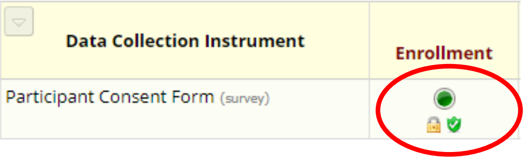
# CUSTOMIZE & MANAGE LOCKING/E-SIGNATURES CONT.

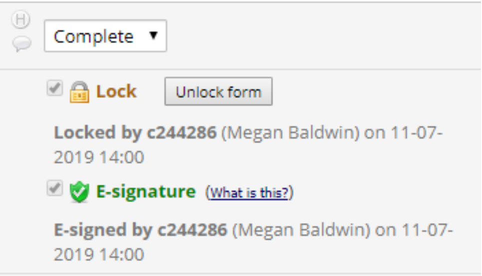
- Can only be unlocked by those with rights
- Username/password required as “signature’
- Will show in record by instrument
- Tracked in logging & E-Signature and Locking Management Tab



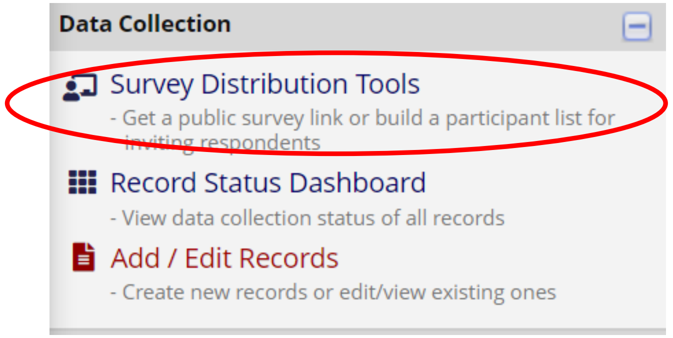



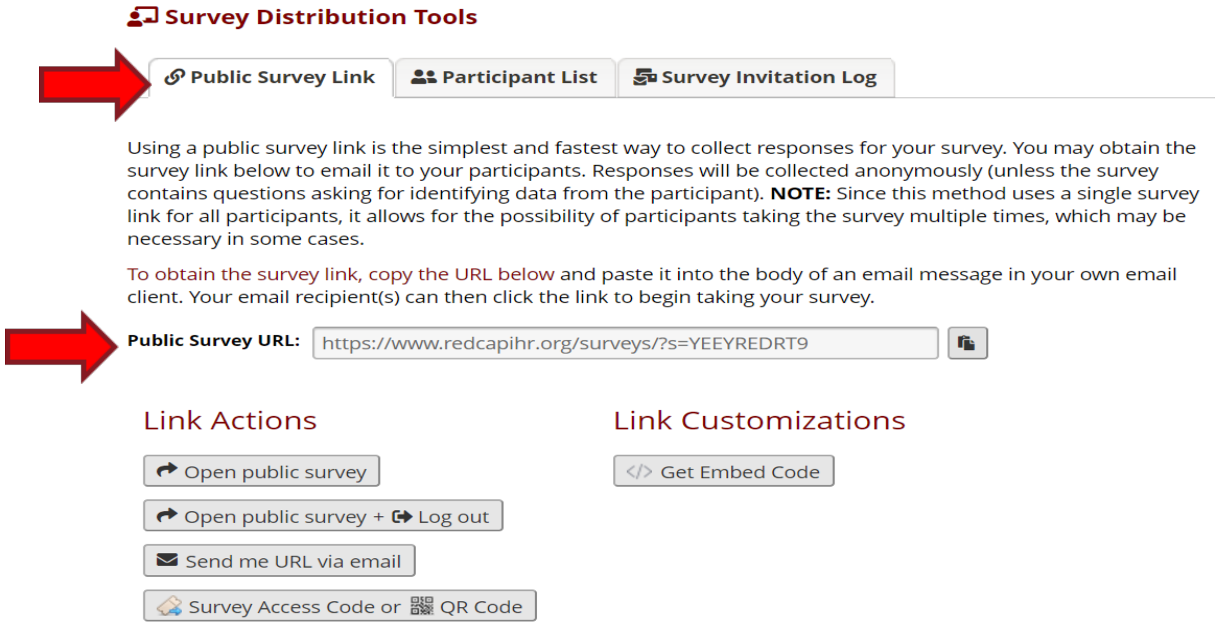



# Survey Dissemination

# PUBLIC SURVEY LINKS

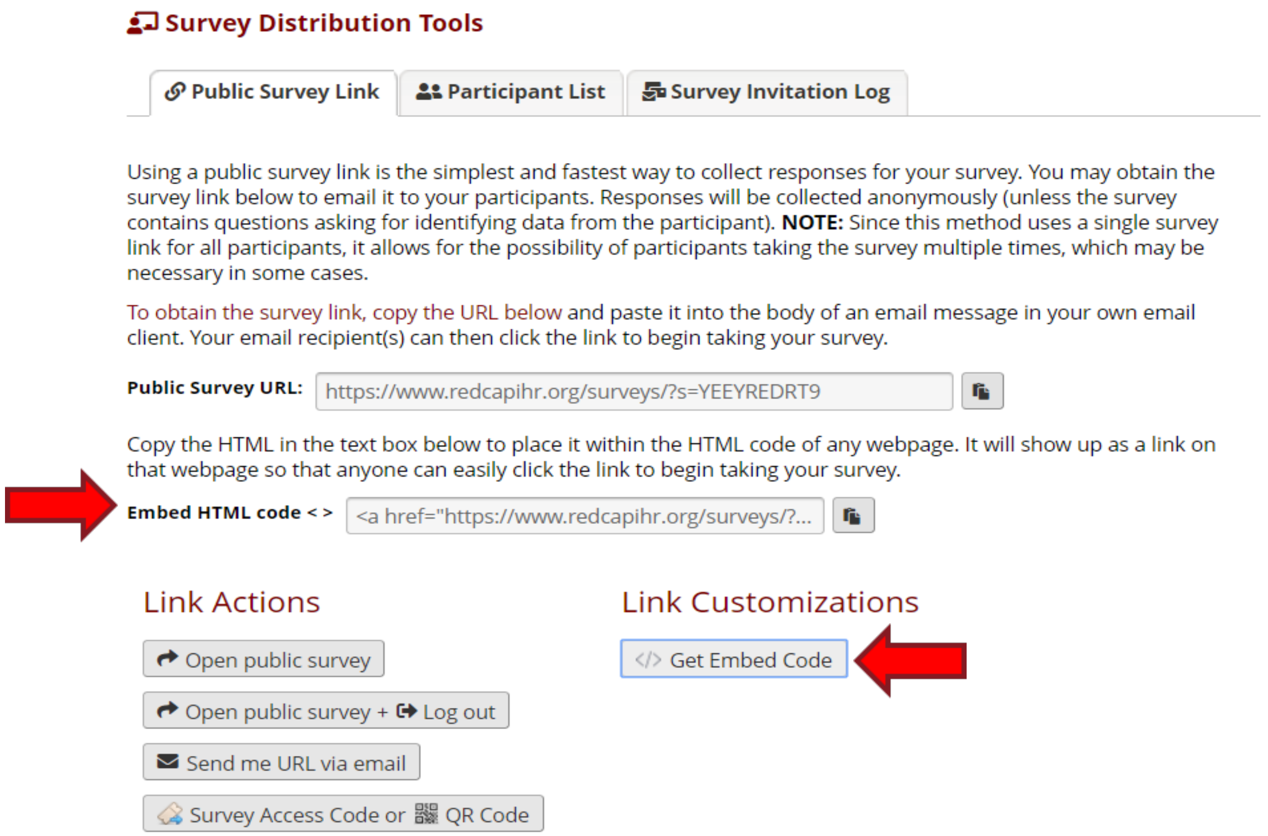
1. To collect data anonymously:
   - Click on ‘Survey Distribution Tools’ on the left hand menu under ‘Data Collection’
   - Use the ‘Public Survey Link’ to collect anonymous survey data.
     - Must be first instrument in first event to utilize public link
2. From this page you can:
   - Open the public survey link
   - Send yourself an email with the public link
   - Access the survey access code or QR code
   - Get an embed code



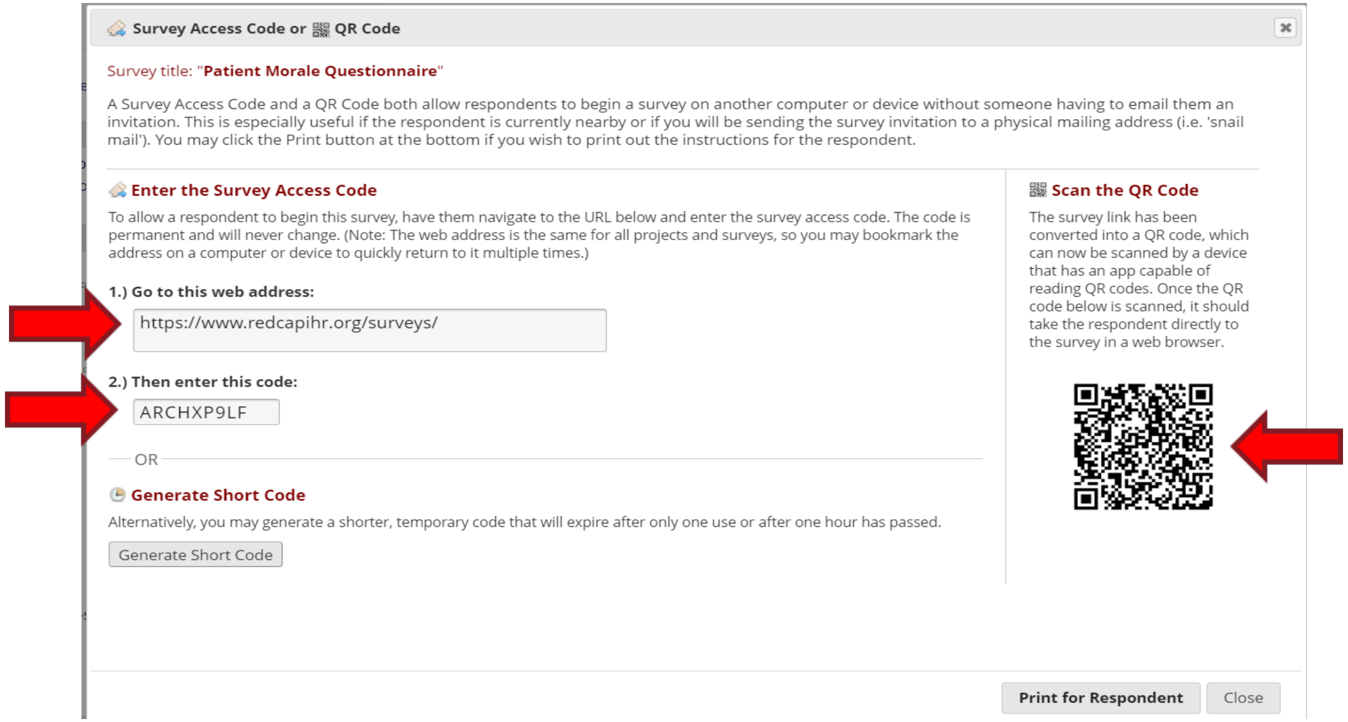
# PUBLIC SURVEY LINKS (CONT.)

1. You can also obtain an embed HTML code for your survey public link
   - The HTML in the text box can be placed within the HTML code of any webpage.
   - It will show up as a link on that webpage so that anyone can click the link to take the survey.



# SURVEY ACCESS CODES

1. You may choose to use a Survey Access Code or QR Code
   - The Survey Access Code provides a simpler URL and an access code that can be used to access the survey
   - QR code can be scanned easily by mobile devices
   - A short code can also be generated
     - Can provide these prior to survey being sent or as needed

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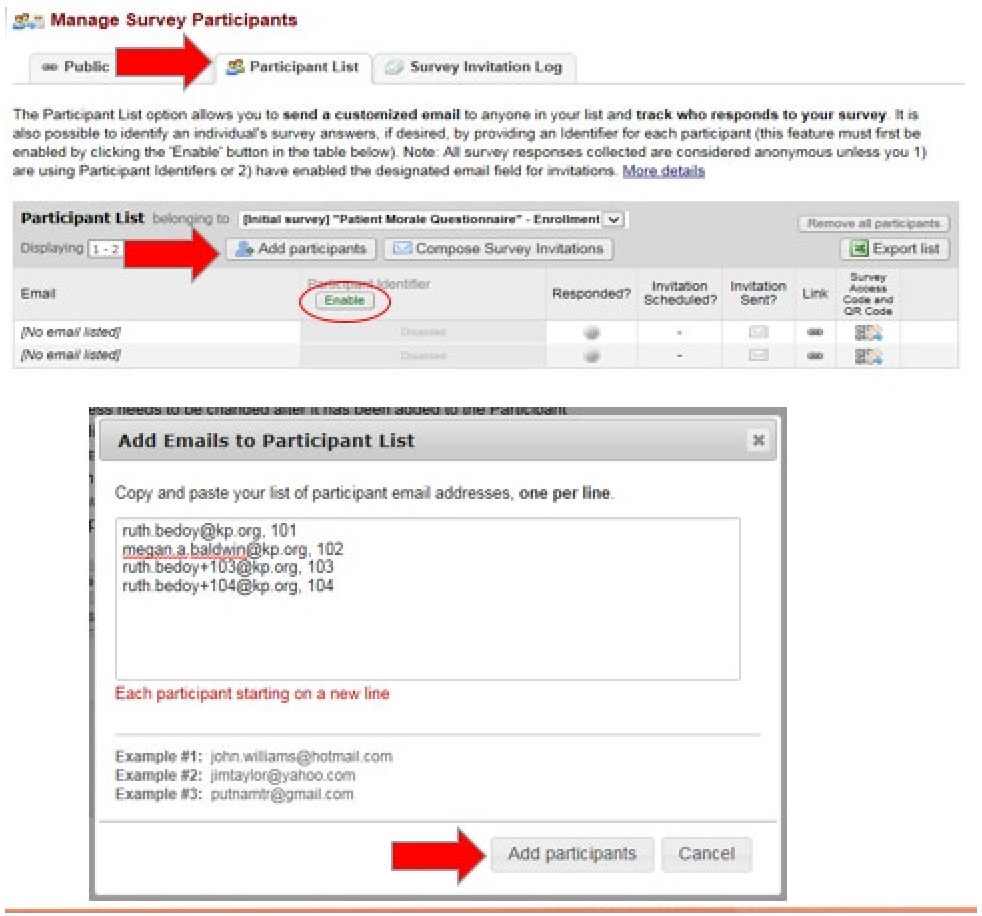
# SURVEY PARTICIPANT LIST

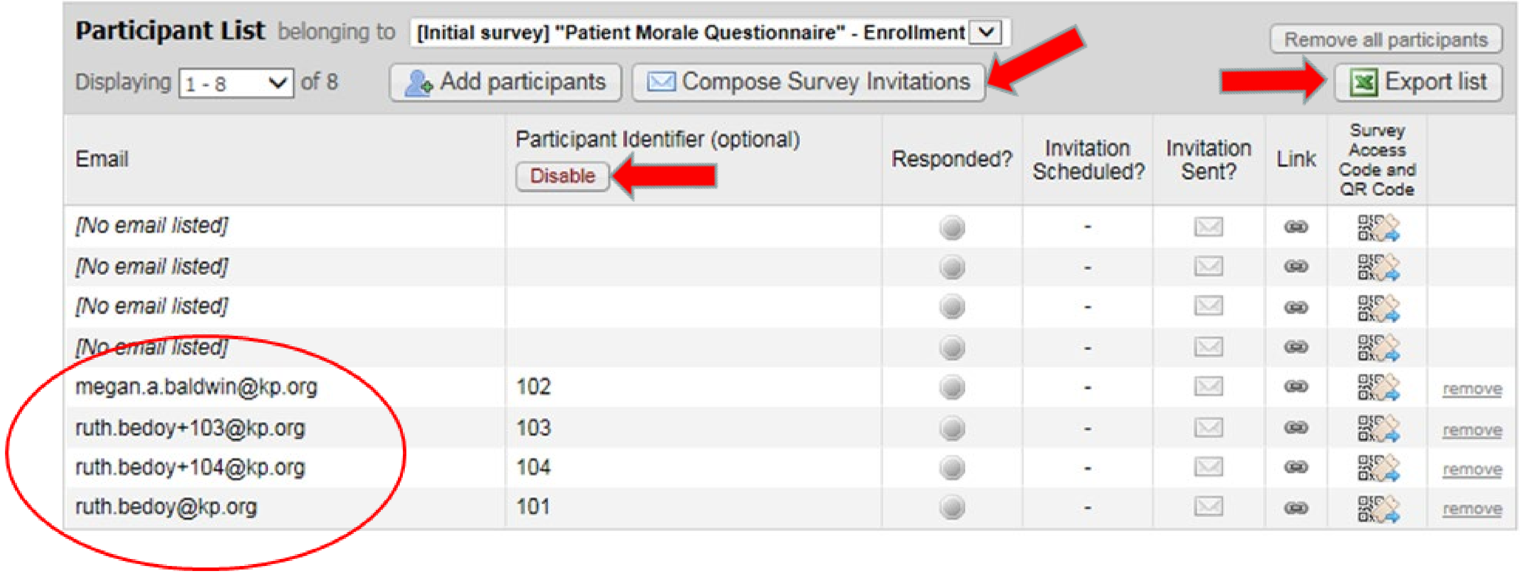
**'Participant List' allows you to send customized emails and track who responds to surveys by sending unique links to each participant:**

1. Click "Add participants" to add your participants
2. You can add identifiers for each participant by enabling the 'Participant Identifier' column
3. After you click on "Add participants", enter your participant emails and identifiers in the pop-up box
4. Then click "Add participants" at the bottom of the pop-up box
   - This is a manual process – cannot use with automated email list



# SURVEY PARTICIPANT LIST (CONT.)

1. Your participants will then appear in your "Participant List"
   - The identifiers will be listed in the "Participant Identifier" column
2. You can compose survey invitations from this page by clicking on "Compose Survey Invitations"
3. Unique survey links can also be exported by clicking on the "Export list" button if your study or project require study surveys to be sent from a different platform
   - E.g., IVR, Verification website, Outlook

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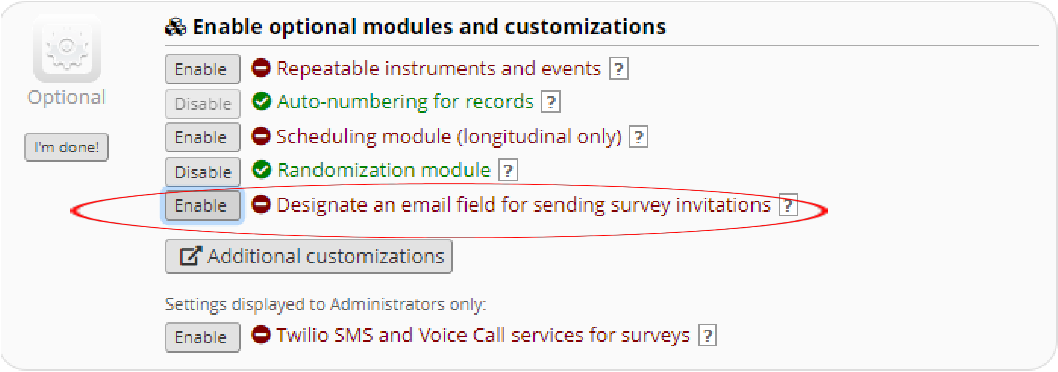
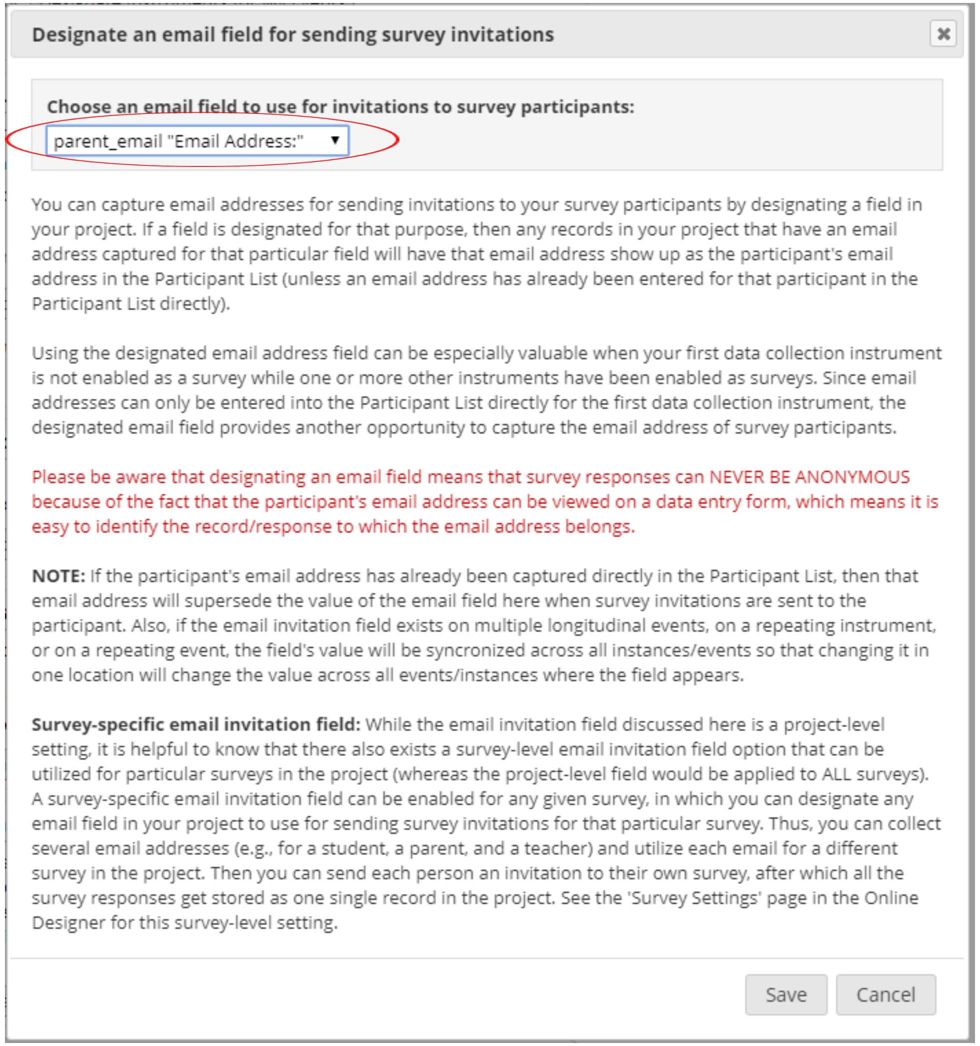
# SURVEY PARTICIPANT LIST (CONT.)

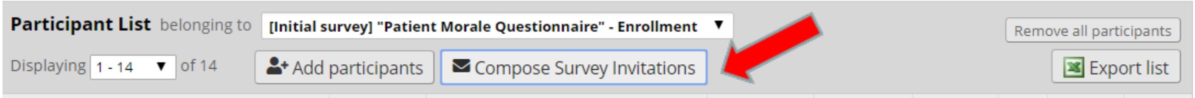
1. Participant List can be populated manually
2. Enable module
3. As emails are populated into that field, they will show up on your participant list

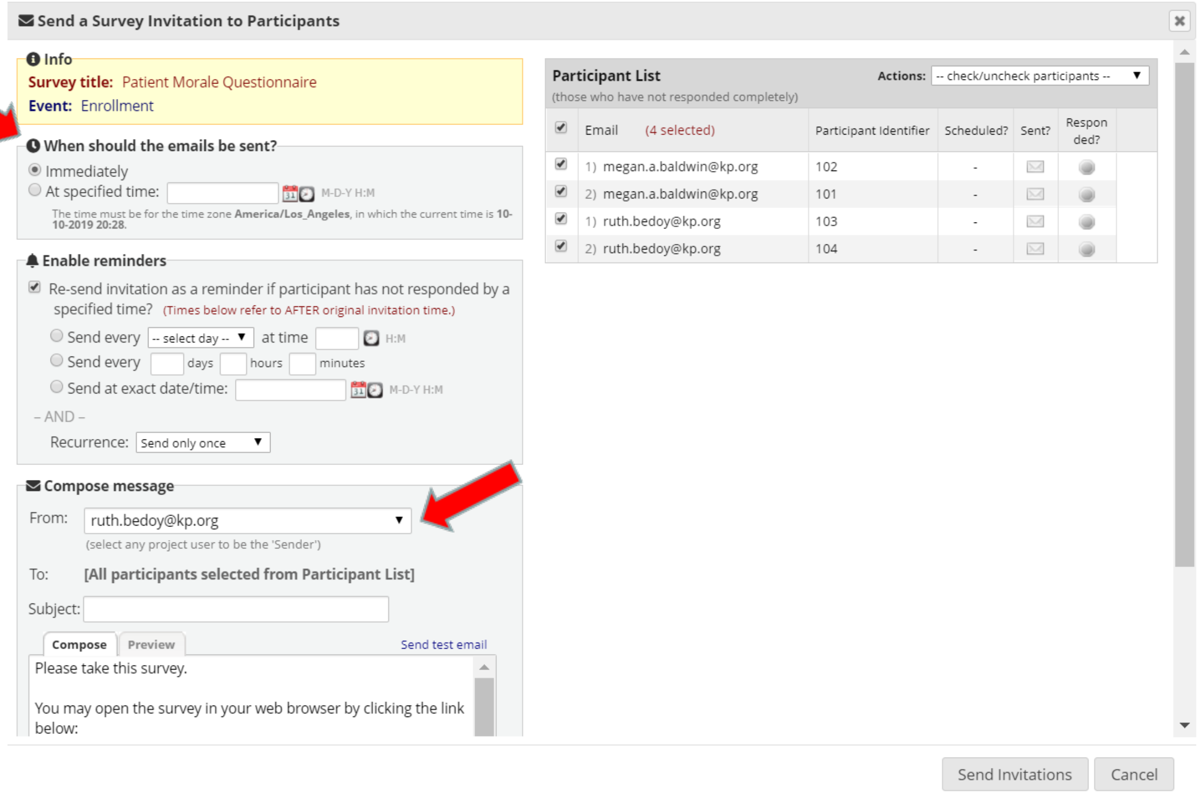


# COMPOSING SURVEY INVITATIONS

1. To compose a survey invitation click on “Compose Survey Invitations”
2. Choose when you would like your invitation to go out
3. Check the “Re-send invitation” box if you would like reminders to be sent out
   - Reminders are sent to participants who have not responded to the original invitation
   - You can choose specific reminder delivery times as well as amount of reminders
4. Compose your message in the “Compose message” box
   - You can select which “From” email invitations are sent from
5. Choose which participants you would like to send your invitation to by checking the corresponding checkbox



# COMPOSING SURVEY INVITATIONS (CONT.)

1. Once a survey is completed, the participant's response status will be changed to a green check mark
   - Once a survey is completed, that unique link will no longer be available
2. If a survey is opened but not completed, the participant's response status will be changed to an orange check mark
   - If the survey is partially completed, that unique link will still be available
   - Depending on the survey settings, the participant will be allowed to start the survey over or pick up from where they left off

**Participant List** belonging to [Initial survey] "Patient Morale Questionnaire" - Enrollment

Remove all participants

Displaying 1 - 14 of 14

Add participants | Compose Survey Invitations | Export list

| Email | Record | Participant Identifier (optional) Disable | Responded? | Invitation Scheduled? | Invitation Sent? | Link | Survey Access Code and QR Code | |
|---|---|---|---|---|---|---|---|---|
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| [No email listed] | | | | - | | | | |
| 1) megan.a.baldwin@kp.org | | 101 | | - | | | | remove |
| 2) megan.a.baldwin@kp.org | 11 | 102 | | - | | - | - | |
| 1) ruth.bedoy@kp.org | | 104 | | - | | | | remove |
| 2) ruth.bedoy@kp.org | 12 | 103 | | - | | | | |

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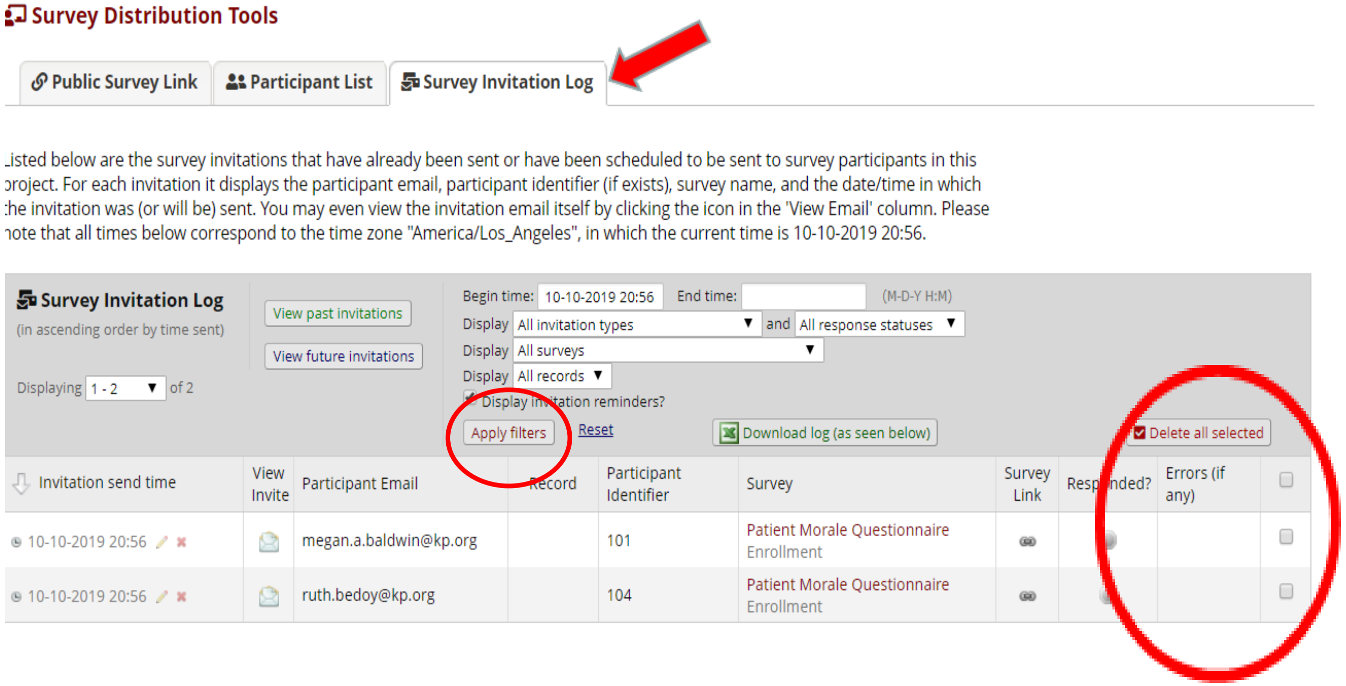
# SURVEY INVITATION LOG

**The Survey Invitation Log allows you to see past and future invitations:**

1. You can filter by “all invitation types”, only “sent” invitations, only “scheduled” invitations, or only invitations that “failed to send”
2. You can filter by the exact survey you would like to view, or you may select “All Surveys”
3. To apply filters, click “Apply Filters”
4. You can also download the invitation log as a CSV file
5. You can also delete multiple invitations all at once by clicking on the boxes for select invitations and selecting the “Delete all selected” box

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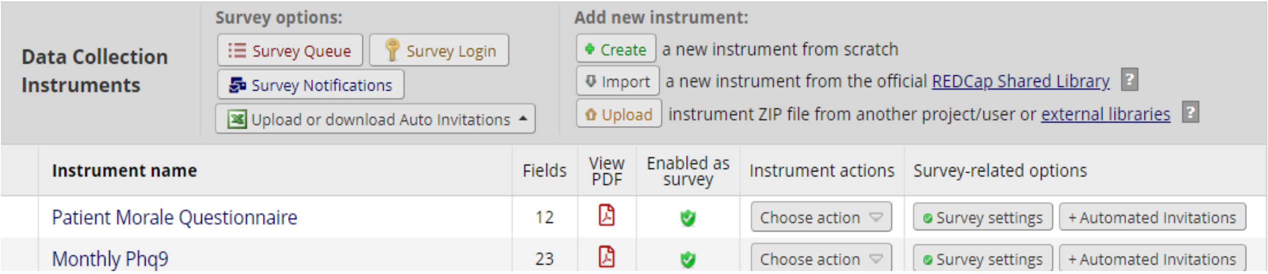
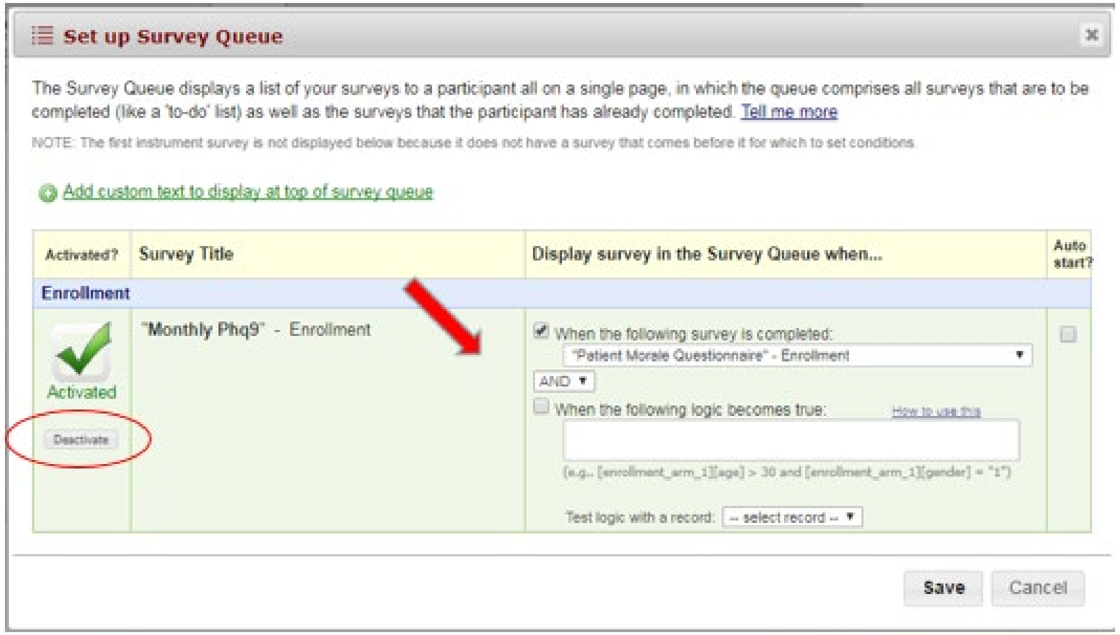
# SURVEY QUEUE

**The Survey Queue displays a list of your surveys to a participant:**

1. Surveys can appear in the Survey Queue based upon certain conditions or logic
2. The participant will only see surveys they have already completed and surveys that they still need to complete in their queue
3. To use the survey queue, activate the survey you would like to include in the survey queue
4. Choose when you would like the survey to appear in the queue based on when other surveys are completed or with logic
5. You can also choose for the survey to auto-start after another survey has been completed

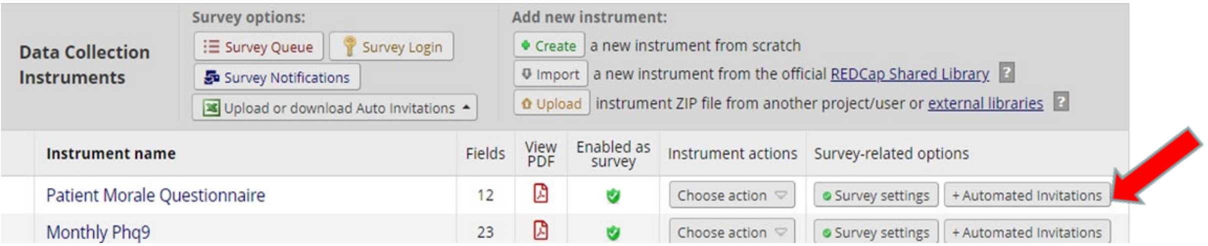


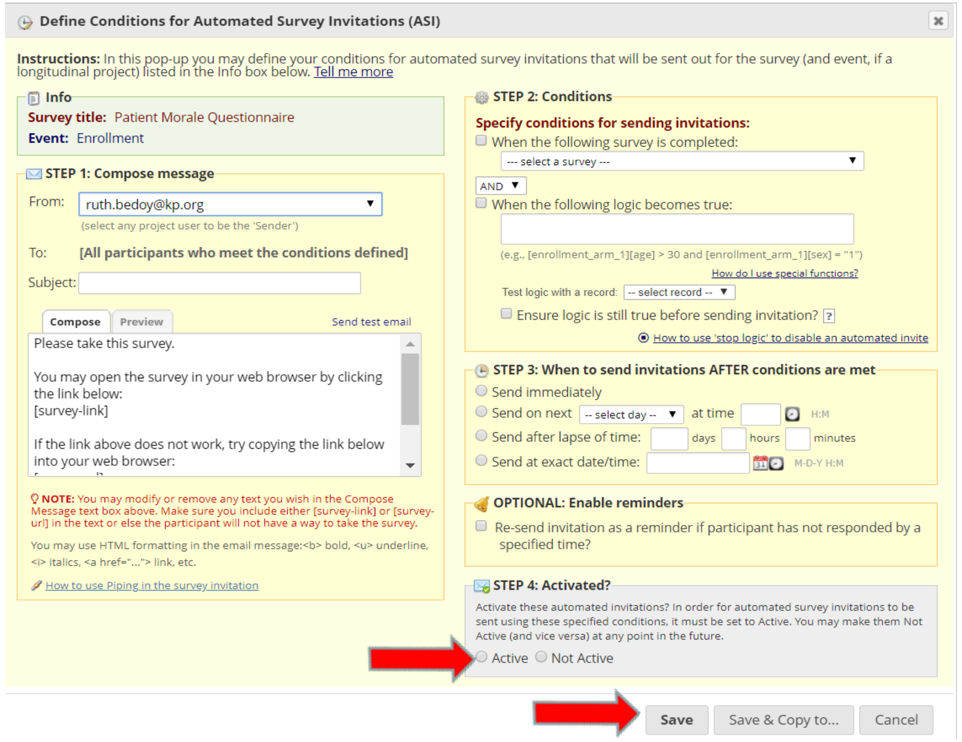



# SURVEY INVITATION AUTOMATION

**Automated Invitations are another option to distribute surveys:**

1. Click “Automated Invitations” on the survey you would like to send out
2. Then click “Set up” in pop up box
3. You can compose invitations like in the participant list and can also set conditions for who the survey is sent to with conditions like those in the survey queue
4. Once you compose your invitation, set the conditions, and reminders if needed, choose “Active”
5. Then click “Save”
   - **Changes to automation will ONLY apply to NEW records – recommend no changes in production**



# SURVEY BEST PRACTICES

1. Remember, if you use the public survey link, the public survey link has to link to the first form of your project and that form has to be a survey
2. Depending on your project and the surveys required, test which distribution method would be best for you
3. If sending automated invitations, make sure to test the logic to ensure invitations are sent out correctly
4. Test that your survey queue works by answering your survey in multiple ways
5. Test your survey and invitations using different browsers and applications
   - **Reminder: You can also send surveys to a specific email address from the survey settings dropdown "Survey-specific email invitation field"**

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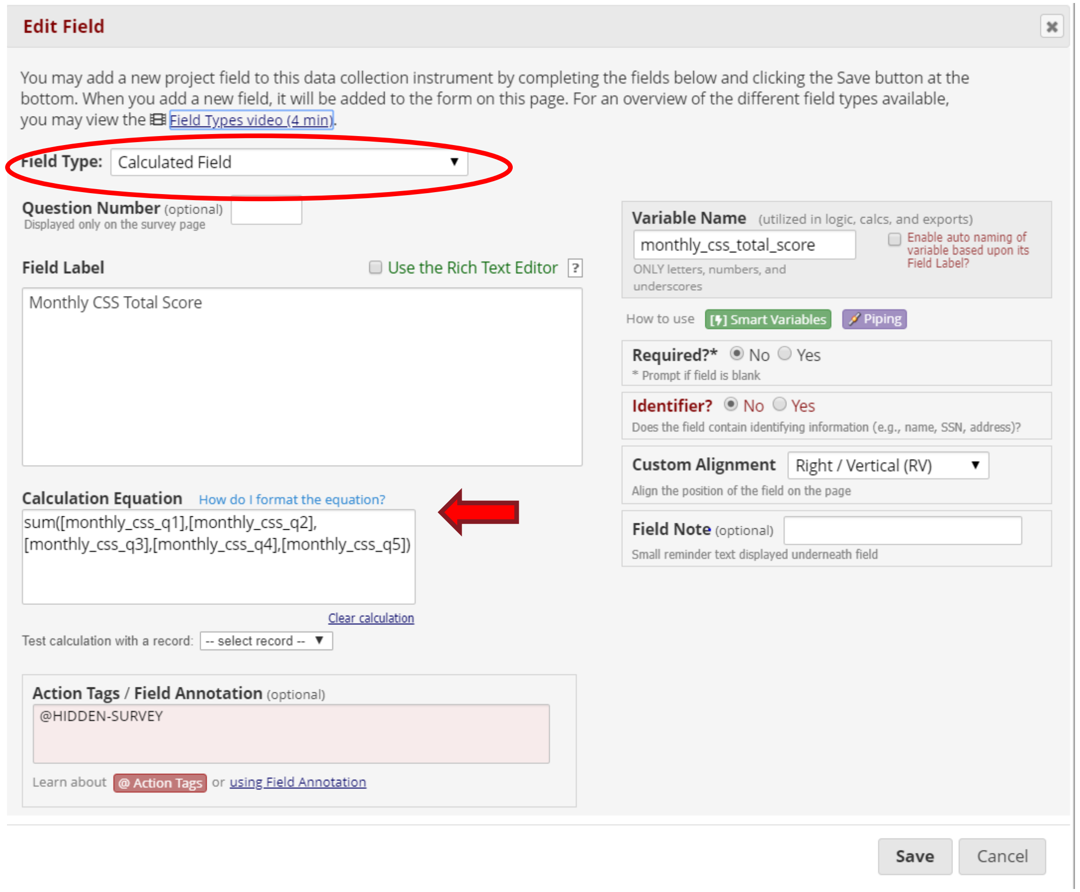
# Calculated Fields

# CALCULATED FIELDS

**Calculate values within data forms or surveys:**

1. Select the appropriate equation from the "How do I format the equation?" prompt
   - Note: Calculations can ONLY yield numeric results, not text
2. For this example, I wanted to calculate the total score of a PHQ9 survey
3. Enter the appropriate variables into the equation
4. You may test the calculation by test-completing a survey/record, and selecting that record for testing
5. If REDCap deems the logic valid, a green checkmark will appear
6. If the logic is not valid, a "Error in Syntax" alert will appear



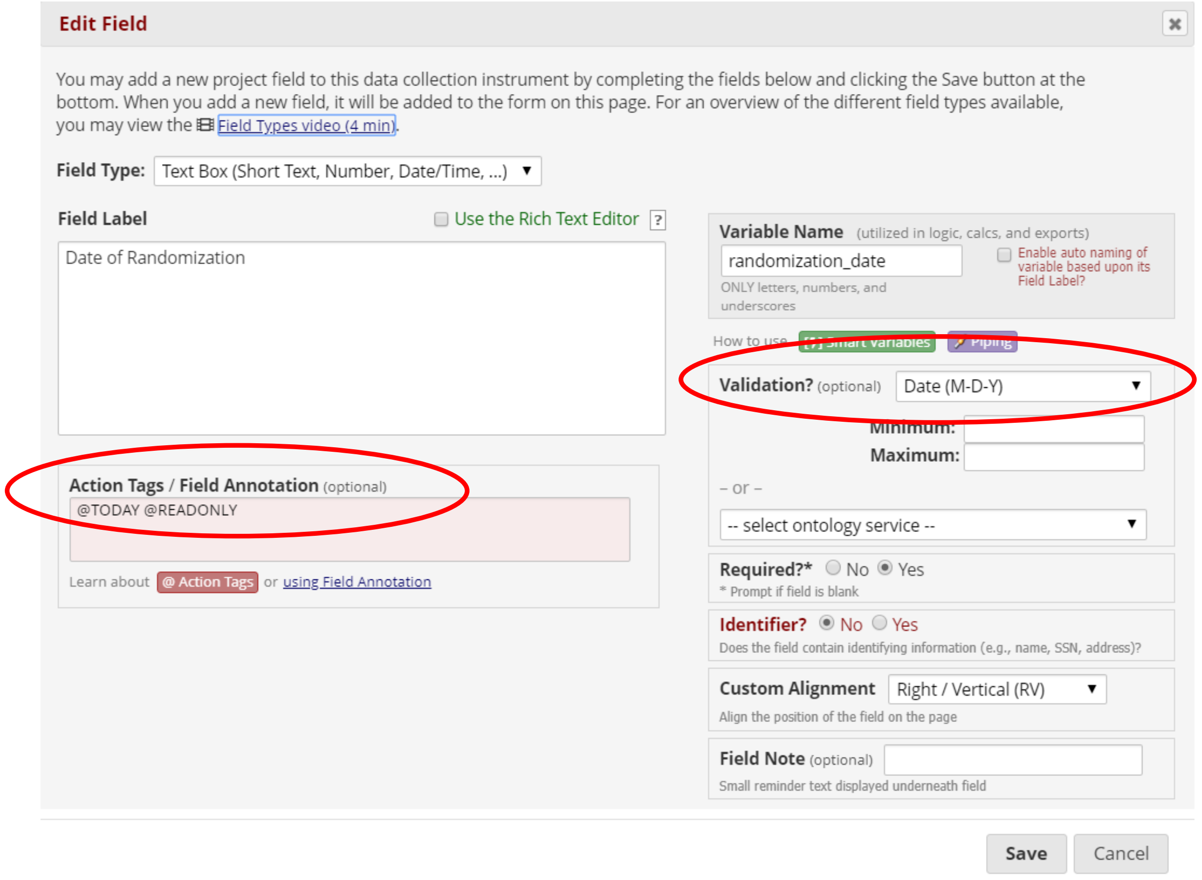
# CALCULATED FIELDS BEST PRACTICES

- **Great for real-time calculations**
  - Scheduling appointments – Am I within the window?
  - Quick calcs – What was the total score?
- **Great for use in one-time calculations**
  - Total score
  - Total weight
  - Total visits
- **Can be used across events/forms**
  - If longitudinal, specify [event_name]
- **Should never be used in automation logic**
  - Calculated fields within forms are only updated using Data Quality rules (Rule H) or by entering into that form
- **Should never be used in fluid reports**
  - Reports that you want to show updated information will show only the LAST calculated value

# Randomization

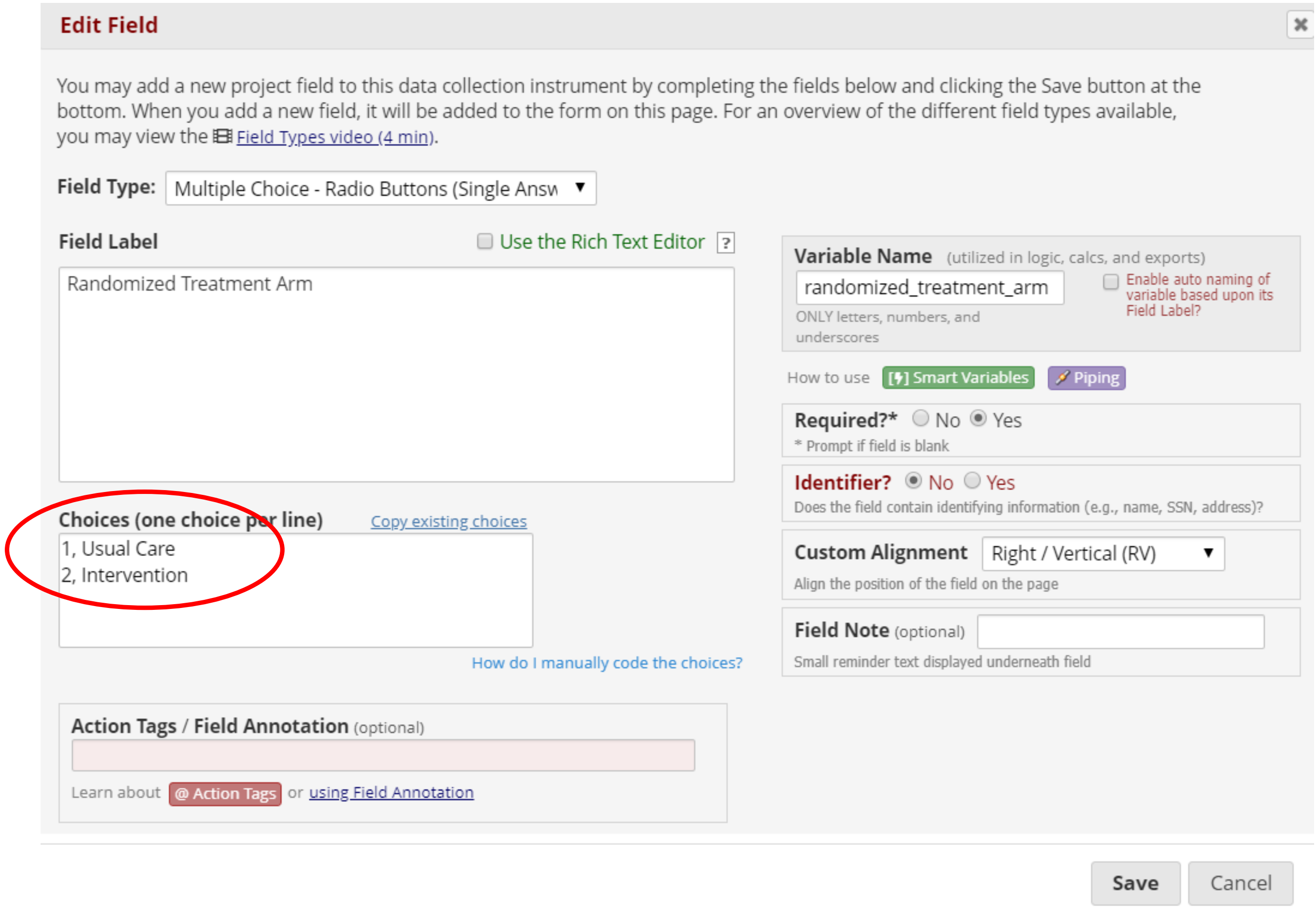
# RANDOMIZATION BUILD

1. Create an instrument in your longitudinal project for “Randomization”
2. Create a “Text Box” field for the date of randomization
3. Insert the necessary fields
   - Field Label
   - Variable Name
   - Validation (M-D-Y)
   - Action Tag/Field Annotation
     - Important to automate the date to the date of randomization
     - @TODAY will allow today’s date to be automatically inserted and will not allow the end-user to change the date during data entry



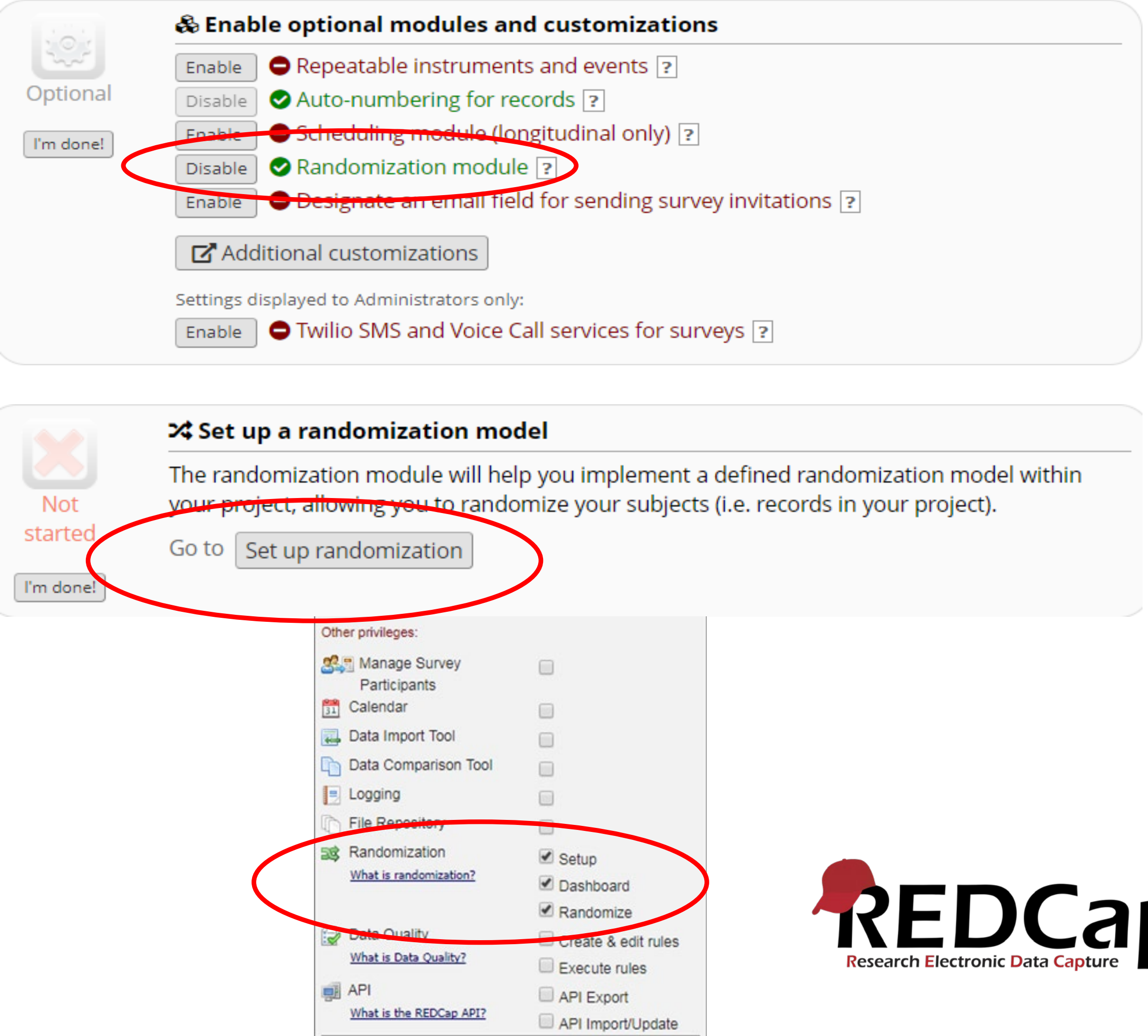
# RANDOMIZATION BUILD (CONT.)

1. Create a “Multiple Choice – Radio Button” field for the treatment arms
2. Insert the necessary fields
   - Field Label
   - Variable Name
   - Choices
     - Generally Usual Care & Intervention
     - Important to collaborate with PM/PI on intervention arms
     - For “Blinded” studies, use numeric values instead of text values
       - This would mean having an allocation table where only the biostatistician is aware of the numeric/text value correlation



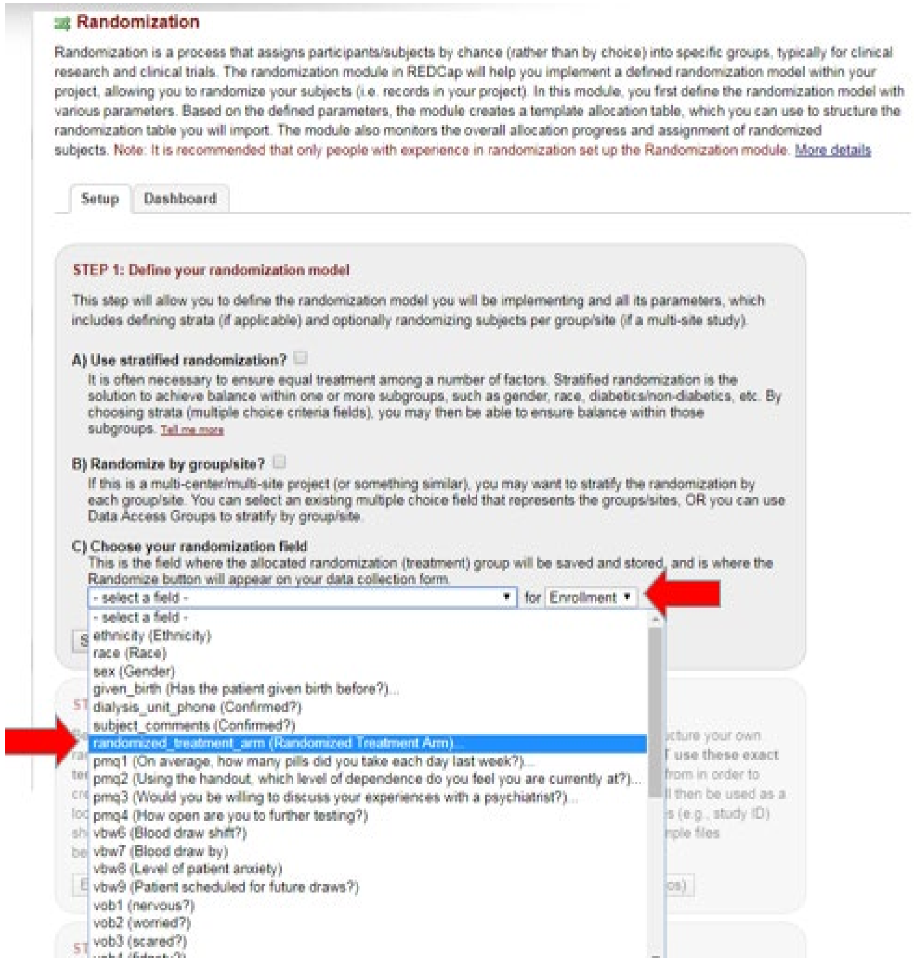
# RANDOMIZATION BUILD (CONT.)

1. On the "Project Setup" page, ensure the "Randomization Module" is enabled
2. After enabling, edit the REDCap Project Manager's rights to include Randomization "setup" privileges
   - If this is not enabled, you will not be able to proceed with randomization setup
   - "Dashboard" and "Randomize" privileges are end-user functions, and these should be discussed with the PM/PI
3. Return to the project setting page and select "Set Up Randomization"



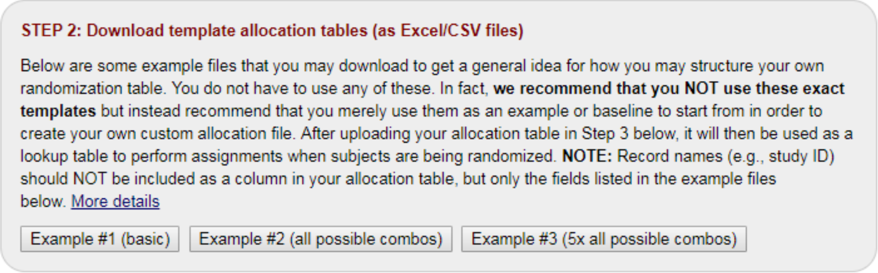
# RANDOMIZATION BUILD (CONT.)

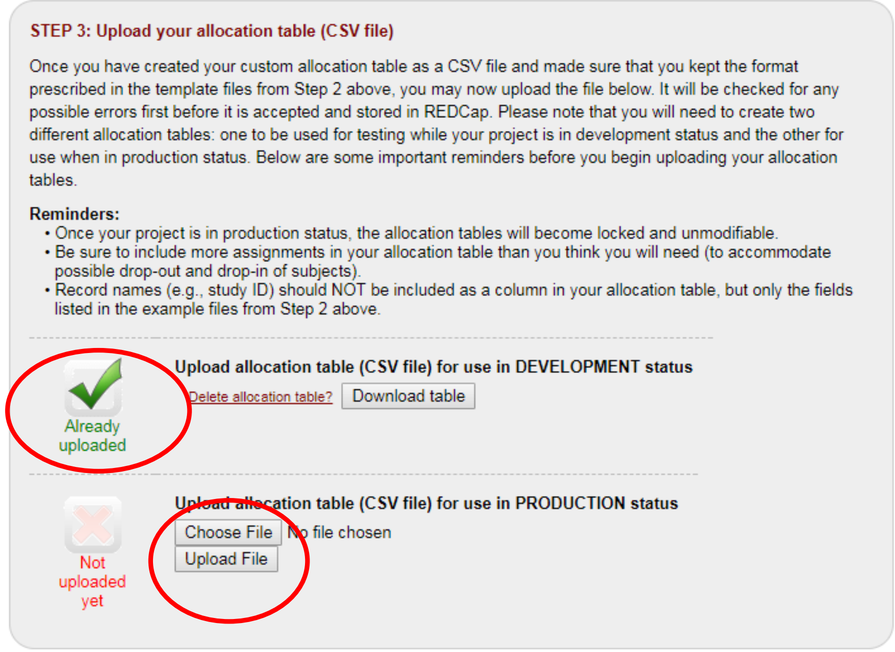
1. You will be redirected to the Randomization Setup page
2. Make the appropriate selections based on discussion with your PM/PI for stratified randomization or randomization by group/site
3. Select the dropdown on the left for “Choose Your Randomization Field”
4. Select the “Field Name” designated in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



# RANDOMIZATION BUILD (CONT.)

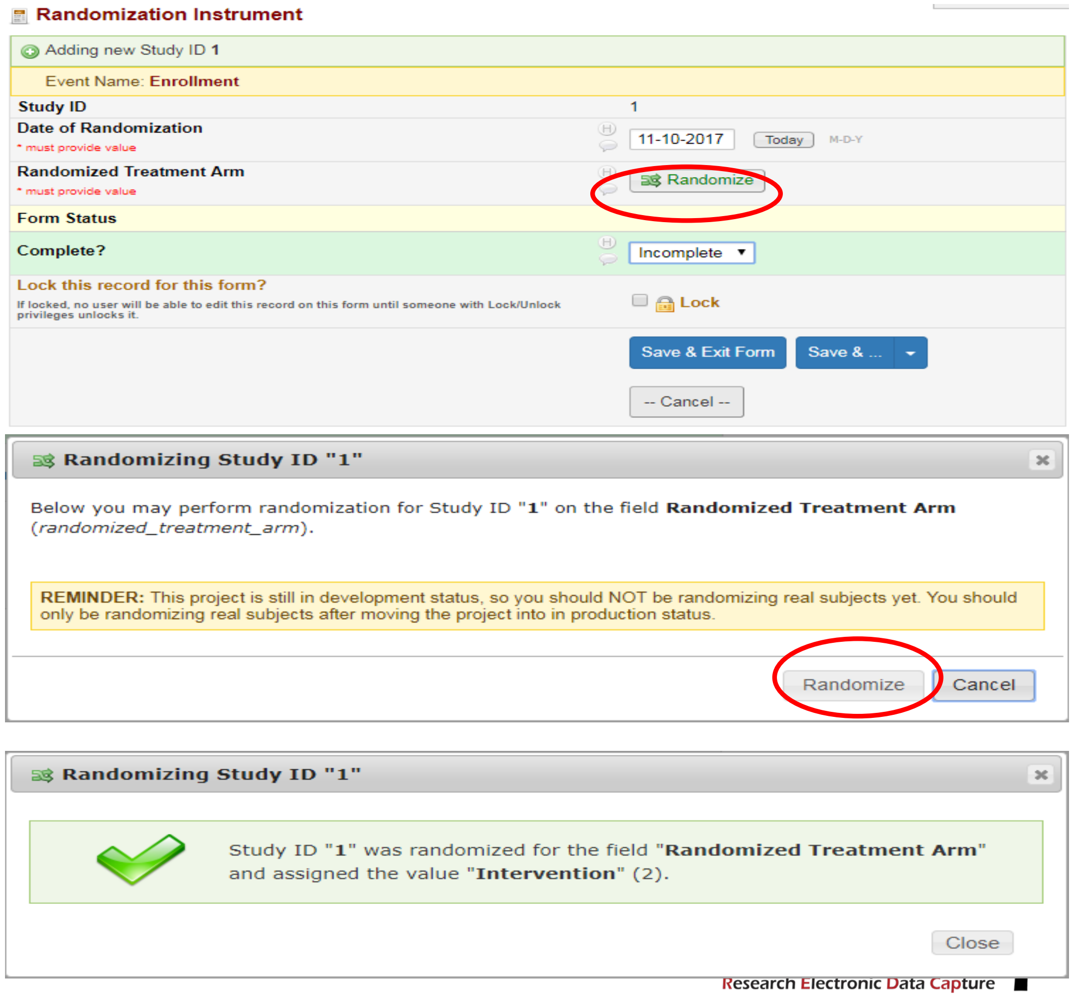
1. Step 2 allows you to download a sample allocation table
   - However, this should be used only for practice/testing
   - Your project biostatistician should provide you with an official allocation table
2. In Step 3, click “Choose File” to locate an official or practice allocation table
   - Note: A project should NOT be moved into production with a practice allocation table in place
3. Once the appropriate file is selected, click “Upload File”
4. Once your file is successfully uploaded, you will see a green checkmark appear
5. You may delete your allocation table by selecting “Delete Allocation Table?”
6. You may download and view your allocation table by selecting “Download Table”
7. To start the process over, select “Erase Randomization Model” in Step 1



# RANDOMIZATION BUILD (CONT.)

1. Add a record to test your randomization instrument
2. You will now see a “Randomize” button on the form
3. Click “Randomize”
4. A pop-up box will appear, to proceed with randomization, click “Randomize”
5. An additional pop-up box will appear indicating a successful randomization and displaying the assigned treatment arm for that participant
6. Steps 2-5 should be used by End-Users when randomizing
   - Note: When moving your project into production, all test randomizations will be erased

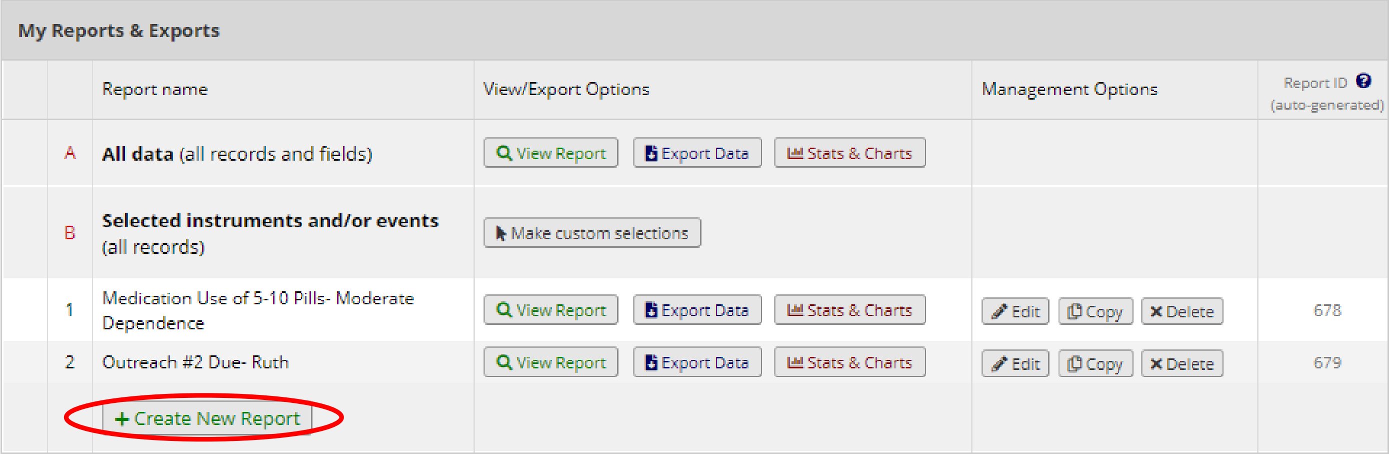


# Reports

# BASIC REPORT OVERVIEW

1. To build a basic report, click on “Data Exports, Reports, and Stats”
2. Click “Create New Report”



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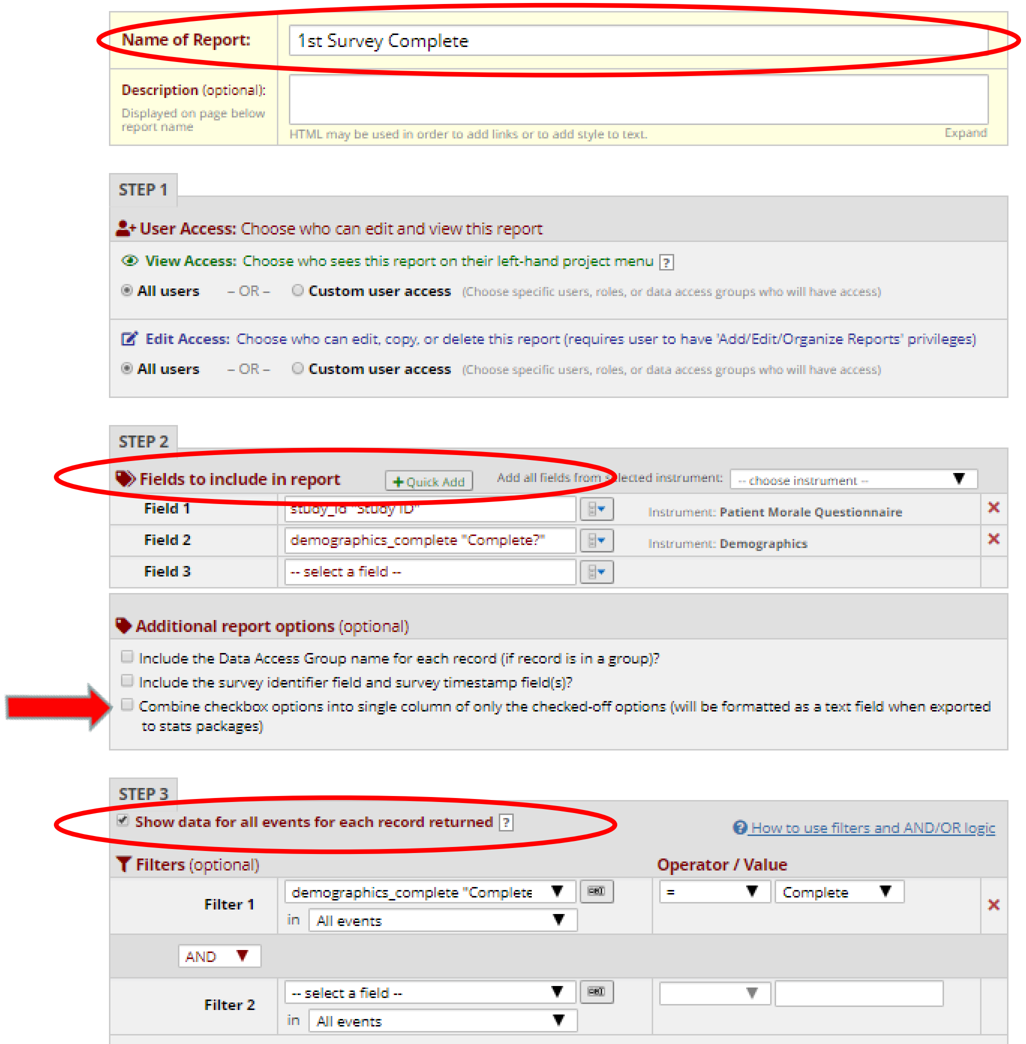
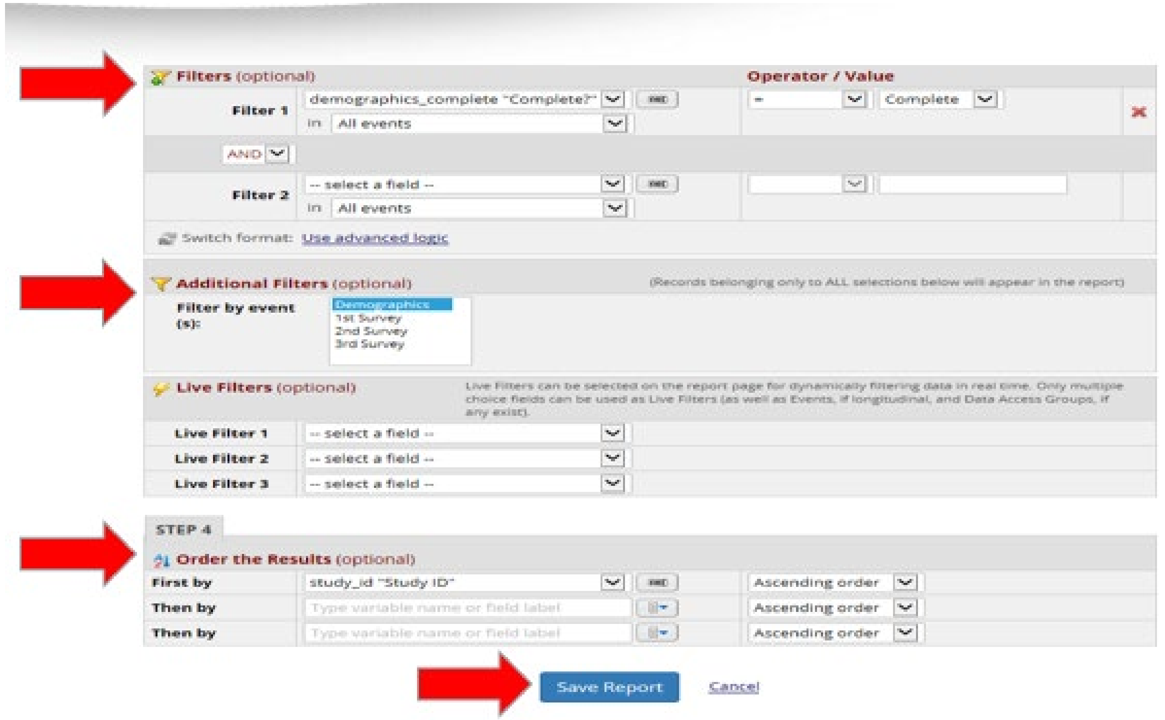
# BASIC REPORT OVERVIEW

1. Insert the name of the report and the variables you would like the report to display
2. Filter results by selecting “Filters” and assign required values
3. Tailor User Access to ONLY those that should view this data
4. For simple viewing, recommend combining checkbox options!



# BASIC REPORT OVERVIEW (CONT.)

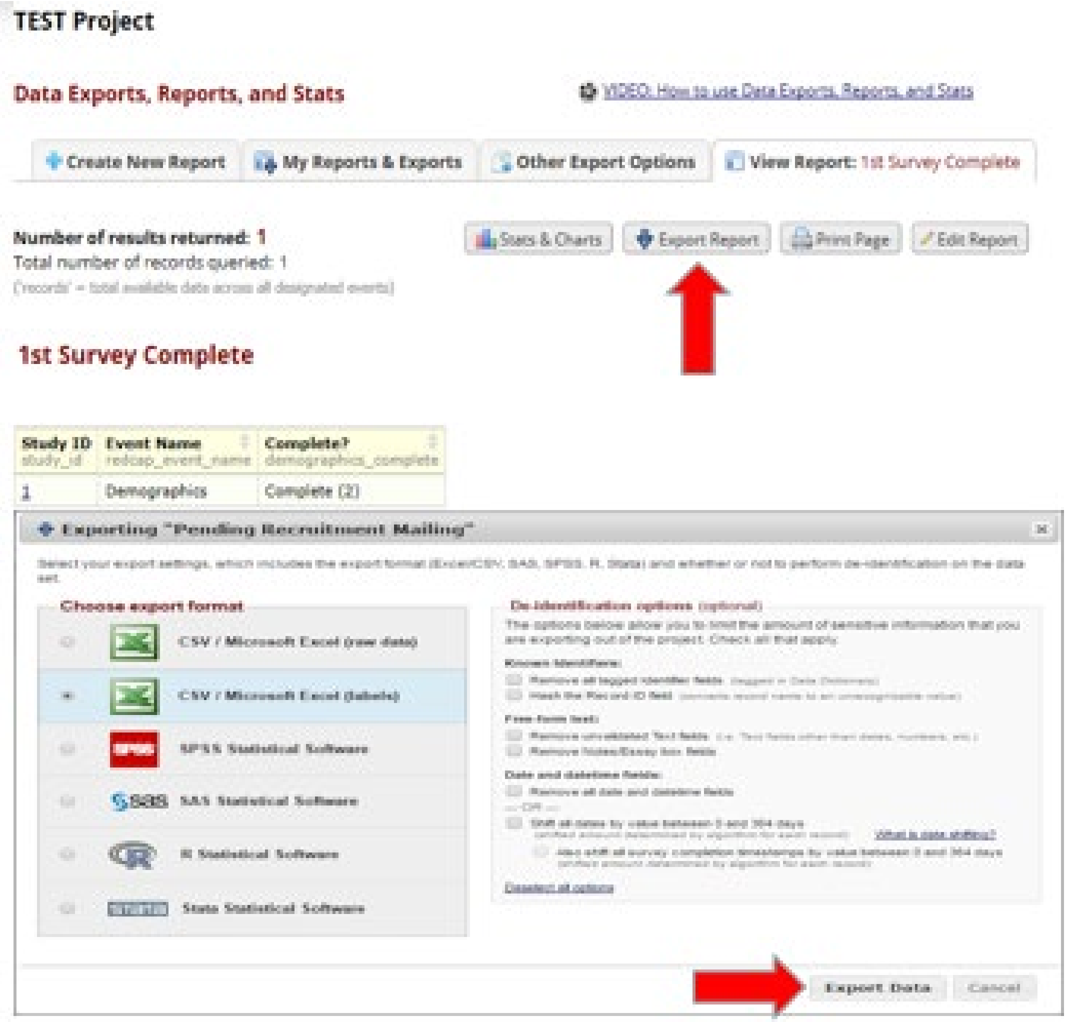
1. You may filter further by selecting an event name
   - Live filters are useful for longitudinal projects & randomized arms
     - Filter in real time
2. Results can be organized in an ascending or descending fashion by variable name
3. Make sure to click “Save Report” before exiting the page
4. Next, you will see a pop-up box allowing you to view your report, continue editing your other reports, or continue editing the report you just completed




# BASIC REPORT OVERVIEW (CONT.)

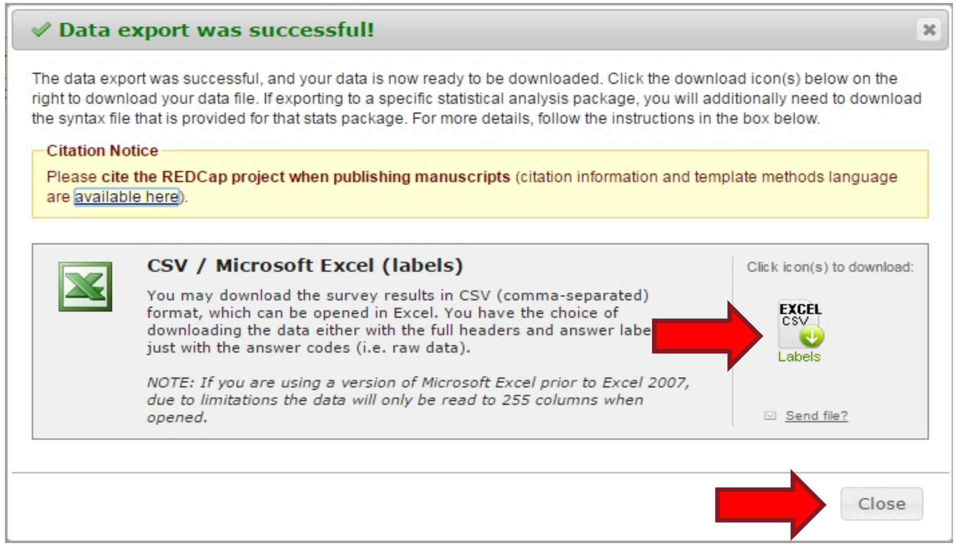
**When viewing your report, you will see several options along the top including Stats & Charts, Export Report, Print Page, and Edit Report:**

1. To Export your report, click “Export Report”
2. You can export your report in whatever fashion your data analyst would like to review data, for the purposes of basic training, we will review exportation into a CSV file
3. Select “CSV/Microsoft Excel” Labels or Raw Data
4. Click the “Export Data” button



# BASIC REPORT OVERVIEW (CONT.)

1. Click the Excel CSV icon and the report will begin to download
2. Click on the download to open
3. Save the report as necessary to your device
4. Click "Close" when finished
5. To access/edit existing reports, click on the desired report under the "Reports" header on the left side of the screen





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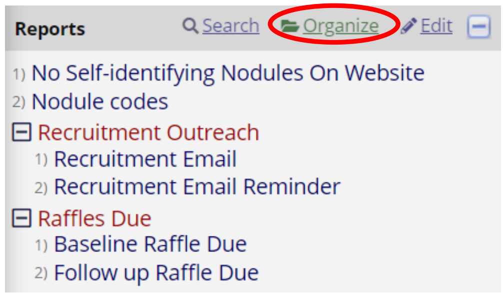
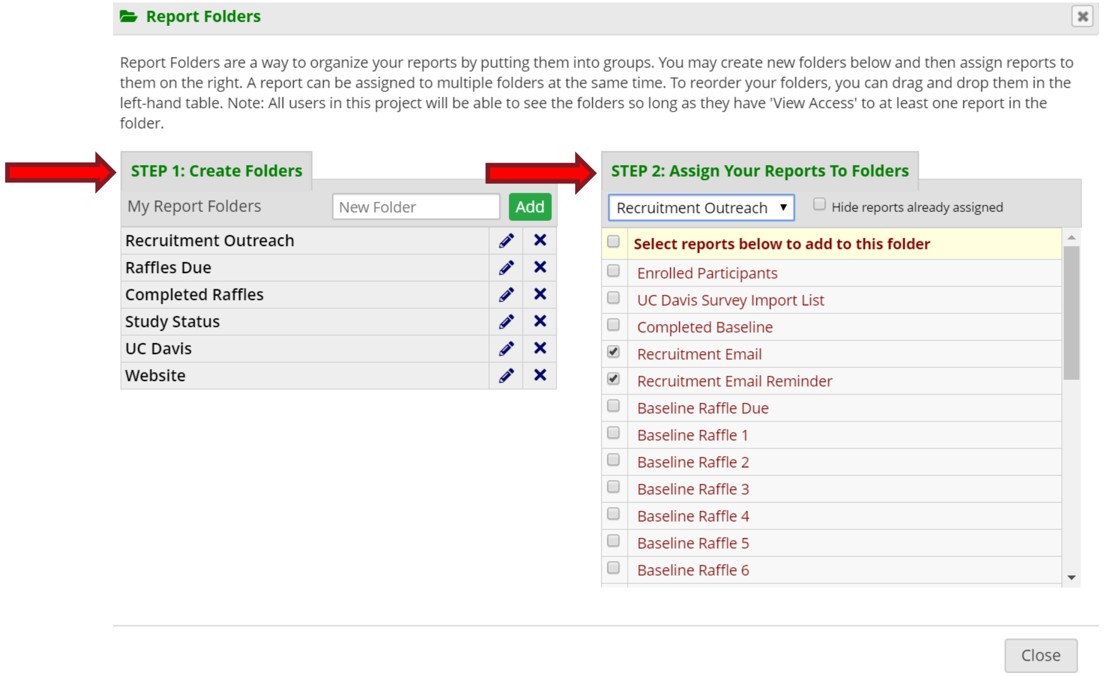
# BASIC REPORT OVERVIEW (CONT.)

**Reports can be organized into folders**

1. In the left hand column, click on "Organize" next to "Reports"
2. Step 1: Create folders you need
3. Step 2: Assign reports to the folders you created
4. Click "Close" to finish

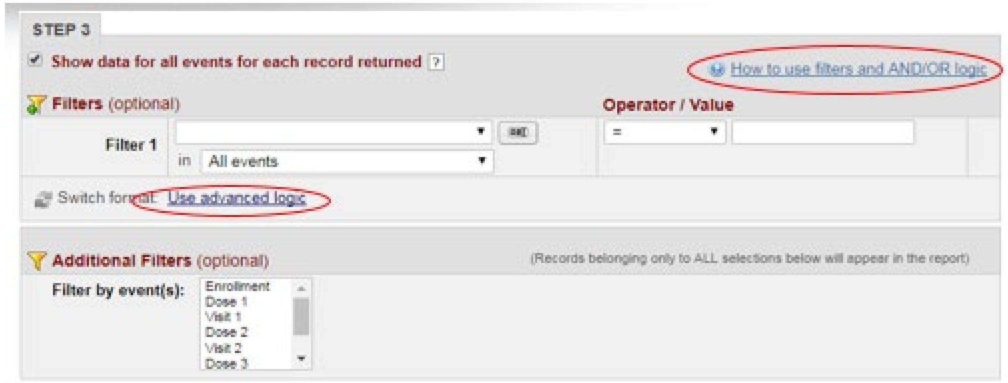


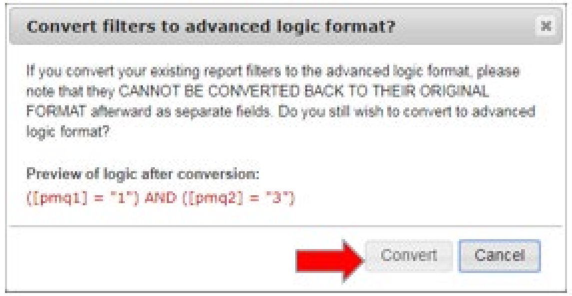



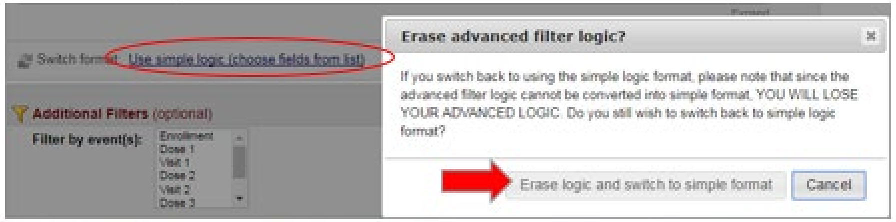
# ADVANCED REPORTS

**Additional filtering using Advanced Logic may be used for more complex reporting requirements:**

1. To begin using advanced logic, you can either enter filters into each row or go straight to using advanced logic
2. Click “Use Advanced Logic”
   - Note: Filters may not be changed back from advanced to simple logic
3. After previewing your logic, click “Convert” to proceed
4. To return to simple logic, click “Use Simple Logic”
   - Note: This will erase your advanced logic
5. Additional information regarding filters and logic may be found by clicking “How to Use Filters AND/OR Logic”



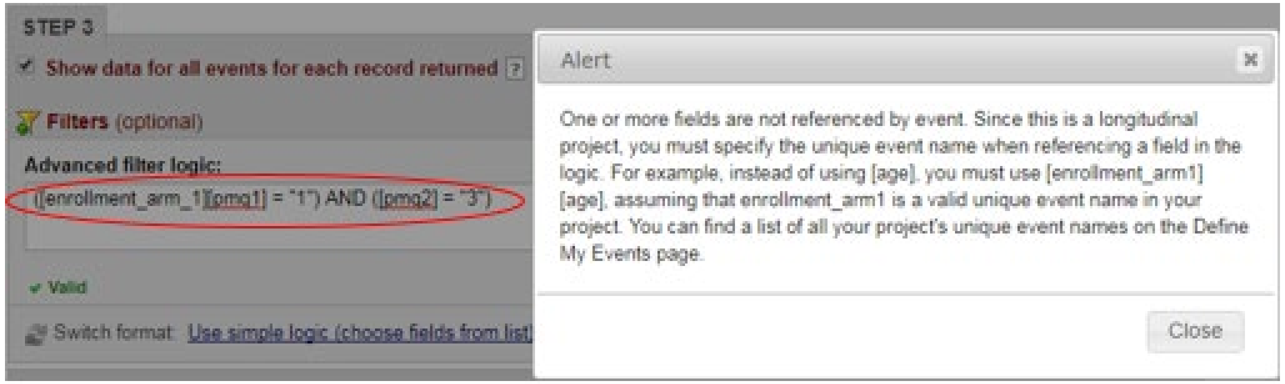



# ADVANCED REPORTS (CONT.)

**Special functions may be used to perform tasks such as date calculations, value summation, and conditional values:**

1. Click “How Do I Use Special Functions” to access additional information for these advanced logic equations
2. Advanced logic must be entered manually
   - Note: For longitudinal projects, event names must precede variable names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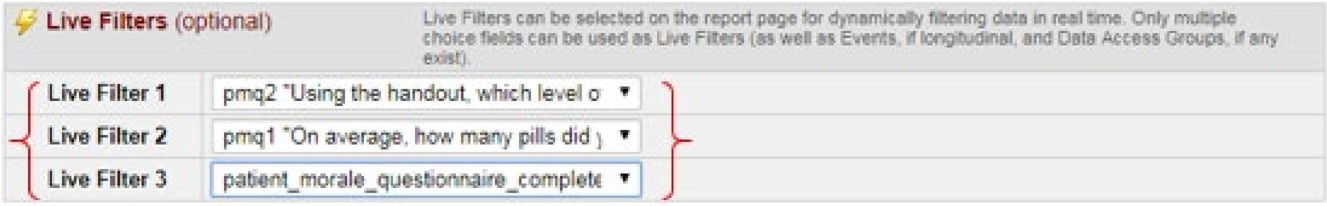
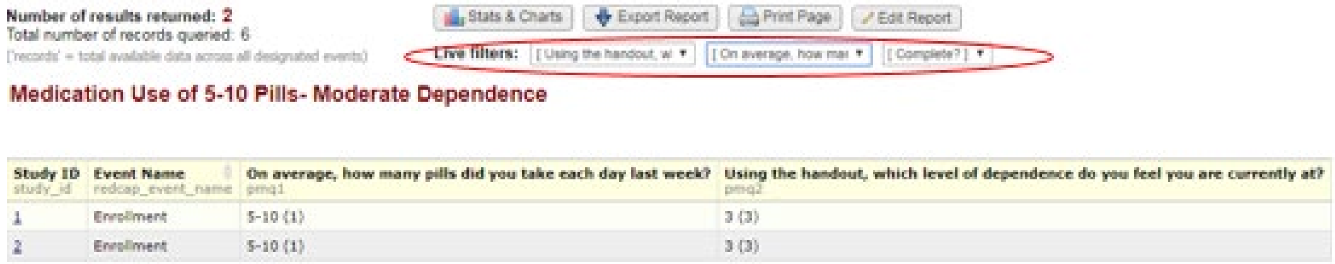
# ADVANCED REPORTS (CONT.)

**Live filters allow you to filter report results in real time on the “View Report” page:**

1. Select the dropdown menu of the variable you would like to search and select the desired search value
    - Hint – Especially useful when:
        - Randomized arms
        - Longitudinal/multiple events



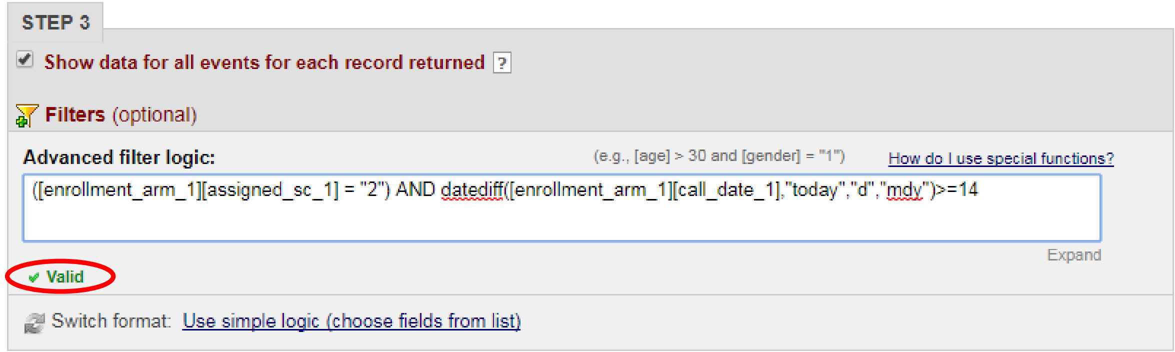



# ADVANCED REPORTS (CONT.) – DATE DIFFERENTIALS

**Date Differentials are a popular "special function" in reporting:**

- Date differentials are useful when calculating the due date or timeframe for an event

1. Using the Advanced Filter Logic, enter the template for date differential calculations
   - datediff ([date1], [date2], "units", returnSignedValue)
   - In a longitudinal project, make sure to designate an event name before the variable name "enrollment_arm_1"
2. In this example, we are building a report to query participants due for their 2nd outreach attempt by a specific study member
   - We would first filter by the study coordinator "assigned_sc_1" = "2"
   - Secondly, we would filter by the date the second outreach is due, in this case, 14 days (>=14) after the first outreach attempt "call_date_1"
3. When logic is deemed "valid" by REDCap, a green checkmark and "Valid" will appear



# ADVANCED REPORTS (CONT.) – DATE DIFFERENTIALS

**Date Differentials Explored…**

- Calculating Days/Months BEFORE an Event
  - Example – we want to send out a survey at least 90 days BEFORE a patient gives birth
    - “today” should precede event/variable names
      - Datediff(“today”, [patient_inform_arm_1][estimated_due_date], “d”, “true”) > 89
- Calculating Days/Months AFTER an Event
  - Example – we want to send out a baseline survey 2 days AFTER a patient has consented
    - “today” should follow event/variable names
      - Datediff([consent_inform][date_of_consent], “today”, “d”, “true”) > 1
- Notice that dates are >89 and >2 – because >89 = 90 and >1 = 2
- Recommend that for surveys w/ reminders – use >, not =
- “True” gives an *actual value, not an absolute value* - *absolute value will always be positive number*

# Additional Helpful Features

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# PLUG IN - AUTONOTIFY

1. Under “Project Setup”, add a project bookmark
2. Enter a label for your link
    1. Ex. PHQ9 Scores
3. Enter the appropriate “Link URL/Destination”
    1. External REDCap: https://www.kpredcapihr.org/plugins/autonotify/
    2. Internal REDCap: http://kpco-ihr-4/redcap/plugins/autonotify/
    3. DMZ REDCap: TBD
4. Select the link type of “Simple Link”
5. Designate user access
6. For email notifications of a specific event, select “Opens in New Window”
7. To include record or project ID information to the end of the URL, check the boxes
8. Click “Add” when finished or ready to add another bookmark

# AUTONOTIFY (CONT.)

1. Click your new bookmark under “Project Bookmarks” on the left side of your home screen
2. The screen to the right will appear
3. Enter the title of your trigger
4. Enter the conditional logic
   1. Note: This is advanced logic that must be entered manually
   2. Note: Logic can be set up for each survey in the project WITHOUT using preceding event names
5. To add additional triggers, click “Add Another Trigger”
6. To test your logic, create a test record matching the trigger conditions and click “Test”
7. If the logic is correct, a green checkmark will appear
8. Configure the email that will be sent out in the event of a trigger
   1. Email subject lines should NOT contain PHI; these are not secure emails
9. Click “Save Configuration”

# AUTONOTIFY (CONT.)

- The “REDCap AutoNotification Alert” email will automatically include:
  - Project Name
  - Event Name
  - Instrument Name
  - Record ID
  - Date/Time of survey completion

## REDCap AutoNotification Alert

| | |
|---|---|
| Title | **PHQ-9 Score >=15** |
| Project | 4 |
| Event | 3month_followup_pp_arm_2 |
| Instrument | alma_participant_3month_followup_survey |
| Record | 13 |
| Date/Time | 2019-10-11 15:14:10 |
| Message | Please see information above to determine follow-up, if needed. |

**View Record**

To view this record, visit this link:
https://www.kpredcapihr.org/redcap_v8.1.4/DataEntry/record_home.php?pid=461&id=13

# SMART VARIABLES

- Smart Variables allow you to reference information other than data fields.
- Smart Variables are context-aware and thus adapt to many different situations in which they can know who the current user is, what event is currently being viewed, whether or not an instrument is being viewed as a survey or data entry form, etc.
- Smart Variables are dynamic because they adapt to the current context in which they are used.
- Smart Variables are easily distinguishable from field variable names because Smart Variables will have dashes and colons whereas field variable names cannot.
- Smart Variables can be used:
  - On their own - e.g., *[record-dag-name]*
  - In conjunction with field variables - e.g., *[previous-event-name][weight_measurement]*
  - In conjunction with other Smart Variables - e.g., *[previous-event-name][survey-url:prescreening_survey]*

# SMART VARIABLES (CONT.)

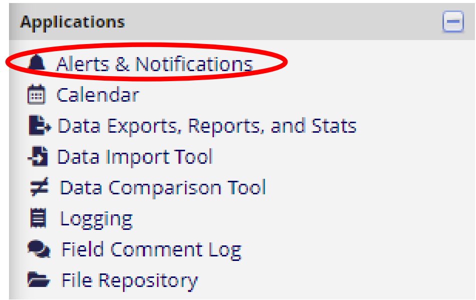
- Smart variables can be used in many places throughout REDCap.
- For classic projects, a variable can be used on its own, it will simply be [variable]
- For longitudinal projects, you need to specify that field variable for a specific event (for longitudinal projects), you must prepend the unique event name - e.g., [event][variable].
- If you are referencing a specific repeating instance of the field, you append (not prepend) the repeat instance number in brackets - e.g., [variable][2], in which the format is the same for both repeating instruments and repeating events. If you are referencing the second instance of a repeating event, for example, you would use the format [event][variable][2]. If you are wanting to determine if a certain option for a checkbox field is checked or not, you may include the checkbox option value inside parentheses which follow the variable name inside the brackets - e.g., [my_checkbox(4)]. All these components can be used together, if needed, such as if you want to reference checkbox option 3 that exists on the fifth instance of a repeating instrument on 'Event 1' - e.g., [event_1_arm_1][my_checkbox(3)][5].Field notation and Smart Variables can be used for...Calculated fields - using mathematical operations to calculate a numerical result

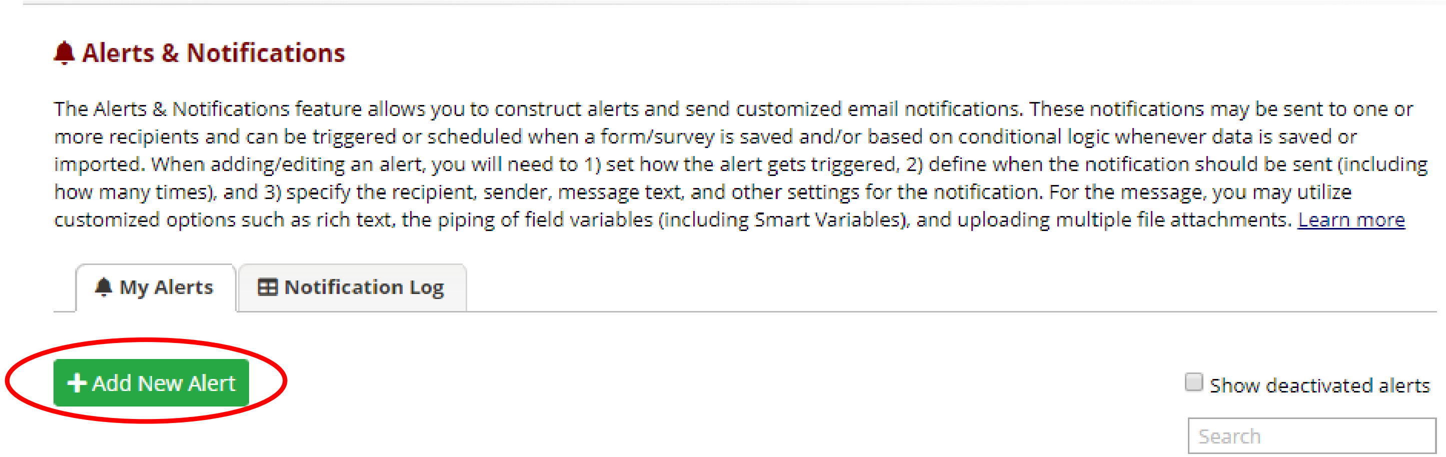
# SMART VARIABLES (CONT.)

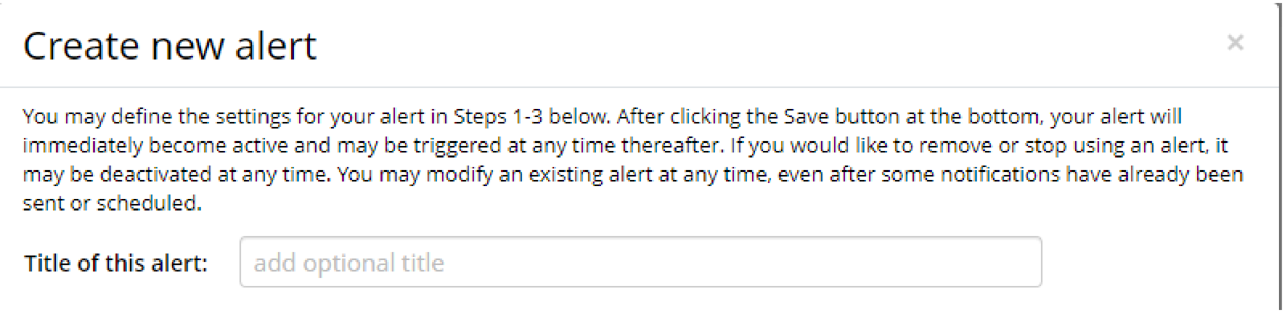
- Conditional logic - includes branching logic, advanced filters for reports, and logic for Survey Queue, Data Quality rules, Custom Record Status Dashboards, and Automated Survey Invitations
- Piping - using field notation to insert values into labels on a survey/form or inside a survey invitation
- NOTE: While Smart Variables can be utilized in Data Quality rule logic, in many cases they will cause Data Quality rules to take much longer to complete.
- ADMINISTRATOR NOTE: Since you are a REDCap administrator, please be advised that you may also use Smart Variables inside the query of a dynamic SQL Field that is displayed on a survey or data entry form. You may see the SQL Field instructional popup in the Online Designer for tips on how to do this.

# ALERTS & NOTIFICATIONS

- Triggering Events
  - Form save status
  - Conditional logic
  - Both
- Alert Schedule
  - Customizable
  - Multiple firings
- Message Settings
  - CC/BCC
  - Piping – PHI
  - Attachments
  - Send error notification
- Alert Expiration

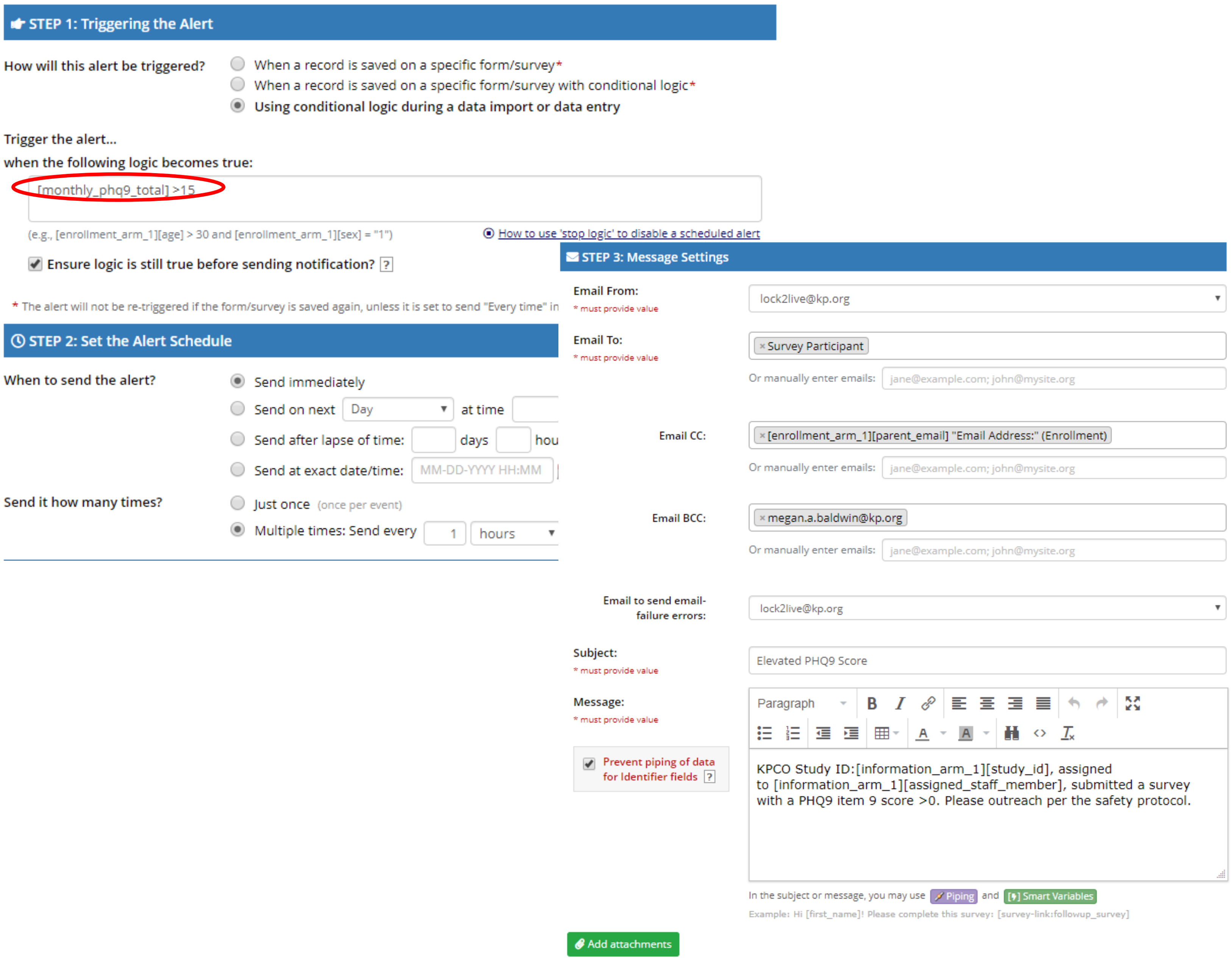


# ALERTS & NOTIFICATIONS CONT.

- Pipe in Record/Study ID
  - Does not take you straight to record
- Alerts to Participants
  - Reminder
  - Invitation
- Alerts to Staff
  - High Scores
  - Reminders
  - Grant Submission Form
- Recipients
  - Email field vs. specific address
  - Multiple Addresses



Questions?