Intermediate REDCap Tutorial 202

UCSF Academic Research Systems

Presented by

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September 22, 2014
Academic Research Systems (ARS) Services

• **MyResearch**
  – Secure, HIPAA compliant web-based environment for the storage, sharing, and analysis of PHI and RHI

• **Research Electronic Data Capture (REDCap)**
  – Secure, HIPAA compliant web-based system for research surveys and databases

• **Clinical Data Research Consulting (CDRC) Services**
  – The extraction of data from the UCSF Medical Center APeX EMR
  – The extraction of data from the SFGH Lifetime Clinical Record
At the end of this training, you should be able to explain/use the:

• Longitudinal Database
  – Scheduling Events and the Calendar App

• Add or Edit Bookmarks (Project Links)

• Double Data Entry functionality (REDCap Admin)
  – Data Comparison App
At the end of this training, you should be able to explain/use the:

• Calculated Fields

• Customizing text

• API to automate data (REDCap Admin)

• Report Builder

• Logging App to view Audit information
REDCap Project Type Use Cases

- **Database Only**
  - Standard Database, REDCap users will be entering data
  - Longitudinal Database, REDCap users will be entering data on more than one occasion.

- **Survey Only**
  - Collect results from participants

- **Survey with Data Entry Forms**
  - Collect results from participants and continue collecting/entering data by REDCap users

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When creating a Longitudinal project, checking “Enable the scheduling module” to activate the scheduling module under Data Collection.
Longitudinal databases are for collecting research information more than once at varying times.

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Longitudinal Databases – Define My Events

Designate your instruments once you have defined your events.

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Click the Begin Editing button to match events to data collection instruments.
The Generator Schedule button allows you to generate a new schedule based upon your defined events.

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Once a Schedule is created it displays on the Calendar App (if enabled).

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Longitudinal Databases – Data Entry

Whether or not the Calendar App is enabled, Data Entry matches Collection Instruments to Events.
Add or Edit Bookmarks (Project Links)

Set up project bookmarks (optional)
You may create custom bookmarks to webpages that exist inside or outside of REDCap. These bookmarks will be seen as links on the left-hand project menu and can be accessed at any time by users who are given privileges to do so. Every project bookmark has custom settings that allow one to control its appearance and behavior.

Go to Add or edit bookmarks

Add Project Links by clicking the Add or edit bookmarks button on the Project Setup tab. Your links will be accessible in the newly created “Project Bookmarks” section of the left toolbar.

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Double Data Entry (DDE)

Once the Double Data Entry module is enabled, you manage who is the reviewer and DDE Person #1 and DDE Person #2 under the User Rights tab.

REDCap Administrators can enable the Double Data Entry module.

Done by a REDCap Administrator

Done by you or your project Administrator

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Double Data Entry (DDE) – Cont’d

Add users by their user name here

Comprehensive User Rights View

<table>
<thead>
<tr>
<th>User name</th>
<th>Expiration</th>
<th>Calendar</th>
<th>Data Export Tool</th>
<th>Data Import Tool</th>
<th>Data Comparison Tool</th>
<th>Logging</th>
<th>File Repository</th>
<th>Double Data Entry</th>
<th>User Rights</th>
<th>Data Access Groups</th>
<th>Reports &amp; Report Builder</th>
<th>Record Locking Customization</th>
<th>Lock/Unlock Records</th>
<th>Project Design and Setup</th>
<th>Create Records</th>
<th>Rename Records</th>
<th>Delete Records</th>
</tr>
</thead>
<tbody>
<tr>
<td>instructor</td>
<td>never</td>
<td></td>
<td>Full Data Exit</td>
<td>√</td>
<td></td>
<td></td>
<td></td>
<td>Reviewer</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>×</td>
<td>×</td>
<td></td>
<td>√</td>
<td>√</td>
<td>×</td>
</tr>
<tr>
<td>train_01</td>
<td>never</td>
<td></td>
<td>De-Identified</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>DDE Person #1</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>DDE Person #1</td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
<tr>
<td>train_02</td>
<td>never</td>
<td></td>
<td>De-Identified</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>DDE Person #2</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td>×</td>
<td></td>
<td>×</td>
<td>×</td>
<td>×</td>
</tr>
</tbody>
</table>

Reviewer, DDE Person #1, and DDE Person #2 display in the User Rights summary.

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Double Data Entry - Cont'd

Reviewers can look at either record that was filled out by Data Entry Person #1 and/or #2.
The Data comparison Tool will show fields between two records that do not match.

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Double Data Entry – Data Comparison Tool - Cont'd

The Merged Record will not have a Double dash and #

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Calculated Fields

In this Data Entry Form, the BMI is automatically calculated based on Height and Weight.

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Calculated Fields – Cont’d

Calculations:

<table>
<thead>
<tr>
<th>Calculations</th>
<th>Value</th>
<th>View equation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum</td>
<td>45</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Median</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Min</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Max</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Round Data_10</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Rounddown Data_10</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Roundup Data_10</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>Abs Data_6</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Stdev</td>
<td>2.7386127875258306</td>
<td></td>
</tr>
</tbody>
</table>

New calc functions: sum(), mean(), median(), min(), max(), round(), roundup(), rounddown(), abs(), stdev()

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Using HTML Tags to Control Fonts

Please complete the survey below.

Please don’t forget the required fields!

Thank you!

This highlighted HTML adds text in the message box and makes the text red.

The pre and post-Survey text can be altered with HTML tags.

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Using HTML Tags to Control Fonts - Cont'd

Surveys (and Data Entry Forms) can be altered with HTML tags too

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Common HTML Tags

- `<b>Text</b> = Text (Bold)
- `<i>Text</i> = Text (Italic)
- `<u>Text</u> = Text (Underline)
- `<font color="FF000">Text</font> = Text
- `<center>Text</center> = Text
- `<font size="5">Text</font> = Text (choose 1-7)
- `<a href="http://www.ucsf.edu">Link to UCSF</a> = UCSF (embedded link)
REDCap Admins can create an API Token for your project. Once created, find your Token on the REDCap API Help Page.

https://redcap.ucsfopenresearch.org/api/help/
Your API Token allows your group’s programmer to set up these actions to occur automatically according to your timetable.

**API Export capabilities:**
- export arms,
- export form-event mapping,
- export user info

**Sample API code**

```xml
EAV XML:
<?xml version="1.0" encoding="UTF-8" ?>
<records>
  <item>
    <record/>
    <field_name></field_name>
    <value></value>
    <redcap_event_name></redcap_event_name>
  </item>
</records>
```

Flat XML:
```xml
<?xml version="1.0" encoding="UTF-8" ?>
<records>
  <item>
    each data point as an element ...
  </item>
</records>
```
Report Builder

Build and save reports that query in real time.

After a Report is saved it is accessible on the left side tool bar

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Report Builder - Cont'd

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

Viewing, Exporting, Editing, and Copy options
The Logging App displays what each user has done to a particular project.
Additional Help and Resources

- The REDCap Consortium website including demonstration/tutorial videos and the REDCap Shared Library are available at =>
  [http://www.project-redcap.org/](http://www.project-redcap.org/)

- Submit an online request form for a new REDCap user account at =>
  [https://ucsf.service-now.com/ess/order_accounts.do](https://ucsf.service-now.com/ess/order_accounts.do)

- Assistance with technical issues while using REDCap, please contact
  [ITS-ARSsupport@ucsf.edu](mailto:ITS-ARSsupport@ucsf.edu)

- ITS Help Desk 415-514-4100

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