REDCap is supported by Grant Number UL1TR000445 from the National Center for Advancing Translational Sciences (NCATS) at the National Institutes of Health (NIH).
Presenter
Laura McLeod
Relationship Manager
Vanderbilt REDCap Team
Today’s slides…

…and a link to the User Guide will be emailed to you after this training

Via a REDCap Survey!!
Different learning styles

See          Hear          Do
History and Background
A secure web application for managing your data online
Est. 2004

- 29k end users
- 61k projects
• REDCap is licensed for free to non-profits around the world
• Currently over 3,400 REDCap installations worldwide
What the Vanderbilt Support Model Means for You
REDCap at Vanderbilt

+ Generalized Support

+ Individualized Support
Main project settings

- **Enable**
  - Use surveys in this project
  - Use longitudinal data collection with defined events

[Link: VIDEO: How to create and manage a survey]
Welcome to REDCap!

REDCap is a mature, secure web application for building and managing online surveys and databases. Using REDCap's stream-lined process for rapidly developing projects, you may create and design projects using 1) the online method from your web browser using the Online Designer; and/or 2) the offline method by constructing a 'data dictionary' template file in Microsoft Excel, which can be later uploaded into REDCap. Both surveys and databases (or a mixture of the two) can be built using these methods.

REDCap provides automated export procedures for seamless data downloads to Excel and common statistical packages (SPSS, SAS, Stata, R), as well as a built-in project calendar, a scheduling module, ad hoc reporting tools, and advanced features, such as branching logic, file uploading, and calculated fields.

Learn more about REDCap by watching a brief summary video (4 min). If you would like to view other quick video tutorials of REDCap in action and an overview of its features, please see the Training Resources page.

Please note that any publication that results from a project utilizing REDCap should cite grant support (UL1 TR000445 from NCATS/NIH).

NOTICE: If you are collecting data for the purposes of human subjects research, review and approval of the project is required by your Institutional Review Board.

If you require assistance or have any questions about REDCap, please contact REDCap Administrator.
REDCap User Guide

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NEED HELP? Visit the following FAQ page for help with Vanderbilt/Meharry user accounts and other common issues:
http://tinyurl.com/vandy-rc-faq
Resource page for Vanderbilt/Meharry users

Vanderbilt/Meharry REDCap Users FAQ

How to use this page

Welcome to the Vanderbilt/Meharry REDCap user FAQ space.

Several pages are displayed to the right, in the "Vanderbilt/Meharry User FAQ Pages" section. You may access the frequently asked questions (FAQ) about each specific topic by clicking on the links in that section or by clicking on the topic category below.

The current content of these pages falls into the following categories:

- Accessing REDCap: user access, login and account information, accessibility on mobile devices and offline
- Project Development: getting started, system security, survey-specific features
- Data Management: production mode, deleting and exporting data
- e-Consent: electronic consent forms for human subjects research
- Clinical Data Pull (CDP): automated import from eStar data; formerly known as DDP on FHIR
- Twilio Module: voice calling and text messaging services for surveys
- External Modules: background about unofficial add-ons available in local REDCap projects
- Help Resources
- User Guide

ROCKET
Powered by VANDERBILT
Generalized Support - REDCap Trainings

2 times/month on an ad hoc basis
• Beginner
• Intermediate/advanced

https://is.gd/REDCapTrainings
Individualized support - Email

redcap@Vanderbilt.edu

1-2 business days
Individualized support - REDCap Help Clinic

- 1st and 3rd Wednesdays
- 2nd and 4th Tuesdays

*Check the StarBRITE Education Calendar

2525 West End Ave
Forms development, special programming and other services available on a fee-for-service basis. Email datacore@vumc.org for more info.
REDCap Framework
• The framework into which your data will be entered
• Contains tools to manage your data
• Contains an instrument
<table>
<thead>
<tr>
<th>Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adding new Study ID Test2</strong></td>
</tr>
<tr>
<td><strong>Study ID</strong></td>
</tr>
<tr>
<td><strong>Contact Information</strong></td>
</tr>
<tr>
<td><strong>First Name</strong></td>
</tr>
<tr>
<td><strong>Last Name</strong></td>
</tr>
<tr>
<td><strong>Phone number</strong></td>
</tr>
<tr>
<td><strong>E-mail</strong></td>
</tr>
<tr>
<td><strong>Date of birth</strong></td>
</tr>
</tbody>
</table>
Data Entry Form - accessed by REDCap users

- **REDCap**
- **Example Research Study**
- **Actions:** Modify instrument, Download PDF of instrument(s)
- **Record ID:** 84
- **Contact Information**
  - **First Name**
  - **Last Name**
  - **Phone number**
  - **E-mail**
  - **Date of birth**
  - **Ethnicity**
    - Hispanic or Latino
    - NOT Hispanic or Latino
    - Unknown / Not Reported
  - **Race**
    - Male
    - Female
    - non-binary
  - **Gender**
  - **Has the patient given birth before?**
    - Yes
    - No
- **Screening information**
Survey - completed by a participant

Pain Management Survey - PRE

Please complete the survey below.

Thank you!

Are you in pain today?

- Yes
- No

What do you think about these medication features?

<table>
<thead>
<tr>
<th>Feature</th>
<th>1 Not important to me</th>
<th>2</th>
<th>3 Neutral</th>
<th>4</th>
<th>5 Very important to me</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pill size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pill form (tablet, capsule, etc.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How soon it takes effect</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How long the effect lasts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How many times in a day I have to take it</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Price</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

How has pain affected your life?

[Textbox]

Submit

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

<table>
<thead>
<tr>
<th>Record ID</th>
<th>Demographics</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>(Yellow, Yolanda)</td>
</tr>
<tr>
<td>78</td>
<td>(Purple, Patty)</td>
</tr>
<tr>
<td>79</td>
<td>(Red, Roger)</td>
</tr>
<tr>
<td>80</td>
<td>(Blue, Brad)</td>
</tr>
<tr>
<td>81</td>
<td>(Celery, Catherine)</td>
</tr>
<tr>
<td>82</td>
<td>(Azure, Aaron)</td>
</tr>
<tr>
<td>83</td>
<td>(Ecru, Ellie)</td>
</tr>
</tbody>
</table>
Data entry form

REDCap the Basics
Individualized Support

On your own

User Guide

Help & FAQ

(esp. Survey Wizard!)
Your role in a REDCap project

Design

Data entry

Viewing/Analyzing Data
Project Design

Creating a project

Adding and editing fields
Create a project

Create a new REDCap Project

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

**Project title:**
Title to be displayed on project webpage

**Purpose of this project:**
How will it be used?

---- Select One ----

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

Select from:
- Practice / Just for fun
- Operational Support
- Research
- Quality Improvement
- Other

Start project from scratch or begin with a template?

- Create an empty project (blank)
- Upload a REDCap project XML
- Use a template (choose one below)

Choose a project template (comes pre-filled with fields, forms, etc.)

- Front Screen (comes pre-filled with fields, forms, etc.)
- A Single Survey/drop of field
- A single data collection instrument enabled as a survey. Demonstrates the most frequently used features of REDCap.
- Survey Admin.
- Survey Admin (beta)
- Survey Admin (beta)
- Survey Admin (beta)
- Survey Admin (beta)

Logged in as red_0004
Research project

- Name of P.I. (if applicable): [ ]
- Email of P.I. (if applicable):
- Name of P.I. as cited in publications (if applicable): [ ] (e.g., Harris PA)
- VUnetID of P.I. (if applicable):
- IRB number (if applicable):
- Grant number (if applicable):

Please specify:
- Basic or bench research
- Clinical research study or trial
- Translational research 1 (applying discoveries to the development of trials and studies in humans)
- Translational research 2 (enhancing adoption of research findings and best practices into the community)
- Behavioral or psychosocial research study
- Epidemiology
- Repository (developing a data or specimen repository for future use by investigators)
- Other
• IRB approval required
• Electronic consent framework is available

(Resource page for Vanderbilt/Meharry users)
~20 templates: Surveys, consent forms, regulatory binders, employee training...
Design Data Collection Instruments

Design your data collection instruments. This may be done by either using the Online Designer (online method) or by uploading a Data Dictionary (offline method), in which you may use either method or both. Quick links: Download PDF of all data collection instruments or Download the current Data Dictionary.

Go to Online Designer or Data Dictionary.

You may also browse for pre-built data collection instruments in the REDCap Shared Library.

Have you checked the Check For Identifiers page to ensure all identifier fields have been tagged?
Record Identifier
Hands-on Demo

- Build a project - test Employee Directory
- Learn how to navigate your project pages
- Rename instrument in Online Designer
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:

--- Select a Type of Field ---
Text Box (Short Text, Number, Date/Time, ...)
Notes Box (Paragraph Text)
Calculated Field
Multiple Choice - Drop-down List (Single Answer)
Multiple Choice - Radio Buttons (Single Answer)
Checkboxes (Multiple Answers)
Yes - No
True - False
Signature (draw signature with mouse or finger)
File Upload (for users to upload files)
Slider / Visual Analog Scale
Descriptive Text (with optional Image/Video/Audio/File Attachment)
Begin New Section (with optional text)
What form will the answer be in?

How will the person entering the data enter the answer?
When possible, select a field type that will collect data in a quantitative manner

Provide a list of choices rather than asking an open-ended question

If alpha-numeric text, add validation when possible to restrict the type of text entered
Instead of open-ended (text box field type)...

...use close-ended (multiple-choice):
Quantitative questions will yield graphical and statistical results.

**With which institution are you affiliated?**

<table>
<thead>
<tr>
<th>Total Count (N)</th>
<th>Missing</th>
<th>Unique</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>8 (42.1%)</td>
<td>2</td>
</tr>
</tbody>
</table>

Counts/frequency:
- Vanderbilt University (3, 27.3%)
- Vanderbilt University Medical Center (8, 72.7%)
- Meharry Medical College (0, 0.0%)
When collecting this type of data...

Date
Email
Integer
Number
Phone (North America)
Time
Vanderbilt MRN
Zip code (US)
Instead of open-ended (text box field type)...

...use a text box field type with validation
BUT SOME FIELD TYPES ARE SIMILAR, THO...
Multiple Choice options

Field Type:

--- Select a Type of Field ---
Text Box (Short Text, Number, Date/Time, ...)
Notes Box (Paragraph Text)
Calculated Field
Multiple Choice - Drop-down List (Single Answer)
Multiple Choice - Radio Buttons (Single Answer)
Checkboxes (Multiple Answers)
True - False
Signature (draw signature with mouse or finger)
File Upload (for users to upload files)
Slider / Visual Analog Scale
Descriptive Text (with optional Image/Video/Audio/File Attachment)
Begin New Section (with optional text)
Radio buttons - short list of choices

With which institution are you affiliated?
- Vanderbilt University
- Vanderbilt University Medical Center
- Meharry Medical College

With which department are you affiliated?

How do you anticipate using REDCap?
- for databases
- for surveys
- for both surveys and databases

Do you anticipate designing/building a REDCap project?
- Yes
- No
Drop-down list:
Long list of choices

With which institution are you affiliated?
- Vanderbilt University
- Vanderbilt University Medical Center
- Meharry Medical College

With which department are you affiliated?

How do you anticipate using REDCap?

Do you anticipate designing/building a REDCap project?
(Some people only enter data into existing projects and are not involved with the design of the project)

Do you anticipate entering data into a REDCap project?
- Yes
- No

- Allergy Pulmonary Critical Medicine
- Allied Health
- Arts & Sciences
- Biomed Research Edu and Training
- Cardiovascular Medicine
- Eskind Biomedical Library
- Executive Health and Wellness
- Finance
- General Internal Medicine
- Genetic Medicine
- HealthIT Clin Group
- HealthIT VHAN Analysis
- Health Services Research Center
With which institution are you affiliated?
- Vanderbilt University
- Vanderbilt University Medical Center
- Meharry Medical College

With which department are you affiliated?

How do you anticipate using REDCap?
- for databases
- for surveys
- for both surveys and databases

Do you anticipate designing/building a REDCap project?
- Yes
- No
What REDCap topics would you like to see covered in future trainings?

- Action tags
- Piping
- Surveys
- Data Dictionary - when to use
- Using the Data Import Tool
- Optional Modules and Customizations
- Other
Group questions or provide information

Add New Field

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- Text Box (Short Text, Number, Date/Time, ...)
- Notes Box (Paragraph Text)
- Calculated Field
- Multiple Choice - Drop-down List (Single Answer)
- Multiple Choice - Radio Buttons (Single Answer)
- Checkboxes (Multiple Answers)
- Yes - No
- True - False
- Signature (draw signature with mouse or finger)
- File Upload (for users to upload files)
- Slider / Visual Analog Scale
- Descriptive Text (with optional Image/Video/Audio/File Attachment)
- Begin New Section (with optional text)
Screening information

Which of the following medications is being taken? (check all that apply)
- Lexapro
- Celexa
- Prozac
- Paxil
- Zoloft
- Other
- None of the above

consult the study protocol for other examples of meds we need to document!

Height (cm) 
(130-215)

Weight (kilograms) 
(35-200)

BMI

Is the participant currently ACTIVE on the study?
- Yes
- No

STOP!

This person is no longer on the study, so you need to cancel any remaining visits or surveys. Check the study protocol for detailed instructions. Enter the date below when you've completely finished with all their study close-out procedures.

Attachment: Study Protocol.docx (0.01 MB)

Date removed from study

Comments
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, ...)
- Notes Box (Paragraph Text)
- Calculated Field
- Multiple Choice - Drop-down List (Single Answer)
- Multiple Choice - Radio Buttons (Single Answer)
- Checkboxes (Multiple Answers)
- Yes - No
- True - False
- Signature (draw signature with mouse or finger)
- File Upload (for users to upload files)
- Slider / Visual Analog Scale
- Descriptive Text (with optional Image/Video/Audio/File Attachment)
- Begin New Section (with optional text)
Do you have any suggestions for changes to the presentation?

This could be:
- the order in which the material was presented
- material that could have been omitted
- material that should have been presented that wasn't length of the session, etc.
Field label = your question
Choices

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

Field Label:
With which institution are you affiliated?

Choices (one choice per line)
1. Vanderbilt University
2. Vanderbilt University Medical Center
3. Meharry Medical College

How do I manually code the choices?
Variable 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: Text Box (Short Text, Number, Date/Time, ...)

Field Label

Variable Name (utilized during data export)

Validation? (optional)

Enable searching within a biomedical ontology?

Required?*  ○ No  ○ Yes

Identifier?  ○ No  ○ Yes

Custom Alignment  Right / Vertical (RV)

Field Note (optional)
<table>
<thead>
<tr>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
</tr>
<tr>
<td>Fax number</td>
</tr>
<tr>
<td>Phone number</td>
</tr>
<tr>
<td>Email address</td>
</tr>
<tr>
<td>Account numbers</td>
</tr>
<tr>
<td>Social Security Number</td>
</tr>
<tr>
<td>Medical Record Number</td>
</tr>
<tr>
<td>Health Plan number</td>
</tr>
<tr>
<td>Certificate/license numbers</td>
</tr>
</tbody>
</table>
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

Variable Name (utilized during data export)

ONLY letters, numbers, and underscores

Enable auto naming of variable based upon its Field Label?

Validation? (optional) None

Enable searching within a biomedical ontology?

Required? No Yes

Custom Alignment Right / Vertical (RV)

Align the position of the field on the page

Field Note (optional)

Small reminder text displayed underneath field

Identifier? No Yes

Does the field contain identifying information (e.g., name, SSN, address)?
What is your favorite flavor of ice-cream?

- Chocolate
- Strawberry
- Vanilla
- Butter Pecan
- Mint Chocolate Chip

Check all that apply.
What is your favorite flavor ice cream?

- Chocolate
- Strawberry
- Vanilla
- Other

Please specify:
Apply Branching Logic to the follow-up question

Please specify:
Branching Logic Builder

Add/Edit Branching Logic

Branching Logic may be employed when fields/questions need to be hidden under certain conditions. If branching logic is defined, the field will only be visible if the conditions provided are true (i.e., show the field only if...). You may specify those conditions in the text box below for the Advanced Branching Logic Syntax or by choosing the Drag-N-Drop Logic Builder method, which allows you to build your logic in a much easier fashion by simply dragging over the options you want. You may switch back and forth between each method if you wish, but please be aware that since the advanced logic allows for greater complexity, it may not be able to be switched over to the Drag-N-Drop method if it becomes too complex.

Choose method below for the following field: otherflavor - Please specify:

- Advanced Branching Logic Syntax
  - How to use: [Branching Logic] [Smart Variables]
  - Show the field ONLY if...
  - Test logic with a record: -- select record --

- OR -

- Drag-N-Drop Logic Builder
  - Field choices from other fields
    - participant_id = (define criteria)
    - name = (define criteria)
    - flavor = Chocolate (1)
    - flavor = Strawberry (2)
    - flavor = Vanilla (3)
    - flavor = Other (4)
    - title = (define criteria)
    - registrationdate = (define criteria)

  - Show the field ONLY if...
    - ALL below are true
    - ANY below are true

Drag and Drop
Field choices from other fields
(drag a choice below to box on right)

- participant_id = (define criteria)
- name = (define criteria)
- flavor = Chocolate (1)
- flavor = Strawberry (2)
- flavor = Vanilla (3)
- flavor = Other (4)

Variable: othericecream
Branching logic: [flavor] = '4'

Please specify:
• Employee name
• Employment status
• Employee email address
• Name of employee’s supervisor
Entering Data
Data Entry Form - accessed by REDCap users
Clinical Data Pull
Resource page for Vanderbilt/Meharry users

Vanderbilt/Meharry REDCap Users FAQ

How to use this page

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- **Clinical Data Pull (CDP)**: automated import from eStar data; formerly known as DDP on FHIR
- **External Modules**: voice calling and text messaging services for surveys
- **Help Resources**
- **User Guide**
Before you do that...
Test your project thoroughly

It is important to test the essential components of your project before moving it into production. Try creating a few test records and entering some data for each to ensure that your data collection instruments look and behave how you expect, especially branching logic and calculations. Then review your test data by creating reports and exporting your data to view in Excel or a statistical analysis package. If you have surveys, complete the surveys as if you were a participant by using the Public Survey Link or Participant List by sending a survey invitation to yourself. If other project modules will be used regularly, test them out a bit too. The best way to test your project is to use it as if you were entering real production data, and it is always helpful to have colleagues (especially team members) take a look at your project to get a fresh set of eyes looking at it.
Enter test data!
Why enter test data?

<table>
<thead>
<tr>
<th>With which institution are you affiliated?</th>
<th>inst</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vandy</td>
<td></td>
</tr>
<tr>
<td>VUMC</td>
<td></td>
</tr>
<tr>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>Vanderbilt</td>
<td></td>
</tr>
<tr>
<td>Med Ctr</td>
<td></td>
</tr>
<tr>
<td>Vanderbilt University Medical</td>
<td></td>
</tr>
<tr>
<td>Vandy</td>
<td></td>
</tr>
<tr>
<td>VUMC</td>
<td></td>
</tr>
<tr>
<td>VU</td>
<td></td>
</tr>
<tr>
<td>Vanderbilt University</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Today’s date</th>
<th>regdate</th>
</tr>
</thead>
<tbody>
<tr>
<td>12/6/2018</td>
<td></td>
</tr>
<tr>
<td>December 4, 2018</td>
<td></td>
</tr>
<tr>
<td>December 8, 2018</td>
<td></td>
</tr>
<tr>
<td>8/12/2018</td>
<td></td>
</tr>
<tr>
<td>08-12-2018</td>
<td></td>
</tr>
<tr>
<td>December</td>
<td></td>
</tr>
</tbody>
</table>
Add a test record

Add / Edit Records

You may view an existing record/response by selecting it from the drop-down lists below. To create a new record, click the button below.

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

Total records: 7

Choose an existing Record ID

--- select record ---

Add new record

Data Search

Choose a field to search
(excludes multiple choice fields)

All fields

Search query

Begin typing to search the project data, then click an item in the list to navigate to that record.
### Baseline Data

**Study ID**: asdf345

<table>
<thead>
<tr>
<th>Date of baseline visit</th>
<th>Date blood was drawn</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Serum Albumin (g/dL)</th>
<th>Serum Prealbumin (mg/dL)</th>
<th>Creatinine (mg/dL)</th>
<th>Normalized Protein Catabolic Rate (g/kg/d)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cholesterol (mg/dL)</th>
<th>Transferrin (mg/dL)</th>
<th>Kt/V</th>
<th>Dry weight (kilograms)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Subject Global Assessment (score = 1-7)

Date patient begins supplement

Form Status

Complete?  

[Save & Exit Form] [Save & Stay]
Online Designer view of instrument

Baseline Measurements

<table>
<thead>
<tr>
<th>Variable: date_visit_b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of baseline visit</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable: date_blood_b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date blood was drawn</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable: alb_b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum Albumin (g/dL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable: prealb_b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Serum Prealbumin (mg/dL)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Variable: creat_b</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creatinine (mg/dL)</td>
</tr>
</tbody>
</table>
Data Entry

- You can use the tab key to move from one question to the next.
- Validation will force you to enter data in a specific way.
- Branching logic will determine what questions you see.
- Required questions force you to enter an answer for those questions in order to save.
- Each entry creates a record.
Hands-on Demo

Add test data to your project
Viewing Data

- Individual records
- Aggregate Data
- Sub-sets of Data
Record Status Dashboard

Record Status Dashboard (all records)

Displayed below is a table listing all existing records/responses and their status for every data 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 your group.

Dashboard displayed: [Default dashboard]

Displaying record: Page 1 of 1: "77" through "83" of 7 records

+ Add new record

Displaying: Instrument status only | Lock status only | All status types

<table>
<thead>
<tr>
<th>Record ID</th>
<th>Demographics</th>
<th>Baseline Data</th>
<th>Pain Management Survey - PRE</th>
<th>Intervention Data</th>
<th>Pain Management Survey - POST</th>
<th>Study Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>77</td>
<td>Yellow</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>78</td>
<td>Purple</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td>Blue</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>81</td>
<td>Celery</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>82</td>
<td>Azure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>83</td>
<td>Ecru</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mouse cursor.
Add / Edit Records

You may view an existing record/response by selecting it from the drop-down lists below. To create a new record, click the 'Add new record' button below.

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

Total records: 7

Choose an existing Record ID

[Select record]

Data Search

Choose a field to search
(excludes multiple choice fields)

[All fields]

Search query

Begin typing to search the project data, then click an item in the list to navigate to that record.

Contact REDCap administrator
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

Study ID **EKG543** (Yellow, Yolanda)

<table>
<thead>
<tr>
<th>Data Collection Instrument</th>
<th>Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td></td>
</tr>
<tr>
<td>Baseline Data</td>
<td></td>
</tr>
<tr>
<td>Pain Management Survey - PRE (survey)</td>
<td>![Green Circle]</td>
</tr>
<tr>
<td>Intervention Data</td>
<td>![Green Circle]</td>
</tr>
<tr>
<td>Pain Management Survey - POST (survey)</td>
<td>![Green Circle]</td>
</tr>
<tr>
<td>Study Completion</td>
<td>![Green Circle]</td>
</tr>
<tr>
<td><strong>Baseline Data</strong></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td></td>
</tr>
<tr>
<td><strong>Study ID</strong></td>
<td>EKG543</td>
</tr>
<tr>
<td><strong>Baseline Measurements</strong></td>
<td></td>
</tr>
<tr>
<td>Date of baseline visit</td>
<td>2019-01-01</td>
</tr>
<tr>
<td>Date blood was drawn</td>
<td>2019-01-01</td>
</tr>
<tr>
<td>Serum Albumin (g/dL)</td>
<td>3</td>
</tr>
<tr>
<td>Serum Prealbumin (mg/dL)</td>
<td>15</td>
</tr>
<tr>
<td>Creatinine (mg/dL)</td>
<td>1</td>
</tr>
<tr>
<td>Normalized Protein Catabolic Rate (g/kg/d)</td>
<td>1</td>
</tr>
<tr>
<td>Cholesterol (mg/dL)</td>
<td>120</td>
</tr>
<tr>
<td>Transferrin (mg/dL)</td>
<td>110</td>
</tr>
<tr>
<td>Kt/V</td>
<td>2</td>
</tr>
<tr>
<td>Dry weight (kilograms)</td>
<td>110</td>
</tr>
<tr>
<td>Collected Plasma 1?</td>
<td>Yes</td>
</tr>
<tr>
<td>Collected Plasma 2?</td>
<td></td>
</tr>
<tr>
<td>Collected Plasma 3?</td>
<td></td>
</tr>
<tr>
<td>Collected Serum 1?</td>
<td>Yes</td>
</tr>
<tr>
<td>Collected Serum 2?</td>
<td></td>
</tr>
<tr>
<td>Collected Serum 3?</td>
<td></td>
</tr>
<tr>
<td>Subject Global Assessment (score = 1-7)</td>
<td>4</td>
</tr>
<tr>
<td>Date patient begins supplement</td>
<td>2019-01-10</td>
</tr>
<tr>
<td><strong>Form Status</strong></td>
<td></td>
</tr>
<tr>
<td>Complete?</td>
<td>Complete</td>
</tr>
</tbody>
</table>
Viewing multiple records

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

### My Reports & Exports

<table>
<thead>
<tr>
<th>Report name</th>
<th>View/Export Options</th>
<th>Management Options</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> All data (all records and fields)</td>
<td><img src="image" alt="View Report" /> <img src="image" alt="Export Data" /> <img src="image" alt="Stats &amp; Charts" /></td>
<td><img src="image" alt="Make custom selections" /></td>
</tr>
<tr>
<td><strong>B</strong> Selected instruments (all records)</td>
<td><img src="image" alt="View Report" /></td>
<td><img src="image" alt="Make custom selections" /></td>
</tr>
</tbody>
</table>
### Aggregate Data (all data)

**Number of results returned:** 11  
**Total number of records queried:** 11

#### All data (all records and fields)

<table>
<thead>
<tr>
<th>Study ID</th>
<th>Survey Identifier</th>
<th>First Name</th>
<th>Last Name</th>
<th>Phone number</th>
<th>Email</th>
<th>Date of Birth</th>
<th>Ethnicity</th>
<th>Race</th>
<th>Has the patient given birth before?</th>
<th>How many times has the patient given birth?</th>
<th>num. children</th>
<th>Which of the following medications is being taken? (check all that apply)</th>
<th>What other meds are being taken?</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALB242</td>
<td>(Red, Rudy)</td>
<td>Rudy</td>
<td>Red</td>
<td></td>
<td></td>
<td></td>
<td>Hispanic or Latino (0)</td>
<td>Asian (1)</td>
<td>Unchecked</td>
<td>Unchecked</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
<tr>
<td>FKS431</td>
<td>(Yellow, Yolanda)</td>
<td>Yolanda</td>
<td>Yellow</td>
<td></td>
<td></td>
<td></td>
<td>NOT Hispanic or Latino (1)</td>
<td>American Indian/Alaska Native (0)</td>
<td>Unchecked</td>
<td>Unchecked</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
<tr>
<td>FD4232</td>
<td>(Purple, Polly)</td>
<td>Polly</td>
<td>Purple</td>
<td></td>
<td></td>
<td></td>
<td>NOT Hispanic or Latino (1)</td>
<td>American Indian/Alaska Native (0)</td>
<td>Yes (1)</td>
<td>2</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
<tr>
<td>HW293</td>
<td>(Violet, Vicky)</td>
<td>Vicky</td>
<td>Violet</td>
<td></td>
<td></td>
<td></td>
<td>Hispanic or Latino (0)</td>
<td>American Indian/Alaska Native (0)</td>
<td>Unchecked</td>
<td>Unchecked</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
<tr>
<td>IC224</td>
<td>(Green, Grace)</td>
<td>Grace</td>
<td>Green</td>
<td>(615) 444-3232</td>
<td><a href="mailto:gfds@fjdka.biz">gfds@fjdka.biz</a></td>
<td>1955-09-01</td>
<td>Hispanic or Latino (0)</td>
<td>American Indian/Alaska Native (0)</td>
<td>Yes (1)</td>
<td>2</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
<tr>
<td>IWE45</td>
<td>(Orange, Olivia)</td>
<td>Olivia</td>
<td>Orange</td>
<td></td>
<td></td>
<td></td>
<td>Unknown / Not Reported (2)</td>
<td>Native Hawaiian or Other Pacific Islander (2)</td>
<td>Yes (1)</td>
<td>2</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
<tr>
<td>KDH435</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>NOT Hispanic</td>
<td>Black or</td>
<td>Unchecked</td>
<td>Unchecked</td>
<td></td>
<td>Lexapro &lt;emed_1&gt;</td>
<td>Celexia &lt;emed_2&gt;</td>
</tr>
</tbody>
</table>
Sub-sets of Data

Example Research Study

Data Exports, Reports, and Stats

Create New Report

My Reports

Number of results returned: 4
Total number of records queried: 7

Female participants

<table>
<thead>
<tr>
<th>Record ID</th>
<th>First Name</th>
<th>Last Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>81</td>
<td>Celery</td>
<td>Catherine</td>
</tr>
<tr>
<td>83</td>
<td>Ecru</td>
<td>Ellie</td>
</tr>
<tr>
<td>78</td>
<td>Purple</td>
<td>Patty</td>
</tr>
<tr>
<td>77</td>
<td>Yellow</td>
<td>Yolanda</td>
</tr>
</tbody>
</table>
Create a custom report

**Step 1:**
User Access: Choose who can edit and view this report
- **View Access:** Choose who sees this report on their left-hand project menu.
  - **All users** OR **Custom user access** (Choose specific users, roles, or data access groups who will have access)
- **Edit Access:** Choose who can edit, copy, or delete this report (requires user to have Add/Edit/Organize Reports' privileges)
  - **All users** OR **Custom user access** (Choose specific users, roles, or data access groups who will have access)

**Step 2:**
Fields to include in report

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Field 1</td>
<td>record_id &quot;Record ID&quot;</td>
</tr>
<tr>
<td>Field 2</td>
<td>first_name &quot;First Name&quot;</td>
</tr>
<tr>
<td>Field 3</td>
<td>last_name &quot;Last Name&quot;</td>
</tr>
<tr>
<td>Field 4</td>
<td>Type variable name or field label</td>
</tr>
</tbody>
</table>

**Additional report options (optional):**
- Include the survey identifier field and survey timestamp field(s)?
- Combine checkbox options into single column of only the checked-off options (will be formatted as a test field when exported to stats packages)

**Step 3:**
Filters (optional)

<table>
<thead>
<tr>
<th>Filter 1</th>
<th>Operator / Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>gender &quot;Gender&quot;</td>
<td>= Female</td>
</tr>
</tbody>
</table>

**Live Filters (optional):**
Live Filters can be selected on the report page for dynamically filtering data in real time. With the exception of the Record ID field, only multiple choice fields can be used as Live Filters (as well as Events, if longitudinal, and Data Access Groups, if any exist).

**Step 4:**
Order the Results (optional)

<table>
<thead>
<tr>
<th>First by</th>
<th>Operator / Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>last_name &quot;Last Name&quot;</td>
<td>Ascending order</td>
</tr>
<tr>
<td>Then by</td>
<td>Ascending order</td>
</tr>
<tr>
<td>Then by</td>
<td>Ascending order</td>
</tr>
</tbody>
</table>
Reports are bookmarked on the navigation bar
Statistics and Graphs/Charts

**Gender**

- Total Count (N): 30
- Missing: 0 (0.0%)
- Unique: 2

Counts/Frequency: Male (19, 63.3%), Female (11, 36.7%), Other (0, 0.0%)

**Height < 150**

**DISPLAY OPTIONS**

Optional: Select a record to overlay onto the plots below

**Viewing options:** Show plots & stats, Show plots only, Show stats only

**Height**

- Total Count (N): 30
- Missing: 0 (0.0%)
- Unique: 2

Counts/Frequency: Male (19, 63.3%), Female (11, 36.7%), Other (0, 0.0%)

**Height Distribution**

- Mean: 10.13
- StDev: 1.357
- Sum: 135.70

<table>
<thead>
<tr>
<th>Percentile</th>
<th>0.05</th>
<th>0.10</th>
<th>0.25</th>
<th>0.50 Median</th>
<th>0.75</th>
<th>0.90</th>
<th>0.95</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>121.35</td>
<td>122.70</td>
<td>127.25</td>
<td>137.00</td>
<td>144.50</td>
<td>145.30</td>
<td>146.65</td>
</tr>
</tbody>
</table>

Lowest values: 120, 123, 125, 134

Highest values: 140, 143, 145, 146
Select your export settings, which includes the export format (Excel/CSV, SAS, SPSS, R, Stata) and whether or not to perform de-identification on the data set.

Choose export format:
- CSV / Microsoft Excel (raw data)
- CSV / Microsoft Excel (labels)
- SPSS Statistical Software
- SAS Statistical Software
- R Statistical Software
- STATA Statistical Software

De-identification options (optional):
The options below allow you to limit the amount of sensitive information that you are exporting out of the project. Check all that apply.

Known Identifiers:
- Remove all tagged identifier fields (tagged in Data Dictionary)
- Hash the Record ID field (converts record name to an unrecognizable value)

Free-form text:
- Remove unvalidated Text fields (i.e. Text fields other than dates, numbers, etc.)
- Remove Notes/Essay box fields

Date and datetime fields:
- Remove all date and datetime fields
- OR
- Shift all dates by value between 0 and 364 days (shifted amount determined by algorithm for each record)
Viewing and exporting reports is a great way to TEST YOUR PROJECT
Hands-on Demo

View data

Create Custom Report
Collaborating in REDCap
Project Access
User Rights

This page may be used for granting users access to this project and for managing the user privileges of those users. You can also create roles to which you may assign users (optional). User roles are useful when you will have several users with similar privileges because they allow you to easily add many users to a role in a much faster manner than setting their user privileges individually. Roles are also a nice way to categorize users within a project. In the box below you may add/assign users, new roles, and the table at the bottom allows you to make modifications to any existing user or role in the project, as well as a glimpse of their user privileges.
Two quick notes:

1. To request an external user account (for someone outside Vanderbilt/Meharry), see instructions in User Guide
2. A REDCap administrator can create a REDCap account for someone, but it is the USER who adds their colleagues to the project
Defining Access Level

**Basic Rights**
- Project Design and Setup
- User Rights
- Data Access Groups

**Data Entry Rights**
- Highest level privileges:
  - Project Design and Setup
  - User Rights
  - Data Access Groups
- Privileges for data exports (including PDFs and API exports reports, and stats):
  - Data Exports
    - De-identified means that all free-form text fields will be removed, as well as any date/time fields and identifier fields.
  - Add/Edit/Organize Reports
    - Also allows user to view ALL reports (but not necessarily all data in the reports)
  - Stats & Charts
- Other privileges:
  - Survey Distribution Tools
  - Calendar
  - Data Import Tool
  - Data Comparison Tool
  - Logging
  - File Repository

**Data Entry Rights**
- Data Entry Rights map to a user’s ability to view or edit data on a webpage in REL Cap (e.g., data entry forms, imports or data exports). It has no effect on data collection.

<table>
<thead>
<tr>
<th>Data Entry Rights</th>
<th>No Access</th>
<th>Read Only</th>
<th>View &amp; Edit</th>
<th>Edit survey responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baseline Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey - PRE (survey)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intervention Data</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pain Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Survey - POST (survey)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study Completion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**New User Notification**
- Notify user of their project access via email?
The case for multiple instruments

| NOTE: The data entry rights *only* pertain to a user’s ability to view or edit data on a web page in REDCap (e.g., data entry forms, reports). It has no effect on data imports or data exports. |
|---|---|---|---|
| **Camper Application** (survey) | No Access | Read Only | View & Edit | Edit survey responses |
| **Camper application review** | | | | |
| **Scholarship Application** (survey) | | | | |
| **Scholarship Review** | | | | |
| **Follow-Up Survey: Medical Information** (survey) | | | | |
| **Nurse’s Notes** | | | | |
Adding team members to the project to enter test data/view data is a great way to TEST YOUR PROJECT.
Safeguarding your data
Production mode puts into place safeguards to protect your real data against loss or damage.
After moving to Production

1. Move project to production
2. Add real data
3. View data
Later stages of a project

Design

Editing/

Adding

instrument(s)

View Data

Add test/real data
Making changes in Production

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

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

Enter Draft Mode

The Online Designer will allow you to make project modifications to fields and data collection instruments very easily using only your web browser. In order to make any modifications to your instruments listed below, you must first move the project into Draft Mode by clicking the 'Enter Draft Mode' button above. However, whether in Draft Mode or not, you are allowed to download the PDF or modify survey settings for any instruments below.
Submitting changes
final thoughts
Become a REDCap Mentor!
# Upcoming Events — please tell your colleagues!

<table>
<thead>
<tr>
<th>Name</th>
<th>Date</th>
<th>Time</th>
<th>Location</th>
<th>Registration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Put the CAP in REDCap</td>
<td>Thursday, May 30</td>
<td>9:30 am – 11:00 am</td>
<td>Eskind Library</td>
<td>Required: <a href="https://is.gd/REDCapTrainings">https://is.gd/REDCapTrainings</a></td>
</tr>
<tr>
<td>REDCap Basics+</td>
<td>Tuesday, June 4</td>
<td>9:30 am – 11:30 am</td>
<td>Eskind Library</td>
<td>Required: <a href="https://is.gd/REDCapTrainings">https://is.gd/REDCapTrainings</a></td>
</tr>
<tr>
<td>REDCap eStar Integration and Use</td>
<td>Friday, June 7</td>
<td>7-8 am OR 3-4 pm</td>
<td>Medical Center North</td>
<td>Required: <a href="http://j.mp/2RZf4Sh">http://j.mp/2RZf4Sh</a></td>
</tr>
</tbody>
</table>
Sign in if you haven’t already!
These slides were adapted from a presentation developed by REDCap Administrator Julissa Acevedo of the University of Chicago and include content from REDCap administrator Jeff Hawley/Duke University.