

REDCap Data Entry User’s Guide & Reference Manual

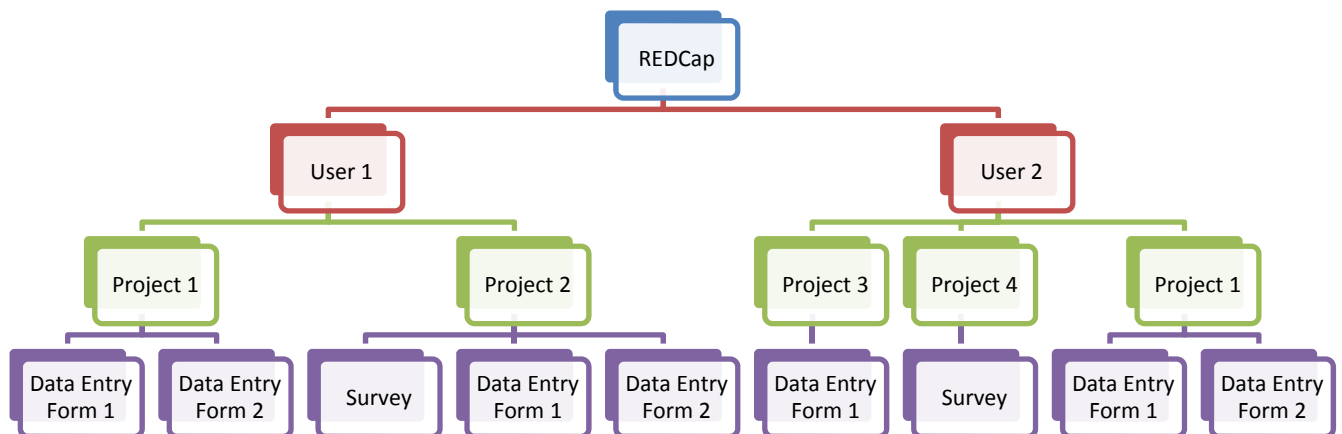
Welcome to REDCap!

REDCap is a secure, web-based application for managing your clinical data. This document will review the basic principles of data entry in REDCap.

REDCap structure and terminology

REDCap is a database application that provides access on a project-by-project basis as determined by the Principal Investigator. Each project may have many users; each user may have many projects. Users will only see projects listed in their My Projects page for which they have access.

Please note in the below hierarchical chart, User 1 and User 2 both have access to Project 1, however User 2 does not have access to Project 2, etc.



Data Instrument – a form created for the purposes of capturing data such as a data entry form or survey.

Record – a complete set of information for a person or object. Each record is composed of one or more fields.

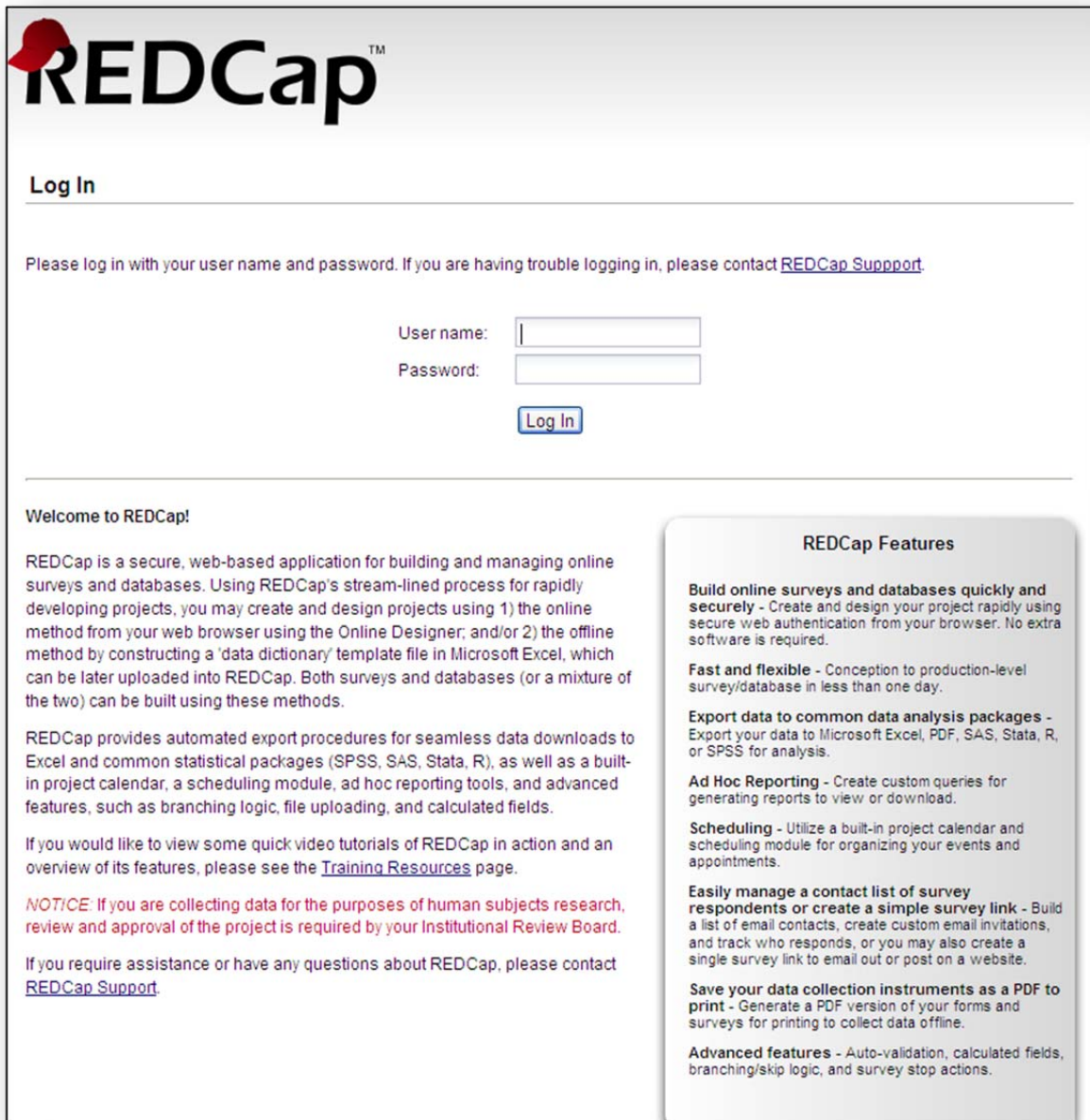
Study ID – a unique key that can identify each record in the database

Event – a scheduled or unscheduled occurrence for which data is captured using a predefined data instrument (form)

Form Status – status of the form completeness and denoted with a color; red – incomplete; yellow – unverified; green – complete. The meaning of the status values are determined by the study team.

Logging Into REDCap

Open a browser (Google Chrome recommended) and enter the following URL in the address line: <https://redcap.njhealth.org/redcap>. Enter your username and password provided to you when you were given access to REDCap as seen in Figure 1.

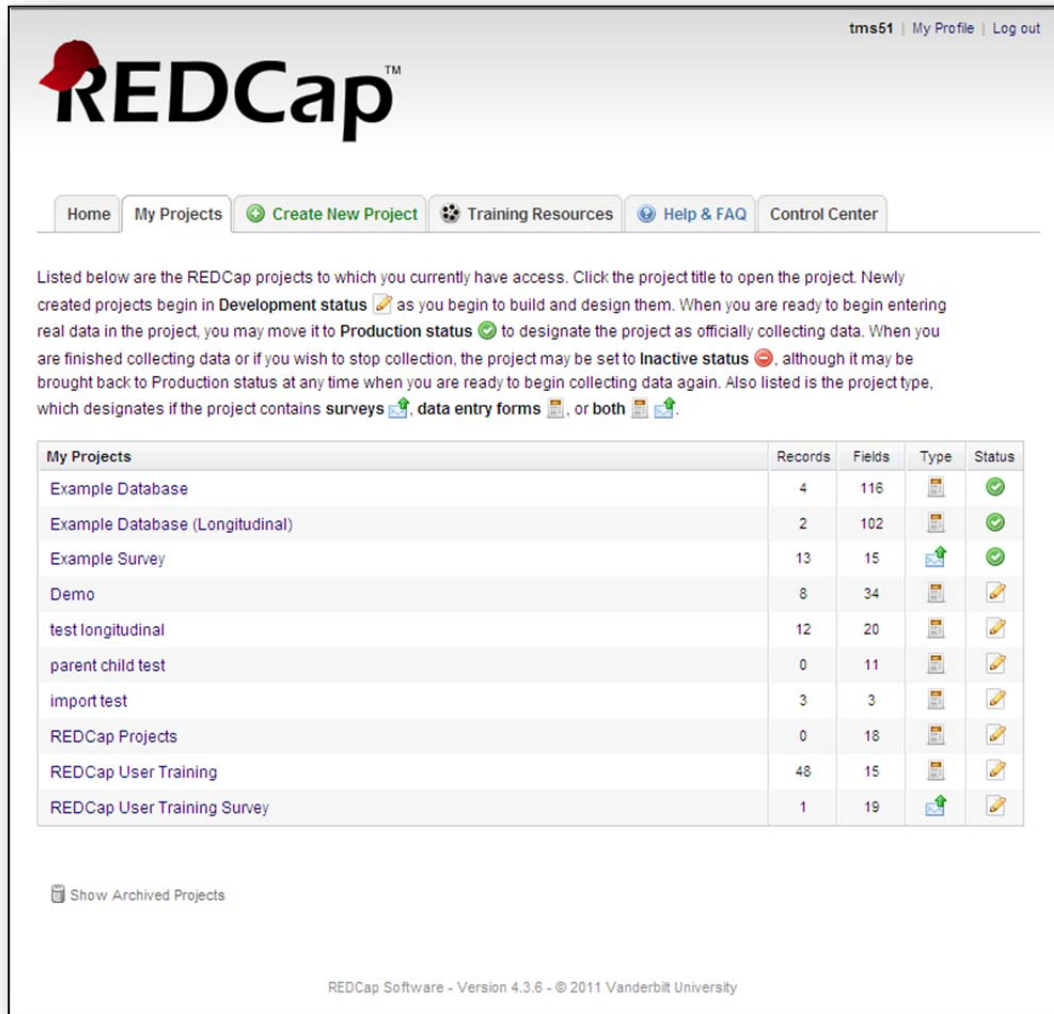


The screenshot shows the REDCap login interface. At the top left is the REDCap logo. Below it is a 'Log In' section with a horizontal line. A message reads: 'Please log in with your user name and password. If you are having trouble logging in, please contact [REDCap Support](#).' Below this are two input fields: 'User name:' and 'Password:'. A 'Log In' button is positioned below the password field. A horizontal line separates the login section from the main content area. The main content area is divided into two columns. The left column contains a 'Welcome to REDCap!' section with a paragraph describing the application, a paragraph about export procedures, a paragraph about video tutorials, and a 'NOTICE' regarding human subjects research. The right column contains a 'REDCap Features' section with a list of features: 'Build online surveys and databases quickly and securely', 'Fast and flexible', 'Export data to common data analysis packages', 'Ad Hoc Reporting', 'Scheduling', 'Easily manage a contact list of survey respondents or create a simple survey link', 'Save your data collection instruments as a PDF to print', and 'Advanced features'.

Figure 1

Accessing Your Project

From the REDCap Home Screen select the **My Projects** tab to see a list of projects you are authorized to access (Figure 2). Click on the link to the database for which you will be entering data. The screen displays database information about current users and other database statistics (Figure 3).



The screenshot shows the REDCap interface with the 'My Projects' tab selected. A navigation bar includes 'Home', 'My Projects', 'Create New Project', 'Training Resources', 'Help & FAQ', and 'Control Center'. Below the navigation bar is a descriptive paragraph about project statuses: Development, Production, and Inactive. A table lists various projects with their respective records, fields, types, and statuses.

My Projects	Records	Fields	Type	Status
Example Database	4	116		
Example Database (Longitudinal)	2	102		
Example Survey	13	15		
Demo	8	34		
test longitudinal	12	20		
parent child test	0	11		
import test	3	3		
REDCap Projects	0	18		
REDCap User Training	48	15		
REDCap User Training Survey	1	19		

At the bottom left of the table area, there is a link: Show Archived Projects. At the bottom center, the footer reads: REDCap Software - Version 4.3.6 - © 2011 Vanderbilt University.

Figure 2

Data Collection Types

There are two project types:

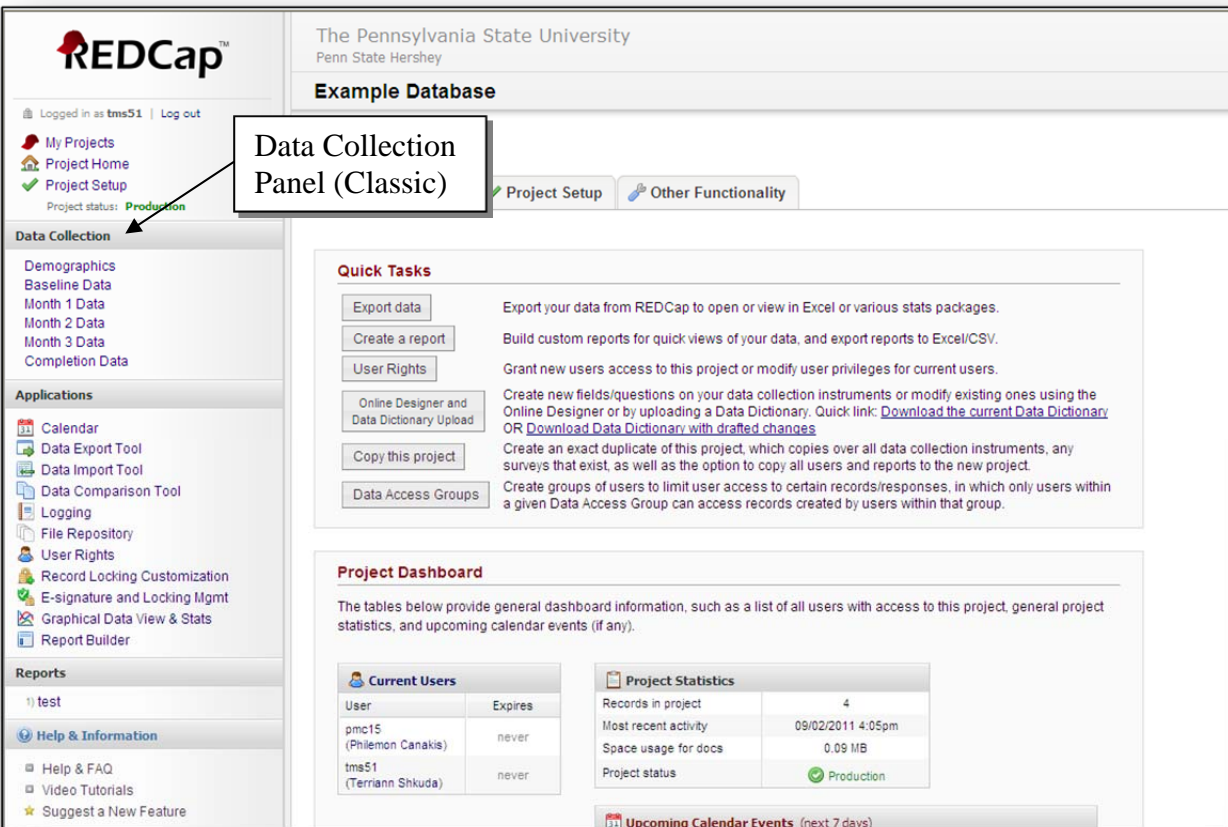
- **Classic** – each form is used once for each participant.
- **Longitudinal** - each form may be used one or more times for each participant and each instance of the form is assigned to an event (i.e., Visit Blood Workup form is used on the 1st, 3rd and last visit). The Scheduling Module may be used to schedule a participant on the study and identify the data forms to use at each event.

The Data Collection panel will appear different depending on the data collection type (Classic or Longitudinal). For the Classic type, the data instruments (forms) are listed in the panel. For the Longitudinal type, the instruments are listed in an event grid, see Figure 6 below for that view.

A new record may only be created in the first data instrument listed in the Data Collection panel.

Classic Data Collection Type

In the left column, choose the data instrument (form) in the **Data Collection** section (i.e., **Demographics**) to begin your data entry process as shown in Figure 3. This will take you to the data instrument (Figure 4) to create a new record or enter data for an existing record in the database.



The screenshot shows the REDCap interface for 'The Pennsylvania State University' project. The left sidebar contains a 'Data Collection' section with a list of instruments: Demographics, Baseline Data, Month 1 Data, Month 2 Data, Month 3 Data, and Completion Data. A blue arrow points to this section, which is also highlighted by a box and labeled 'Data Collection Panel (Classic)'. The main content area includes 'Quick Tasks' (Export data, Create a report, User Rights, Online Designer and Data Dictionary Upload, Copy this project, Data Access Groups) and a 'Project Dashboard' with 'Current Users' and 'Project Statistics' tables.

User	Expires
pmc15 (Philemon Canakis)	never
tms51 (Terriann Shkuda)	never

Records in project	4
Most recent activity	09/02/2011 4:05pm
Space usage for docs	0.09 MB
Project status	Production

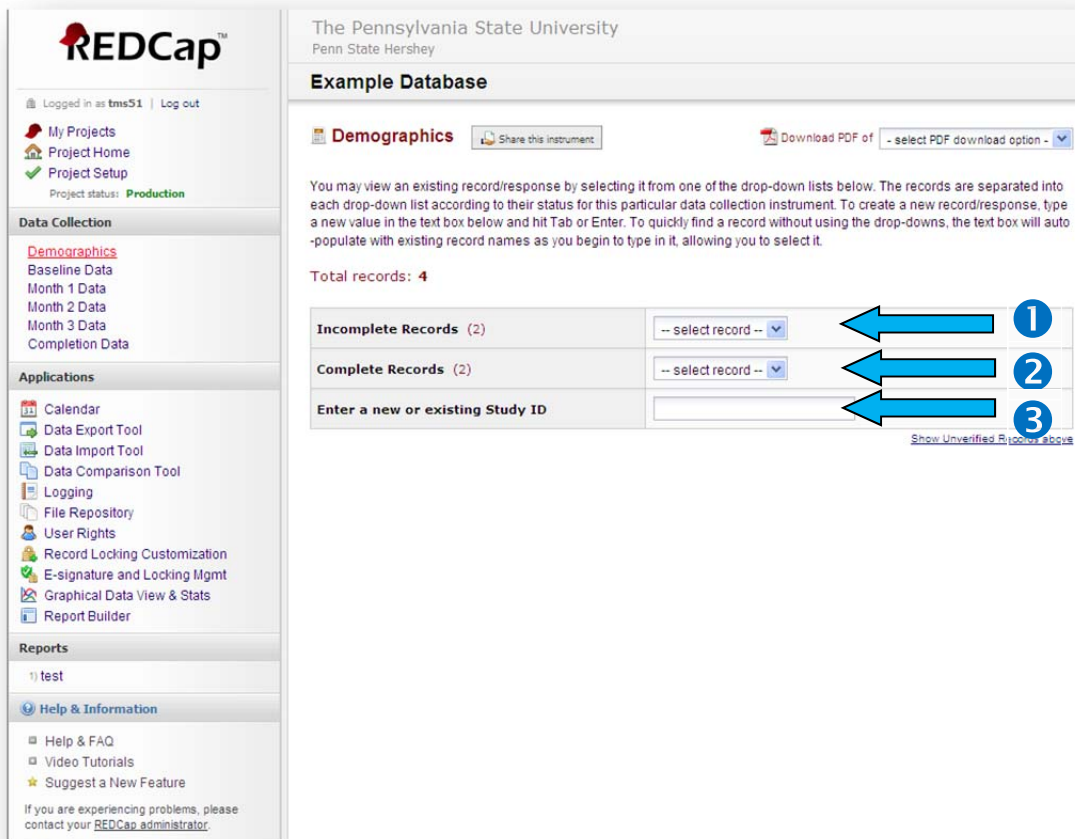
Figure 3

Classic Type: Adding/Selecting a Record

You may wish to update an existing record or create a new record. In Figure 4, you have four options to enter data:

1. Updating an incomplete or unverified record by selecting the record from the drop down box as seen in #1 below
2. Updating a complete record by selecting the record from the dropdown box as seen in #2 below
3. Entering a specific record number in #3 below to update the record
4. Entering a new record number (Study ID) in #3 below.

REDCap checks that the Study ID you entered is unique before creating a new record. If the Study ID already exists, the form for that record will appear. If the Study ID does not exist, a new record is created and the data form appears.

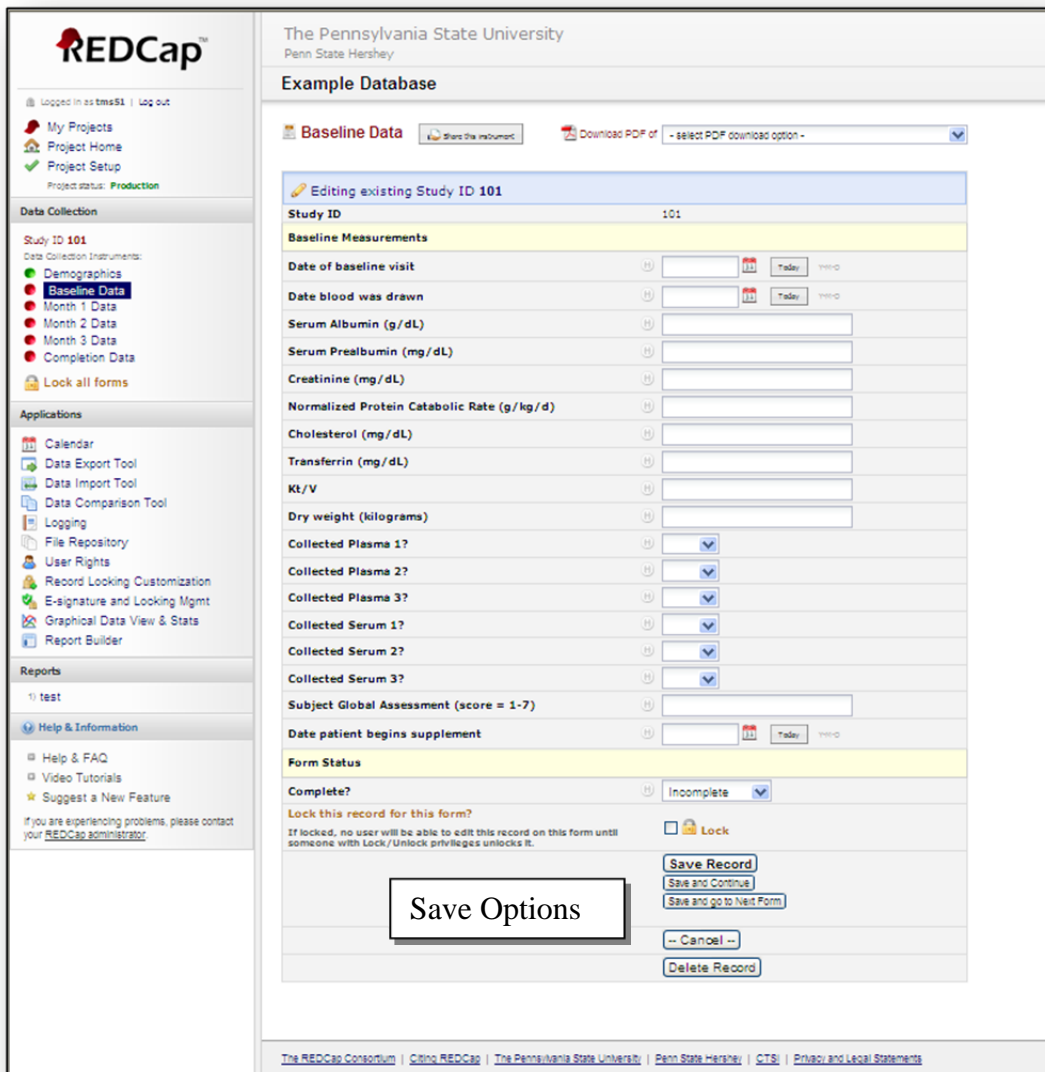


The screenshot shows the REDCap interface for 'The Pennsylvania State University Penn State Hershey' and 'Example Database'. The main content area displays the 'Demographics' instrument with a table of records. The table has three rows: 'Incomplete Records (2)', 'Complete Records (2)', and 'Enter a new or existing Study ID'. The first two rows have dropdown menus for selecting records. The third row has a text input field. Three blue arrows point to these elements, labeled 1, 2, and 3. A 'Show Unverified Records above' link is visible at the bottom right of the table.

Figure 4

Once you have completed entering the information, you **MUST** click one of the save option buttons at the bottom of the screen. See Figure 5. The Form Status section will allow you to identify if the record is Incomplete, Unverified or Complete. If you have locking and/or e-signature rights, you may choose to lock the form and/or e-sign the form.

- Save Record – saves the data and returns to the record selection screen for the current form.
- Save and Continue - saves the record and remains on the form for the same Study ID.
- Save and go to Next Form – saves and navigates to the next form on the list for the study ID.



The screenshot shows the REDCap interface for 'Example Database' at Penn State Hershey. The main content area displays the 'Baseline Data' form for 'Study ID 101'. The form is titled 'Editing existing Study ID 101' and contains several data entry fields under 'Baseline Measurements':

- Date of baseline visit
- Date blood was drawn
- Serum Albumin (g/dL)
- Serum Prealbumin (mg/dL)
- Creatinine (mg/dL)
- Normalized Protein Catabolic Rate (g/kg/d)
- Cholesterol (mg/dL)
- Transferrin (mg/dL)
- Kt/V
- Dry weight (kilograms)
- Collected Plasma 1?
- Collected Plasma 2?
- Collected Plasma 3?
- Collected Serum 1?
- Collected Serum 2?
- Collected Serum 3?
- Subject Global Assessment (score = 1-7)
- Date patient begins supplement

At the bottom of the form, the 'Form Status' section is highlighted with a box labeled 'Save Options'. It includes a dropdown menu for 'Complete?' set to 'Incomplete', a 'Lock this record for this form?' checkbox, and several buttons: 'Save Record', 'Save and Continue', 'Save and go to Next Form', 'Cancel', and 'Delete Record'.

Figure 5

Longitudinal Type: Adding/Selecting a Record

Event Grid: The Event Grid (Figure 6) is a graphical representation of which data entry forms will be completed at each event. The data entry forms are listed down the left column and the events are listed across the top of the grid. The individual forms are represented by colored buttons. The color of the button represents the status of the form: red for incomplete, yellow for unverified, and green for complete.

If you want to navigate through the record for this subject, click on the buttons to select the form you want to see. The Event Grid in Figure 6 illustrates that the Demographic form is completed at the first event and the Contact Info form is unverified at the first event. In this example, both the Demographics, Contact Info and Baseline Data forms are scheduled for the first event (Enrollment).

The screenshot shows the REDCap interface for 'The Pennsylvania State University Penn State Hershey' and 'Example Database (Longitudinal)'. The 'Data Entry: Event Grid' section displays the progress for 'Study ID 1'.

Events for Arm 1: Drug A

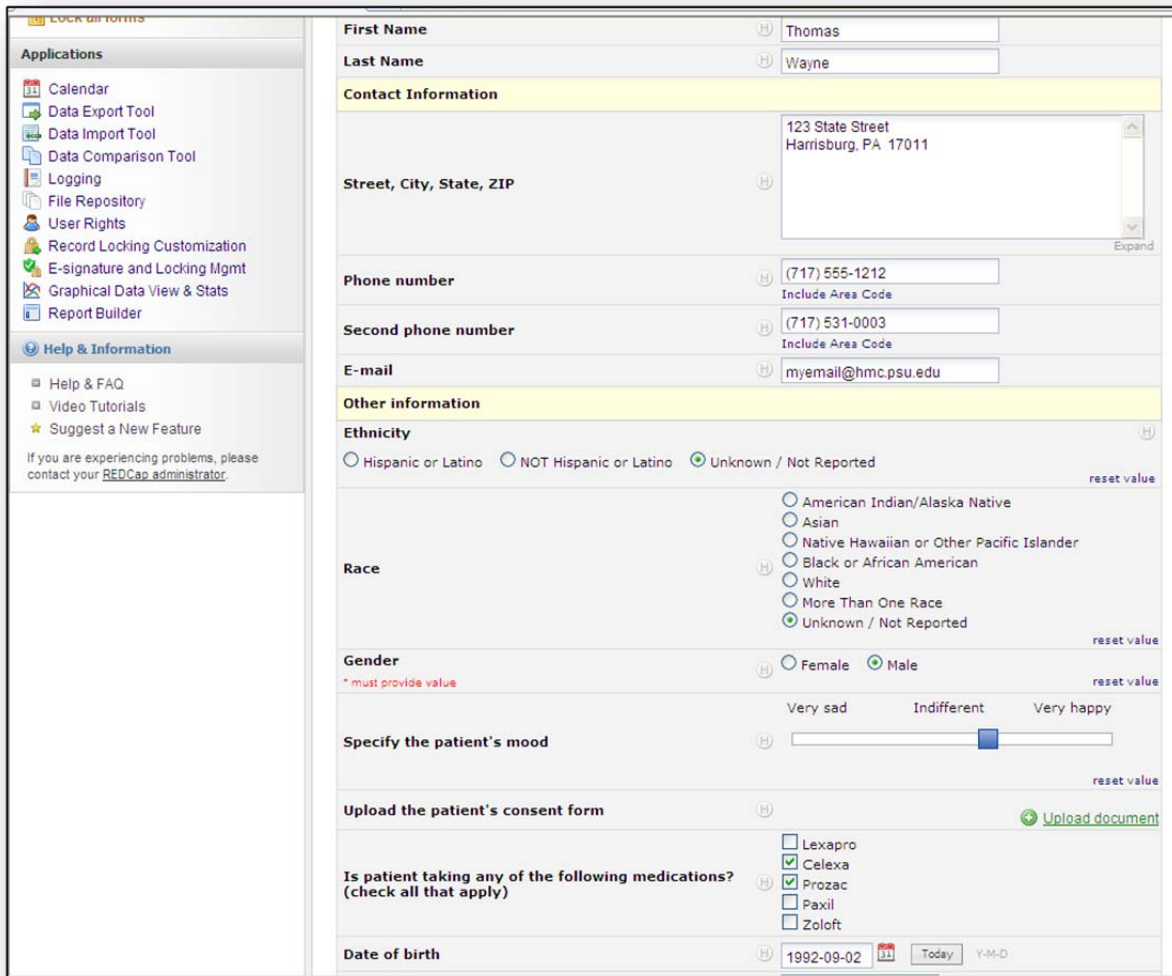
Data Collection Instrument	Events for Arm 1: Drug A							
	Enrollment (1)	Dose 1 (2)	Visit 1 (3)	Dose 2 (4)	Visit 2 (5)	Dose 3 (6)	Visit 3 (7)	Final visit (8)
Demographics	● (Green)							
Contact Info	● (Yellow)							
Baseline Data	● (Red)							
Visit Lab Data			● (Red)		● (Red)		● (Red)	
Patient Morale Questionnaire		● (Red)	● (Red)	● (Red)	● (Red)	● (Red)	● (Red)	● (Red)
Visit Blood Workup			● (Red)		● (Red)		● (Red)	● (Red)
Visit Observed Behavior			● (Red)		● (Red)		● (Red)	● (Red)
Completion Data								● (Red)
Completion Project Questionnaire								● (Red)

Below the grid, there are controls to 'Lock all forms across all Events' and 'Unlock all forms across all Events'.

Figure 6

Data Entry Fields

Figure 7 illustrates an example of a data entry form. The data type for each field determines the appearance of the field. There are several field types in REDCap including text boxes, radio buttons and drop down lists (select only one answer), check box lists (select all answers that apply), slider analog scale, file upload and calculated fields. Calculated fields are automatically populated based data of one or more field values. For example, Subject Age could be calculated by subtracting the Date of Birth from a date provided at the Baseline Visit.



The screenshot shows a REDCap data entry form for a patient named Thomas Wayne. The form is divided into several sections:

- Contact Information:** Includes fields for First Name (Thomas), Last Name (Wayne), and Street, City, State, ZIP (123 State Street, Harrisburg, PA 17011).
- Other information:** Includes fields for Phone number ((717) 555-1212), Second phone number ((717) 531-0003), and E-mail (myemail@hmc.psu.edu).
- Race:** Includes a field for Ethnicity (Unknown / Not Reported) and a field for Race (Unknown / Not Reported).
- Gender:** Includes a field for Gender (Male).
- Specify the patient's mood:** Includes a slider scale from Very sad to Very happy.
- Upload the patient's consent form:** Includes an Upload document button.
- Is patient taking any of the following medications? (check all that apply):** Includes checkboxes for Lexapro, Celexa (checked), Prozac (checked), Paxil, and Zoloft.
- Date of birth:** Includes a date field (1992-09-02) and a Today button.

Figure 7

Field Notes: Some fields have a field note, shown in small blue type below the data field. These notes provide field-specific information to help the person entering data.

Phone number	<input type="text" value="(555) 123-4567"/> Include Area Code
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Navigation: Enter a value in the data field by keyboard strokes or clicking the mouse. Move to the next field by clicking in it, **or pressing the [Tab] key.**

IMPORTANT: Navigate between fields using [Tab] or mouse clicks
If you press [Enter], you will save the form, and exit the current screen.

Validation: If a field has validation associated it with you may see a warning or error message indicating that the value you entered does not match requirements set up for the field. For example, text fields may require the value entered fall between minimum and maximum values. REDCap will not prevent you from continuing, but it will alert you to a value that is outside the pre-defined acceptable range.

Serum Prealbumin (mg/dL)	<input type="text" value="4"/>
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Microsoft Internet Explorer

 The value you provided falls outside the suggested range (Range = 10 to 40). This value is admissible, but you may wish to verify.

OK

Cancel: leaves the current screen and DOES NOT SAVE the changes you made. If you enter data in a form, then navigate to a different record by clicking on form text or button without clicking on one of the “Save” buttons, the data you entered will be lost. There is no warning message on screen when you leave without saving data.

IMPORTANT: If you navigate off the form without pressing [Enter] or clicking on one of the “Save” buttons on screen, your work will be lost.