

**Transcript of:** Overview of Data Entry

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*Audio is in normal text below. Timestamps are in bold to assist in finding specific topics.*

**(0:00)**

Welcome to the REDCap data entry demonstration. In the next few minutes, we will explore how to enter data for a typical REDCap project.

REDCap is entirely online, so a project or a database is essentially just a secure website. When you are granted access to a project, you will receive an email containing a link to the project. You can bookmark the project link or add it to your favorites list.

Let's follow the link here to login and open the project. When you open any project, you'll be taken to the project Home page. The project title appears at the top. On the left is the menu, and on the right is the main viewing area. You can see some basic information, including the user list and current number of records. Depending on your access level, you might have other quick links or tabs on this page. REDCap is designed to be very intuitive, very user-friendly. So if your project looks slightly different than this one, take the time to read through any additional text.

Let's take a look at the menu. At the top are some quick links to commonly used pages, including the Project Home page that we're on right now. Next is the Data Collection section. This is where we'll focus our attention because this is the section devoted to data entry. Keep in mind that your project will probably have different names of the links in this section. There may even be only one link here. We'll explore this part of the menu more in just a minute. Your Applications section might also look a bit different. These are tools available in REDCap but not commonly used in data entry. I haven't been given access to any applications, so nothing appears in this section and we won't explore this feature. Last is the Help & Information section. If you are curious about REDCap's additional features, use this section to learn more about the software. But right now, our focus is on entering data.

**(2:13)**

Let's begin data entry by creating a new record. You can only create new records through the first link in the data collection section. The link name here is Patient Info. The name is typically different for each project, but the name itself doesn't matter much. You'll always use the first link to create a new record.

Here we see some dropdown boxes. If any records had already been saved, their names would be displayed here. Since we haven't entered any data yet, nothing appears in the boxes. To create a new record, we need to enter the new record's name or number. In this project, the record name is called the Study ID. Your project may call it something different, and your project might not be related to patient care or clinical research. REDCap can capture almost any kind of data, so it's used for many purposes. But no matter what type of data you are collecting, you will always need to enter names for your records. You can use any alphanumeric text here, and your project's study team may provide you with certain formatting to follow. I will enter a new name and hit tab or enter.

**(3:29)**

This page is the actual data collection instrument or data entry form. The record name is now displayed at the top. The questions or descriptive text appear on the left, and data entry fields appear on the right. Depending on your project, the questions you'll see here may be different. There are several different question types used in REDCap, and most are pretty self-explanatory. Let's briefly explore some examples of the most common question types.

**(3:59)**

This form starts with a text box and a notes box. You can type in data manually or copy/paste. You can use the tab key to move to the next field. Some text fields have certain formatting that must be used. This is called validation. The text box for date of birth has been validated for date. I know that because there is a calendar icon, which I can use to select a date. I can also choose to type in a date manually, but if I enter something that cannot be recognized as a date, I get a validation reminder. This is a "hard" validation. I cannot continue data entry until I either correct or delete this value. When I enter something that can be recognized as a date, REDCap displays the data in a pre-defined format. The default here is year, month, day. Validation is a way to ensure that data is saved in a consistent format, and most projects use this functionality.

**(5:08)**

Notice that when I entered a date of birth, the age field automatically filled in for me. That's because this is a calculated field. Calculated fields look like text boxes, but have red font and you cannot type in the field. These fields complete automatically when you have entered the other data used in their pre-defined equation.

Next is a link where I can upload a file. Browse to find the file and upload it to this record. And here's a multiple choice question called a dropdown box. You can only select one answer here. However, with a checkbox question, you can choose more than one answer.

As you can see, data entry is pretty straightforward. The last thing to note about these forms is that you might occasionally see some additional text underneath your fields. That text is called a field note and will remind you of anything related to a particular question.

**(6:15)**

At the bottom of every data collection instrument, you'll find the question of "Form Status – Complete?" This appears by default on all data entry forms. Remember when we first clicked the Patient Info link to create a new record? There were dropdown boxes where we could open existing records. That is what you are defining here; you're choosing which dropdown box this record will appear in. You can mark a record as complete even if some questions haven't been answered. Marking it as complete does not mean that you cannot return and modify data. You can almost always edit data in REDCap. This is only defining that this record should appear in the "complete" dropdown box.

**(7:01)**

There are three "save" buttons, each with slightly different functionality. Save early and save often; there is no auto-save in REDCap.

The Save button saves and returns you to the main data entry screen, where you can create a new record. The Save and Continue button saves your data and refreshes this page, so you can continue entering data. The Save and Go to Next Form button will appear if you have more than one data entry form. We'll examine that more closely in a moment. For now, I will save the record and return to the main data entry screen. Our record now appears in the "complete" dropdown. Let's open the record and change the status to "incomplete" to illustrate how it moves to the other dropdown box.

Let's open the record once more and return to that final save button. The Save and Go to Next Form button allows you to move to the next data entry form for a particular record. It's a great way to streamline your data entry process. Notice that I am now on the second data collection instrument, but the same record is open. I can now enter more data about this record.

**(8:19)**

As I enter data, I'll get some more validation reminders if I enter anything in the wrong format or outside of the expected range. Notice that the range validation is "soft", meaning that I can enter and save values outside the expected minimum and maximum. This is different than a date validation, which wouldn't let me continue until

I entered a valid value. This value is admissible, but the value is displayed in bold and underlined in red to signify that it falls outside the expected range that was pre-defined for this field. I will mark this form as unverified and move to my final data entry form.

**(9:02)**

Notice that depending on how I answer this question, additional questions are revealed or hidden. This is called branching logic, a more advanced feature that hides or reveals fields depending on how I answer certain questions. This is another common feature that you might see used in your project.

Because this is my final data entry form, I cannot continue to the next form. If I want to continue data entry by creating a new record, I must save and return to the main data entry screen. Let's create another record but not enter as much data this time. I will go through all the forms just as before.

**(10:14)**

Let's create one more record. As I enter a new record name, see how REDCap displays any existing records that look like what I'm typing. If I were to type in an existing record name, I would simply open that record. REDCap would not overwrite it or create a new one. Notice that I can create a record and save it immediately without completing fields or forms.

You might have also noticed that as soon as a record is saved, colored buttons appear next to the links in the data collection section. This signifies that I have a record open. The record name is displayed at the top of the data collection section. The color of the button signifies the form status. Green is a form marked as complete, yellow is unverified, and red is incomplete. I can click the buttons to move between data entry forms and stay within a certain record. Remember to click the buttons to move between forms. If I click the instrument name, I must choose a record again. All records that have already been created are displayed in the drop down boxes, and I can open any specific form for a saved record. Remember, you can open a record to change the saved data, even without changing the form status.

**(11:44)**

Now that we've explored how to enter data in a typical REDCap project, let's briefly look at two other projects.

The My Projects page has a list of all the projects I have access to. It looks like several records have already been entered in this project, and my menu has changed a bit. But just as before, click the first link in the data collection section to begin data entry. I can open an existing record through the usual dropdown boxes, but to create a new record, I can simply click this button. This project uses auto-numbering for the record names. I don't have to manually enter a study ID here – REDCap will assign it for me.

Data entry proceeds as usual, with the same types of questions as we've already explored. Notice that in this project, a new button appears at the bottom of each saved record. I have rights to delete records here. Deleting a record removes all saved data for that record name or number. All saved data on all forms would be erased. The auto-numbering of records and the delete records options are not frequently used, so you probably won't see these features in a typical project.

**(13:02)**

Let's open a final project example now. This is a longitudinal project, which is capturing the same data multiple times over several months. Notice that this project is more advanced than the other two examples. I still have my Home page, but the data collection section has a link with a different name. As always, click the first link in this section to begin data entry. Here, I see a single dropdown box to open an existing record, and it looks like the auto-numbering is also turned on. I'll create a new record, and you'll immediately see the difference in a longitudinal project.

Longitudinal projects allow for completion of data entry forms multiple times for a single record. That's illustrated in this grid, which shows that some forms are completed only once while others are completed several times during the course of my study. I have those colored buttons to click and enter a form to do data entry. Forms themselves are very similar to the examples of the classic model that we've already looked at, but notice that at the top, I now see both the record number and the event name. I'll save this record, move to the next form just as we've seen before, save, and return to the event grid to enter data from another event. The software knows which forms to complete for each event, so it will automatically advance me through only the forms I need to complete for each event.

**(15:04)**

The grid makes it easy to visually track data entry for a record over the course of a study. If your project is longitudinal, this grid will have already been defined before you are granted access to begin data entry. Longitudinal projects are a less common type of project, but the event grid makes REDCap a great solution for such studies.

I hope you find REDCap an intuitive tool to help you collect and manage data. The software was created in 2004 at Vanderbilt University, and it is now available at more than 300 universities and medical research facilities all over the world. It is most frequently used for clinical and research purposes, but it's got a proven track record of supporting diverse data collection strategies, including online surveys. To learn more, go to [www.project-redcap.org](http://www.project-redcap.org) or contact your local REDCap administrator.