

Importing Project Data and Metadata into Illinois REDCap

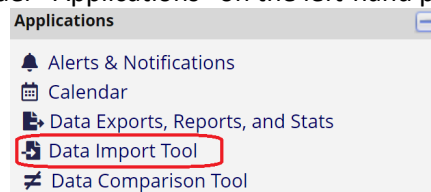
There may be times when a research team will need to import existing data into REDCap. While it is possible to manually enter the data into REDCap, this can be time-consuming and increases the opportunity for data entry error. As such, people may prefer to import the data instead.

Data can be imported into REDCap two ways:

1. Manual import via a CSV (or Excel file saved as CSV), and
2. Import via Application Programming Interface (API). The following instructions are for manual import. For more information on general API use in REDCap, see our [API document](#).

Uploading Project Data into REDCap

1. Build the project in REDCap, including all fields, validations, events, etc. We recommend testing data import with fake data while the project is still in development mode. Once you are satisfied with the project, real data should be imported *after* the project has been moved into production.
2. Select “Data Import Tool” under “Applications” on the left-hand panel.





3. On the “CSV import” tab, download one of the data import templates and save it as a .CSV (comma delimited) file to your computer.
 - a. It is recommended to download the template with records in row format, and these instructions are written for using the records in row format template.

Data Import Tool

This module may be used for importing data into this project from a CSV file or alternatively from an XML file in CDISC ODM format. Below are the steps you will need to follow in order to import your data successfully into this project.

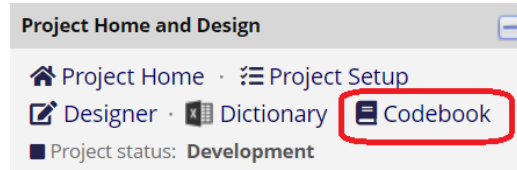
NOTICE: This project is currently in Development status. **Real data should NOT be entered** until the project has been moved to Production status.

 CSV import  CDISC ODM (XML) import  View background imports

Instructions:

- 1.) You may import a modified version of a CSV data export file, or you can obtain a blank CSV data import template that you can save locally and add data that you wish to import. [Download your Data Import Template](#). Also download with other delimiters: [Semicolon \(;\)](#), [Tab](#) (with records in row format), or alternatively download the template with records in [column format](#). Also download with other delimiters: [Semicolon \(;\)](#), [Tab](#).
- 2.) Add data to the file, and save it. Be sure the Variables/Field Names are not changed or an error may occur. All multiple choice fields (e.g., dropdown, radio) must have the raw coded value (rather than the choice label) entered in those cells, or else it cannot be processed. These coded values can be found in the [Codebook](#).
- 3.) Choose your upload settings below, and select the data file located on your device. Then click the 'Upload File' button to begin the upload process. The data file will be checked for errors to ensure that all the data is in the correct format before it is fully imported into the project. By default, the data will be imported in real time; however, you may choose to import the data using a background process in which you will be notified via email once your data has been successfully imported.

- b. Map your data onto the data import template, ensuring that it matches the data structure as defined by the codebook. The codebook can be found on the left-hand panel under “Project Home and Design” and is a useful tool for ensuring all values entered are valid. This means the values fit in a range of expected numbers, are a legitimate code for a coded variable, and/or match any field validation requirements set on open text fields.



- c. **Note:** If your project uses the longitudinal data collection and/or repeating instruments/events features, there are additional items to check when entering data into the data import template. These checks are listed at the end of the document. For more information on setting up a REDCap project with longitudinal data collection or repeatable instruments/events, see our [Longitudinal Data Collection](#) or [Repeating Data Collection](#) documents.
4. On the “Data Import Tool” page, navigate to the green box at the bottom to upload the CSV file.
- Choose an import option, for large amounts of data you should select “import as background process.”
 - Select “Choose File” and select the file to upload. If you are importing as a background process, confirm that the file is the intended file. Complete the other questions in the upload window (displaying the data comparison table, renaming records, overwriting data, and date formatting).
 - Set record format to rows.
 - Select “Upload File.”


 A screenshot of the 'Data Import Tool' upload window. The form contains several sections:

- Choose an import option:** A dropdown menu set to 'Import in real time'.
- Select your CSV data file:** A button labeled 'Choose File' with the text 'No file chosen' next to it.
- Display the data comparison table?:** A dropdown menu set to 'Yes, display uploaded data prior to importing'.
- Rename records?:** A dropdown menu set to 'No, use the record name provided'.
- Overwrite data with blank values?:** A dropdown menu set to 'No, ignore blank values in the file'.
- File format settings:**
 - CSV delimiter of data file: A dropdown menu set to 'Comma (,)'.
 - Format for date/datetime values: A dropdown menu set to 'MM/DD/YYYY or YYYY-MM-DD'.
 - Records in file are formatted as: A dropdown menu set to 'Rows'.

 At the bottom of the form is a green button labeled 'Upload File'.

- If the data was imported as a background process, it will be queued and REDCap will process it. You will receive an email when the data has been imported, including any possible errors that were found.
- If the data was imported in real time, the data **does not** automatically upload into REDCap. First, it must be reviewed and approved.

- a. Review the data by reviewing the “Data Display Table” according to the instructions and key provided in the “Instructions for Data Review” box.
 - i. For example, in the image below, existing data for date_enrolled will be overwritten by the imported data.

 **Your document was uploaded successfully and is ready for review.**
You are now required to view the Data Display Table below to approve all the data before it is officially imported into the project. Follow the instructions below.

Instructions for Data Review

The data you uploaded from the file is displayed in the Data Display Table below. Please inspect it carefully to ensure that it is all correct. After reviewing it, **click the 'Import Data' button at the bottom of this page** to import this data into the project.


KEY for Data Display Table below

Black text = New Data
Gray text = Existing data (will not change)
(Red text) = Data that will be overwritten
Red box = error
Orange box = warning

DATA DISPLAY TABLE										
study_id	redcap_repeat_instrument	redcap_repeat_instance	redcap_event_name	date_enrolled	slide	first_name	last_name	job	street	city
1 (existing record)			event_1_arm_1	2021-05-19 (2021-05-04)		Harry	Potter	Wizard		
1 (existing record)	test_survey	5	event_1_arm_1							


Do you wish to import the new data (displayed above) into the project?
(Click the button below to import the data.)

- b. If there are any errors or warnings that need to be fixed, return to the CSV file and correct the data there, before returning to Step 5. Below is an example of errors encountered during an import.

 **Errors were detected in the import file that prevented it from being loaded.**
There are 17 errors (shown in red in the error table below) in this dataset. Please correct any errors and upload the file again.

ERROR DISPLAY TABLE			
Record	Field Name	Value	Error Message
4	redcap_repeat_instrument	1	redcap_repeat_instrument must be the unique form name of a Repeating Instrument. It currently does not match the unique form name of any Repeating Instruments. Please fix this in the data import file and try again.
4	vet	1	This field ("vet") does not exist on the Repeating Instrument named '1'. You are not allowed to import data for this field into this Repeating Instrument.
4	enroll_date	today	Invalid date format. (NOTE: Dates must be imported here only in M/D/Y format or Y-M-D format, regardless of the specific date format designated for this field.)
6	name_origin	12	The value is not a valid category for name_origin


- c. Data put into calculated fields are ignored during the import. Values will be calculated once the import is finished.

 **Warnings were detected in the file that was uploaded.**
There is 1 warning (shown in orange) in this dataset. Please review the warnings below before importing the data.

ERROR DISPLAY TABLE			
Record	Field Name	Value	Error Message
4	ownership_len	2	(calc) Calculated fields cannot be imported because they will be calculated automatically during the import process. All calculated fields will simply be ignored during the import.

7. When the data in the “Data Display Table” is accurate, scroll to the bottom and select “Import Data.”

- a. The data will be imported, and a green box will notify you of how many records were created or modified during the import







 **Import Successful!** 2 records were created or modified during the import.

The data you uploaded from the file was successfully imported into the project. If you wish to import more data, you may use the box above to select another file on your computer.

Importing Data into a Longitudinal Project

If data is longitudinal, the correct event needs to be identified for each piece of data and all defined events must exist in the project prior to data import.

1. The data import template will include a column titled “redcap_event_name.” The event name for each row of data needs to be specified here.
2. Event names can be found on the “Define My Events” page, accessible through the “Project Setup” page. The event names are auto generated and visible in the column titled “Unique event name.”

	Event #	Event Name	Custom Event Label (optional)	Unique event name (auto-generated)
 	1	Event 1		event_1_arm_1
 	2	Event 2		event_2_arm_1
 	3	Event 3		event_3_arm_1
<div style="display: flex; align-items: flex-start;"> <div style="margin-right: 10px;">Add new event</div> <div style="flex-grow: 1;"> <input type="text"/> <small>Descriptive name for this event</small> </div> <div style="margin-left: 10px;"> <input type="text"/> <small>Custom Event Label (optional) Example: [visit_date], [weight] kg</small> </div> </div>				

3. For each record, enter data chronologically and in consecutive rows. For example:

record_id	redcap_event_name	age	
	year_1_arm_1		
1	year_2_arm_1	21	2
	year_3_arm_1		2
2	year_1_arm_1	36	2
	year_2_arm_1		
3	year_1_arm_1	51	2
			2
3	year_3_arm_1	53	2

4. Longitudinal data can be unbalanced; in other words, there can be an unequal number of observations across events. If you do not have data for an event, you do not need to include a row for that record and event. In the example above, there are only two waves of data for Record 2, and Record 2 has no row for the event “year_3_arm_1.”

Importing Data with Repeatable Instruments and/or Events

If data utilizes repeatable instruments and/or events, data needs to be entered into the correct instrument and/or event.

1. For repeatable instruments:
 - a. All instruments that will repeat must be enabled as such prior to data import.
 - b. The data import template will include columns titled “redcap_repeat_instrument” and “redcap_repeat_instance.”
 - i. “redcap_repeat_instrument” is the name of the instrument that will repeat. It will be the name of the instrument, but with no capital letters and underscores instead of spaces. For instance, if the instrument is called “Exercise Survey,” the name in the spreadsheet will be “exercise_survey.”
 - ii. “redcap_repeat_instance” is the number of the repeating instance (e.g., 1, 2, 3). You can pre-number the repeatable instance or event with its instance number, or write “new” in the “redcap_repeat_instance” column. Including “new” instead of a number will tell REDCap to auto-number that instance with the next number for that record.
 - c. For each record, enter data numerically ascending and in consecutive rows. For example:

record_id				
1				
1	exercise_survey	2	0	0
				60
2	exercise_survey	2	1	45
		3		
3	exercise_survey	new	0	0

2. For repeatable events:
 - a. All events that will repeat must be enabled as such prior to data import.
 - b. The data import template will include columns titled “redcap_event_name,” “redcap_repeat_instrument,” and “redcap_repeat_instance.”
 - i. “redcap_event_name” is the name of the event that will repeat. Event names can be found on the “Define My Events” page, accessible through the “Project Setup” page. The event names are auto generated and visible in the column titled “Unique event name.”
 - c. For each record, enter data numerically ascending and in consecutive rows. For example:

record_id					
1	weekly_surveys_arm_1		2	1/8	1
1	weekly_surveys_arm_1		4	1/22	1
2	weekly_surveys_arm_1		new	1/10	0
3	weekly_surveys_arm_1		2	1/10	0
4	weekly_surveys_arm_1		1	1/4	1

- i. Even if you are not using repeatable instruments with repeatable events, the data import template will still include a “redcap_repeat_instrument”

column. This is because repeatable instruments and events are enabled at the same time. If you are not using repeatable instruments, this column should be left blank when importing data.

Importing Project Structure (Metadata) and Data into REDCap

This process imports the data and the ***project structure***, also called the project metadata. Project metadata includes project attributes, such as customized dashboards, events, and arms, as well as variable names and field labels. This is only used if you are migrating a project from another institution's instance of REDCap. Project instruments (surveys and forms) can be imported on their own using the [Data Dictionary](#).

1. From the other organization's REDCap instance, go the "Other Functionality" tab and select "Download metadata & data (XML)."
2. In your Illinois REDCap account, create a new project and select "Upload a REDCap project XML file (CDISC ODM format)."
3. Select the XML file downloaded in Step 1.
4. Select "Create Project."
5. Go to "Online Designer" and make sure the forms or surveys function as needed.
6. Go to "Data Exports, Reports, and Stats" and "View Report" to review the imported data and ensure it is accurate.
7. Move the project to production.