


## **REDCap's Data Dictionary – A powerful tool in your toolbox!**

### **Introduction**

I have been using REDCap since version 6.something and one of the greatest features in my opinion is the Data Dictionary. Automatically generated, packed full of useful information, and relatively easy to understand, it allows for a variety of tasks to be made significantly easier. From quickly adding a new field to moving fields around, you can do everything in Excel and then import the new Data Dictionary into REDCap. This makes sharing / copying / transferring projects extremely simple. *NOTE: Survey functionality, DAGs and other aspects of a project do not get transferred. These either need to be added manually or use the XML download for a more complete project file.*

### **Where do I get the Data Dictionary?**

You can get the Data Dictionary from your Project Setup tab






**Not started**




I'm done!

#### Design your data collection instruments & enable your surveys


Add or edit fields on your data collection instruments (survey and forms). This may be done by either using the Online Designer (online method) or by uploading a Data Dictionary (offline method). You may then enable your instruments to be used as surveys in the Online Designer. Quick links: [Download PDF of all instruments](#) OR [Download the current Data Dictionary](#)

Go to  Online Designer or  Data Dictionary Explore the  REDCap Shared Library

Have you checked the [Check For Identifiers](#) page to ensure all identifier fields have been tagged?

Learn how to use  Smart Variables  Piping  Action Tags

### **Steps for making project changes:**

- 1.) [Download the current Data Dictionary](#) 
- 2.) Edit the Data Dictionary (see the [Help & FAQ](#) for help)
- 3.) Upload the Data Dictionary using the form below
- 4.) The changes will be made to the project after the Data Dictionary has been checked for errors


#### Upload your Data Dictionary file (CSV file format only)

Format for min/max validation values for date and datetime fields:

The file will be downloaded as a CSV, so be careful to keep it in that format if you're going to re-upload it after changes are made.

When you have made any changes to the Data Dictionary and are ready to have those changes reflected in the Project, simply come back to the Project Setup -> Data Dictionary screen above and click on Browse. Verify the Date / Date Time field formatting aligns with what you have in the Validation section

for your dates, and click upload.

 **Your document was uploaded successfully and awaits your confirmation below.**

- No errors or warnings were found in the document.
- The uploaded data dictionary **contains 80 fields**, which will replace the 80 fields that currently exist in the project (excluding 'Form Status' fields, which are automatically generated by REDCap).

**Are you ready to commit the changes to the project from the uploaded Data Dictionary?**  
(Click the button below to submit the changes.)

[Cancel](#)

If you get the screen above, that's good news – simply click “Commit Changes” and the project will refresh with the updates.

### Overview of Errors

Mistakes in the Data Dictionary range from “Can't upload until it's fixed” to “OK to upload, no consequence” to “OK to upload, complete disaster”. A second CSV has been created with some common errors intentionally added. Because I need the CSV to be as close to possible to what REDCap expects, I saved a copy as an Excel file so you can see exactly what I've changed.

Variable / Field	Form Name	Section Header	Field Type	Field Label	Choices, Calcul	Field Note	Text Validation	Text Validation	Text Validation	Identifier?	Branching Logic	Required Field?	Custom Alignm	Question Numbr	Matrix Group NI	Matrix Ranking?	Field Annotatio
	my_first_instrument	<center>font s	text	text box (no validation)													
textboxdmy			text	text box (D-M-Y)			date_dmy	1/1/2000	1/1/2020								
textboxdmyhm	my_first_instrument		text	text box (datetime D-M-Y H:M)			datetime_dmy	1/1/2000 0:00	1/1/2020 23:59								
textboxemail	my_first_instrument		text				email										
textboxpostodec	my_first_instrument		text	text box (Canadian Postal Code)			postalcode_canada										
textboxtime	my_first_instrument		text	text box (time)			time	0:00	13:00								
textboxamericanz	my_first_instrument		text	text box (US zipcode)			zipcode										
notetext	my_first_instrument		notes	Notes box													
multiplechoicerad	my_first_instrument		radio	Multiple choice {r1, 1   2, 2   3, 3   4, 4													
textboxdmyhm2	my_second_instrument		text	text box (datetime D-M-Y H:M)Modified: Added @HIDEBI			datetime_dmy	1/1/2000 0:00	1/1/2020 23:59								@HIDEBUITTO

Errors range from missing information to garbage metadata to typos. When I try and upload the \_errors.csv file, I get the following:

**ⓘ Your data dictionary could NOT be uploaded because of the errors listed below. Please correct these errors and try uploading your data dictionary again.**

### Errors found in your Data Dictionary:

Each row MUST have a variable/field name, but the following cells have a field name missing: **A2, A3.**

The following variable/field names were duplicated. Please rename these field names so that they only appear once.

**(A3)**

Each row MUST have a form name, but the following cells have a form name missing: **B2, B4.**

Form names must be sequential and cannot repeat again after being used for another form. Rename the following form names beginning with the values listed below:

**(B4)**

Each row MUST have a field type, but the following cells have a field type missing: **D5.**

The only valid field types are text, notes, radio, dropdown, calc, file, checkbox, yesno, truefalse, descriptive, slider and must all be lower-case. The following are invalid field types listed in your data dictionary:

**(D5)**

Only 'text' field types may have validation. The following validation types should be removed from your data dictionary or else their field type should be changed to 'text': **H5**

A field validation type is required in order to have a minimum or maximum validation value. The following cells are missing a validation type: **I7**

### Allowable warnings found in your Data Dictionary:

**ⓘ Changing record ID field:** The current record ID field (i.e. the first field on the first form), to which all existing data records are connected, has either been moved from the first field position or deleted from the Data Dictionary. Changing the record ID field may not have been intentional. This means that the data for all currently existing records will not be able to be retrieved properly on some pages in the project and may introduce further data errors. To prevent the introduction of any data errors, the field must be added back to the first field position in the Data Dictionary.

- Current record ID field: **record\_id**
- Record ID field from uploaded Data Dictionary: **textboxdmy**

The first field must be a 'text' field type. It will automatically be set as a 'text' field in the following cell: **D2.**

It is recommended that each row have a field label in order to distinguish fields, but the following cells have a field label missing: **E2, E6.**

The only valid value for the Identifier column is 'y' or 'Y'. The following invalid values were automatically removed from your data dictionary and replaced with a blank:

**abcd (K13)**

There are syntax errors in some branching logic and are thus not normally allowed. Since you are an Administrator, the branching logic for the fields listed below will be allowed here, although you may want to check to make sure these aren't actual errors.

**textboxtime (L14)**

The only valid value for the Required Field column is 'y' or 'Y'. The following invalid values were automatically removed from your data dictionary and replaced with a blank:

**abcd (M15)**

The only valid values for the Custom Alignment column are 'LV', 'LH', 'RV', 'RH'. The following invalid values were automatically removed from your data dictionary and replaced with a blank: **abcd (N16)**

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A couple of things of significance:

- 1) There is no “Commit changes” button. REDCap has detected one or more significant errors and therefore it forces you to stop and fix them.
- 2) There are two different categories and the red ones must be corrected in order for the CSV to be uploaded.
- 3) Some of the erroneous information has been removed from the Data Dictionary through the REDCap process (note the 4<sup>th</sup> error in the yellow section, the “abcd” has been removed and replaced with a blank).

NOTE: The missing RECORD\_ID field is flagged as an Allowable error. The text from the screenshot above reads:

*Changing record ID field: The current record ID field (i.e. the first field on the first form), to which all existing data records are connected, has either been moved from the first field position or deleted from the Data Dictionary. Changing the record ID field may not have been intentional. This means that the data for all currently existing records will not be able to be retrieved properly on some pages in the project and may introduce further data errors. To prevent the introduction of any data errors, the field must be added back to the first field position in the Data Dictionary.*

- Current record ID field: `record_id`
- Record ID field from uploaded Data Dictionary: `textboxdmy`

REDCap is OK with the `textboxdmy` field being the record ID, which obviously does not make sense for the vast majority of projects.

Another allowable error that needs to be corrected is the one for the branching logic:

*There are syntax errors in some branching logic and are thus not normally allowed. Since you are an Administrator, the branching logic for the fields listed below will be allowed here, although you may want to check to make sure these aren't actual errors.*

*textboxtime (L14)*

I can't think of any examples when incorrect branching logic would be the desired logic for the field; if you are the administrator and don't notice this, or don't think it'll be an issue, the project may have serious flaws that may or may not get picked up during testing.

## The Data Dictionary Demo

A simple REDCap Project has been created with three forms and one survey. The project has every field type with the exception of a Dynamic SQL field (see the training material on the consortium site for more information).

The forms in the REDCap Project:

### Field Types

*All fields in this section are set to Right Vertical. Date and Number fields have ranges set. No piping, smart variables, identifiers, required settings are enabled (see later sections).*

text box (no validation)	<input type="text"/>
text box (D-M-Y)	<input type="text"/> Today D-M-Y
text box (datetime D-M-Y H:M)	<input type="text"/> Now D-M-Y H:M
text box (email)	<input type="text"/>
text box (integer)	<input type="text"/>
text box (letters only)	<input type="text"/>
text box (mrn)	<input type="text"/>
text box (number)	<input type="text"/>

### Field Types - Customizations

*Copy of the First form but have added / modified some of the fields.*

text box (no validation) Modified: Required = Y, Identifier = Y <small>* must provide value</small>	<input type="text"/>
text box (D-M-Y) Piping: _____	<input type="text"/> Today D-M-Y
text box (datetime D-M-Y H:M) Modified: Added @HIDEBUTTON action tag to hide "TODAY" button. Changed Custom Alignment to "Left / Vertical". NOTE: Label automatically expands to full field length.	<input type="text"/> D-M-Y H:M
text box (email)	<input type="text"/>
text box (integer) Modified: Added "@DEFAULT" action tag with a value of 0	<input type="text" value="0"/>
text box (letters only) Modified: Added "@CHARLIMIT" action tag with a value of 10	<input type="text"/> 10 characters remaining

### Branching Logic

*Showing a couple of examples of Branching Logic. Copy of the My First Instrument, so no additional functionality.*


text box (no validation)	<input type="text"/>
text box (email)	<input type="text"/>
text box (integer)	<input type="text"/>
text box (letters only)	<input type="text"/>
text box (mrn)	<input type="text"/>

## Surveys and the Matrix Field Type

Showing how the Survey will look in the data dictionary. Included the Matrix field type. The first field on the form is also a hidden text box to show these show up in the data dictionary.

If "Question Number" in Survey Settings is set to Custom, a field is enabled in the Add A New Field screen that allows you to put in a number.

This is the matrix header.

	A	B	C	D
This is a field. 	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

reset

This is another field. This one is required.


\* must provide value




reset

This is another matrix, with only 1 choice per column allowed (radio buttons).

(One selection allowed per column)

This is a field. 

reset

This is another field. 

reset

There are two additional files in the ZIP; one is the CSV file which can be imported to a new project and the other is an XLSX file with details about the data dictionary, information about the columns, etc. See the Distinct Values tab for the unique options for each column.