

REDCap Advanced Topics

University of Iowa



**Institute for Clinical and
Translational Science (ICTS)**

[https://www.icts.uiowa.edu/confluence
/display/ICTSit/REDCap#REDCap-
REDCapAdvancedTopicsTraining](https://www.icts.uiowa.edu/confluence/display/ICTSit/REDCap#REDCap-REDCapAdvancedTopicsTraining)





Data Quality

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https://www.icts.uiowa.edu/confluence/download/attachments/53149797/REDCap_Data_Quality.pdf



Data Quality

Data Quality is a new capability in REDCap to verify the integrity of data collected.

Applications

-  Calendar
-  Data Export Tool
-  Data Import Tool
-  Data Comparison Tool
-  Logging
-  File Repository
-  User Rights
-  Record Locking Customization
-  E-signature and Locking Mgmt
-  Graphical Data View & Stats
-  Data Quality
-  API 
-  Report Builder

Data Quality Pre-defined Rules

Data Quality allows you to apply rules to fields in order to validate your data. The rules are applied by pressing either the “Execute” or “Execute All Rules” buttons.

Data Quality Rules				Execute All Rules	Clear
	Rule #	Rule Name	Rule Logic (Show discrepancy only if...)	Total Discrepancies	
	a	Missing values*	-	Execute	
	b	Missing values* (required fields only)	-	Execute	
	c	Field validation errors (incorrect data type)	-	Execute	
	d	Field validation errors (out of range)	-	Execute	
	e	Outliers for numerical fields (numbers, integers, sliders, calc fields)	-	Execute	
	f	Hidden fields that contain values**	-	Execute	
	g	Multiple choice fields with invalid values	-	Execute	

Data Quality Discrepancies

Values that match the “Rule Logic” are considered as a discrepancy. Clicking the “view” link displays the list of discrepancies.

Data Quality Rules

✓ Processing Complete!

Execute All Rules

Clear


	Rule #	Rule Name	Rule Logic (Show discrepancy only if...)	Total Discrepancies	
	a	Missing values*	-	0	view
	b	Missing values* (required fields only)	-	0	view
	c	Field validation errors (incorrect data type)	-	0	view
	d	Field validation errors (out of range)	-	5	view
	e	Outliers for numerical fields (numbers, integers, sliders, calc fields)	-	0	view
	f	Hidden fields that contain values**	-	0	view
	g	Multiple choice fields with invalid values	-	1	view

Field Validation Errors

If rule logic discovers a discrepancy, each of the field validation errors can be reviewed and either excluded (to handle exceptions) or the data values can be edited and corrected.

Rule: **Field validation errors (out of range)**

Discrepancies found: **5**

Record	Discrepant fields with their values	Status	Exclude 	
billybob	mrn = 4321 (min: 10000000, max: 99999999)	Out of range	exclude	



Data Quality Custom Rules

A custom rule is used to catch data entry errors. It can be created by defining the condition that matches a range of incorrect data values.

Add	Participants below age 18	[age] < 18	
	Enter descriptive name for new rule (e.g. Participants below age 18)	Enter logic for new rule (e.g. [age] < 18)	
		How do I use special functions?	



Editing Custom Rules

A custom rule can be edited in place by hovering over the “Rule Name” or the “Rule Logic” and clicking on the pencil icon. The “Save” button performs the rule update.

The image displays two screenshots of a custom rule interface, illustrating the editing process. The interface is presented as a horizontal strip with a torn-paper effect.

Top Screenshot: Shows a rule with ID 1, named "Participants below age 18", with logic "[age] < 18". A yellow tooltip with a pencil icon and the text "Click to edit" is positioned over the rule logic field. To the right of the logic field, there is a red box containing the number "3", a blue "view" link, and a red "X" icon.

Bottom Screenshot: Shows the same rule, but with the "Save" button highlighted in a yellow box. The "view" link and "X" icon are still present.

ID	Rule Name	Rule Logic	Count	View	Delete
1	Participants below age 18	[age] < 18	3	view	X

Executing Custom Rules

A custom rule is executed and discrepancies are viewed in a similar fashion to predefined rules.

	1	Participants below age 18	[age] < 18	Execute	
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	1	Participants below age 18	[age] < 18	3 view	
--	---	---------------------------	------------	------------------------	--

Rule #1: **Participants below age 18**

Discrepancies found: **3**

Record	Discrepant fields with their values	Status	Exclude
1242	age: 4	Issue exists	exclude
1243	age: 17	Issue exists	exclude
1244	age: 12	Issue exists	exclude

Discrepancy Exclusions

A discrepancy can be excluded from future data quality verifications by clicking on the “exclude” link. In addition, previously excluded discrepancies can be displayed by clicking on the “view” link.

Rule #1: **Participants below age 18**

Discrepancies found: **2**

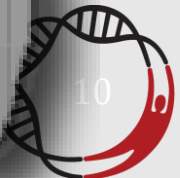
(**1 exclusion not displayed** - [view](#))

Record	Discrepant field
1243	age: 17
1244	age: 12

Exclude 

[exclude](#)

[remove exclusion](#)



REDCap Newsletter

- **Monthly REDCap Newsletter**

- ☐ Upcoming Training
- ☐ Walk-in Hours Schedule
- ☐ Helpful Tips
- ☐ New REDCap Functionality
- ☐ Frequently Asked Questions (and answers)
- ☐ REDCap Best Practices



- **REDCap LISTSERV Subscription:**

- ❖ <https://list.uiowa.edu/scripts/wa.exe?SUBED1=REDCAP&A=1>



REDCap Documentation

- Training within REDCap:

- FAQs (Help & FAQ Tab):



<https://redcap.icts.uiowa.edu/redcap/index.php?action=help>

- Video (Training Resources Tab):



<https://redcap.icts.uiowa.edu/redcap/index.php?action=training>

- Local REDCap documentation:



<https://icts.uiowa.edu/confluence/display/ICTSit/REDCap>

