Overview

Tufts CTSI recently upgraded REDCap to version 9.5.5. The new REDCap features are summarized below. If you have questions about these features, please email informatics@tuftsctsi.org:

- Missing Data Codes
- Alerts & Notifications
- Improved Reports
- New Smart Variables
- REDCap Mobile App
- Rich Text Editing
- reCAPTCHA
- New Action Tags
- GDPR Compliance Options
- …and many more!
Missing Data Codes

REDCap now supports establishing standardized “codes” to indicate that data is missing, rather than just leaving fields blank. These codes can also establish that data is invalid, out-of-range, or otherwise not usable:
Missing Data Codes can be set up in the Additional Customizations menu available on the “Project Setup” tab.
Missing Data Codes

Once in the Missing Data Codes section, you can add from a list of standard codes that designate data quality issues OR create your own, using letters and / or numbers.

M Missing Data Codes: Set up your missing data codes for this project
Fields that have a blank/missing value may be marked with a custom ‘Missing Data Code’ to note why the value is blank. These missing codes may be used to aid in data analysis by specifying why a field lacks a value. To enable this feature below, enter both the codes AND their labels for all the categories of missing data that you wish to use in this project. The missing codes should be coded just like the choices of a multiple choice field with code + comma + label, in which the codes can only have letters, numbers, dots, dashes, and underscores (e.g., '-999, Not asked' or 'UNK, Unknown'). If no codes are entered, this feature will remain disabled.
Read more detailed instructions.
Missing Data Codes

Codes are added in the same format as entries in a dropdown menu, with the value coming before a comma, and the label coming after (ie, “-999, Custom Code for Missing”)

Missing Data Codes: Set up your missing data codes for this project

Fields that have a blank/missing value may be marked with a custom ‘Missing Data Code’ to note why the value is blank. These missing codes may be used to aid in data analysis by specifying why a field lacks a value. To enable this feature below, enter both the codes AND their labels for all the categories of missing data that you wish to use in this project. The missing codes should be coded just like the choices of a multiple choice field with code + comma + label, in which the codes can only have letters, numbers, dots, dashes, and underscores (e.g., '-999, Not asked' or 'UNK, Unknown'). If no codes are entered, this feature will remain disabled.

Read more detailed instructions.

- NI, No information
- INV, Invalid
- -999, Custom Code for Missing

Add code from standardized list of missing data codes (optional suggestions):

- Add NI No information
- Add INV Invalid
- Add UNK Unknown
- Add NASK Not asked
- Add ASKU Asked but unknown
- Add NAV Temporarily unavailable
If your project has Missing Data Codes enabled, you will see an “M” next to all data fields. Clicking this will allow you to select one of your standard codes.

• This can be done both when entering new data, or when accessing data from a submitted survey.
Missing Data Codes

• Once selected, the code will become the field’s value.

• However, the original value of the field will be preserved via the “History” (H) button and the Logging page.

Data History for variable "feel" for record "4"

Listed below is the history of all data entered for the variable "feel" for Record ID "4". The data history results are sorted from earliest to most recent.

<table>
<thead>
<tr>
<th>Date/Time of Change</th>
<th>User</th>
<th>Data Changes Made</th>
</tr>
</thead>
<tbody>
<tr>
<td>01/09/2020 19:18:30</td>
<td>...</td>
<td>Missing Data Code entered: Invalid (INV)</td>
</tr>
<tr>
<td>01/09/2020 19:18:45</td>
<td>...</td>
<td>dsajkfjds;lgfjkjaj</td>
</tr>
</tbody>
</table>

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Missing Data Codes

- The Data Quality Rules do not count Missing Data Codes as “Blank Values”, but test for them with a new rule, **Rule I**.

<table>
<thead>
<tr>
<th>Rule #</th>
<th>Rule Name</th>
<th>Rule Logic</th>
<th>Real-time execution</th>
<th>Total Discrepancies</th>
<th>Delete rule</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Blank values*</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>B</td>
<td>Blank values* (required fields only)</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>C</td>
<td>Field validation errors (incorrect data type)</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>D</td>
<td>Field validation errors (out of range)</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>E</td>
<td>Outliers for numerical fields (numbers, integers, sliders, calc fields)**</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>F</td>
<td>Hidden fields that contain values***</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>G</td>
<td>Multiple choice fields with invalid values</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>H</td>
<td>Incorrect values for calculated fields</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
<tr>
<td>I</td>
<td>Fields containing “missing data codes”</td>
<td>-</td>
<td></td>
<td></td>
<td>Execute</td>
</tr>
</tbody>
</table>

- A new function usable in logic and calculations, `isblankormissingcode()`, returns true if the specified variable is empty or has a missing data code.
Rich Text Editing

- REDCap now makes it easier to use HTML formatting in the online designer and Survey Invitation settings.

- By clicking the box, you can see options for text formatting.

- In REDCap all field labels are **bold** by default; this will now be visible and easier to change.
Rich Text Editing

In addition to text formatting, the Rich Text Editor also makes it easier to add links and tables, and allows you to view the HTML Code that it produces.
Rich Text Editing

- If you unselect the “Use Rich Text Editor” checkbox, your field will revert to the HTML code that was produced; *this will not affect how your field looks to a form / survey user*

- You can disable and re-enable the editor as desired
Alerts and Notifications

- REDCap now allows you to send out e-mail messages through its Alerts and Notifications section, accessible via the left-hand column, which are configurable and allow diverse triggers.

- Alerts can be sent to users, study staff, participants, and anyone else, and allow for complex piping and formatting.
Alerts and Notifications

Once on the “Alerts and Notifications” page, press the “Add New Alert” button to customize a new e-mail.

⚠️ Alerts & Notifications

The Alerts & Notifications feature allows you to construct alerts and send customized email notifications. These notifications may be sent to one or more recipients and can be triggered or scheduled when a form/survey is saved and/or based on conditional logic whenever data is saved or imported. When adding/editing an alert, you will need to 1) set how the alert gets triggered, 2) define when the notification should be sent (including how many times), and 3) specify the recipient, sender, message text, and other settings for the notification. For the message, you may utilize customized options such as rich text, the piping of field variables (including Smart Variables), and uploading multiple file attachments. Learn more

My Alerts | Notification Log

+ Add New Alert

☐ Show deactivated alerts

All active alerts you have will be displayed here; you can choose to deactivate and restore alerts as needed.
Alerts and Notifications

Alerts are 100% customizable, including their **name**, **schedule**, **trigger**, **message** (full HTML support), and **recipients** (can choose to use piping, CC, and BCC).

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Create new alert

You may define the settings for your alert in Steps 1-3 below. After clicking the Save button at the bottom, your alert will immediately become active and may be triggered at any time thereafter. If you would like to remove or stop using an alert, it may be deactivated at any time. You may modify an existing alert at any time, even after some notifications have already been sent or scheduled.

**Title of this alert:** add optional title

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**STEP 1: Triggering the Alert**

How will this alert be triggered?  
- When a record is saved on a specific form/survey  
- When a record is saved on a specific form/survey with conditional logic  
- Using conditional logic during a data import or data entry

**Trigger the alert...**  
- when __choose an instrument/survey__ is saved with any form status __excludes data imports__

* The alert will not be re-triggered if the form/survey is saved again, unless it is set to send “Every time” in Step 2 below.

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**STEP 2: Set the Alert Schedule**

When to send the alert?  
- Send immediately  
- Send on next __Day__ at time __HH__  
- Send after lapse of time ___ days ___ hours ___ minutes  
- Send at exact date/time ___MM/DD/YYYY HH:MM__

**Send it how many times?**  
- Just once  
- Every time the form/survey in Step 1 is saved __excludes data imports__  
- Multiple times __Send every ___ days ___ after initially being sent__

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**STEP 3: Message Settings**

**Email From:**  
- __Must provide value__

**Email To:**  
- __Select recipients__

**Or manually enter emails:**  
- jane@example.com; john@mysite.org

**Subject:**  
- __Must provide value__

**Message:**  
- __Must provide value__

* In the subject or message, you may use   
  - /$fn_/ for first name  
  - /$ln_/ for last name  
  - /$risk_/ for survey name  
  - /$pass_/ for survey link

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**Optional**

**Alert expiration:**  
- MM/DD/YYYY HH:MM  
  - This alert will auto-deactivate at the specified date/time above. Note: This will cause any already-scheduled notifications not to be sent after the expiration time.
Alerts and Notifications

The logic for alerts can be made arbitrarily complex to ensure that it is only sent out under exact circumstances.

**Title of this alert:** REDCap Survey Alert Triggered

**STEP 1: Triggering the Alert**

- How will this alert be triggered?
  - When a record is saved on a specific form/survey
  - When a record is saved on a specific form/survey with conditional logic
  - Using conditional logic during a data import or data entry

- Trigger the alert...
  - when "REDCap Survey" is saved with any form status (excludes data imports)
  - while the following logic is true:
    - 
      ```
      [trigger] = 1 and [kill_switch] = 0
      ```
      (e.g., [age] > 30 and [sex] = "1")
      - Valid
      - Ensure logic is still true before sending notification?

*The alert will not be re-triggered if the form/survey is saved again, unless it is set to send "Every time" in Step 2 below.*
Alerts and Notifications

• Messages are instantly sent via e-mail to the recipient based on the conditions met and the schedule time set.

• The notification log shows all previous and scheduled messages, with the ability to filter and see all messages.
REDCaptcha

- REDCap now supports the use of Google reCAPTCHA to prevent robots from opening public survey links

- This is under “Survey Distribution Tools” (previously “Manage Survey Participants”)
• When this is enabled, anyone entering your survey via the public link (but only the public link) must click a button to ensure that they are not a robot before continuing.

• This prevents robots from automatically filling out survey links you distribute.
Improved Reports: User Rights

Reports now have descriptions and separate viewing and editing rights management.
Improved Reports: Searches and Sorting

You can now search through reports in the left-hand column and organize them into folders.

Report Folders are a way to organize your reports by putting them into groups. You may create new folders below and then assign reports to them on the right. A report can be assigned to multiple folders at the same time. To reorder your folders, you can drag and drop them in the left-hand table. Note: All users in this project will be able to see the folders so long as they have 'View Access' to at least one report in the folder.
Improved Reports: Checkboxes

By default, when viewing reports with checkboxes REDCap will split each box into its own column. There is now an option to consolidate these into one column.

**Additional report options (optional)**

- Include the survey identifier field and survey timestamp field(s)?
- Combine checkbox options into single column of only the checked-off options (will be formatted as a text field when exported to stats packages)
New Action Tags

REDCap now features several new **Action Tags** to change field behavior:

- **@HIDDEN-PDF** – Hides field from all PDF downloads

- **@NOMISSING** – Disables missing data codes in field
New Action Tags

- **@NOW_SERVER** – Loads the server’s date / time into a text field

- **@TODAY_SERVER** – Loads the server’s date into a text field

- **@NOW_UTC** – Loads the current UTC/GMT date / time into a text field

- **@TODAY_UTC** – Loads the current UTC / GMT date into a text field
New Smart Variables

REDCap also has several new **Smart Variables** that can help you collect or show system-level information:

- **[project-id]** – The Project ID (i.e., PID) of the current project
- **[user-fullname]** – The current user's first and last name
- **[user-email]** – The current user's primary email
New Smart Variables

- \[\text{redcap-base-url}\] – The base web address for REDCap
- \[\text{redcap-version}\] – The current REDCap installation’s version
- \[\text{redcap-version-url}\] – The base web address with the version
- \[\text{survey-base-url}\] – The base web address for surveys

\[\text{redcap-base-url}\] - Base URL
\[\text{redcap-version}\] - Version Number
\[\text{redcap-version-url}\] - URL With Version
\[\text{survey-base-url}\] - Survey URL

https://collaborate.tuftsctsi.org/redcap/ - Base URL
9.5.5 - Version Number
https://collaborate.tuftsctsi.org/redcap/redcap_v9.5.5/ - URL With Version
https://collaborate.tuftsctsi.org/redcap/surveys/ - Survey URL
New Smart Variables

- **[instrument-name]** – The unique instrument name of the current survey / form

- **[instrument-label]** – The label of the current survey / form

- **[survey-title]** – The survey title of the instrument (can add parameter to see the title of another instrument in the project with surveys enabled)
GDPR Compliance Options

- GDPR (General Data Protection Regulation) is a set of regulations used in the EU for data privacy.

- Among them is the “Right to be Forgotten”, which mandates the deletion of certain data upon request.

- There are options to automatically remove logs of deleted records or automatically delete data after a period of time.

- These options must be enabled by an administrator, so contact informatics@tuftsctsi.org for more information.
Projects on Tufts CTSI’s REDCap installation can now use the **REDCap Mobile App** for data collection.

This is intended for **data collection without internet access**. It is not intended for general data collection, and is not compatible with surveys.

To get more information about the **Mobile App**, please see [this guide](https://tuftsctsi.s3.amazonaws.com/redcap/REDCap_Powerpoints/REDCap_Mobile_App_Guide_20200212.pdf)
...And Many More Features!

- New downloadable test batteries from the REDCap Shared Library
- More settings information stored in Project XML for better backups
- Support for Traditional Chinese in PDF’s
- Expanded “Help and FAQ” page
- Ability to set .csv formatting parameters when exporting
- Option to preserve line breaks in data exports
- “Expand” and “Collapse” buttons for cleaner-looking codebooks
- Improved icons for better look-and-feel and easier navigation
- Customizations for displaying the “Secondary Unique Field”

To see the full release notes, please look at our website at tuftsctsi.org/research-services/informatics/redcap-research-electronic-data-capture/
Request A REDCap Account

To request a REDCap user account or receive other REDCap support, please follow the Request Services link located on our website at www.tuftsctsi.org and we will contact you within 48 hours.

Thank you!