

## REDCap Solid Upgrade Changelog – October 27, 2021

### New Features

- **New feature: More clinical data available via FHIR R4 endpoints for CDIS** - The CDIS services Clinical Data Pull and Clinical Data Mart can now utilize version 4 (called "R4") of the FHIR web services from their local EHR system. The new R4 endpoints include the existing data that could be pulled in earlier versions as well as the following: Adverse Events, Core Characteristics (Observation), Encounters, and Immunizations. Note that "Adverse events" are only available for "research" projects where an IRB number is specified, in which the project's IRB number corresponds to the "Study ID" value from the EHR interface for a particular study (which is often the same as the study's IRB number).
- **Improvements: Other FHIR/CDIS additions**
  - Clinical Data Mart
    1. A new template is used for new DataMart projects when REDCap is set to use R4, including new forms for Encounters, Immunizations, Core Characteristics, Adverse Events.
    2. New option to fetch data in a background process and receive an email when completed.
    3. MRNs can be searched and fetched individually on the Clinical Data Mart page.
  - Epic institutions using the "legacy" app on the Epic App Orchard will be notified on the CDIS Control Center page with info about how to upgrade to the new R4 enabled version.
  - While on the CDIS Control Center page, changing the FHIR client ID will now automatically remove all existing FHIR access tokens stored in the backend. Note: This will not impact any data but will require each CDIS user to perform a standalone launch again or else launch REDCap via the CDP embedded window in the EHR interface before they can begin to pull data again from the EHR.
  - The FHIR statistics in the Control Center now displays CDP instant adjudication.
- **New feature: Fields that are "sql" field type (Dynamic Query - SQL field) now work in the REDCap Mobile App.** In previous versions, they were not functional at all in the mobile app. Now when a project is loaded into the mobile app, any "sql" fields will be converted into static drop-down fields in the app. If new choices get dynamically added to the sql field on the server afterward, the project will need to be loaded again in the mobile app to obtain those choices for the sql field. (Ticket #107409)
- **New feature: Import/export alerts via CSV file on Alerts & Notifications page** - Users may export and import alerts to the same project or another project using a CSV file. If updating an existing alert, the unique alert ID must be included in the CSV file to identify the alert that the user wishes to modify. If the unique alert ID is left blank in the CSV file being uploaded, it is assumed that the user wishes to create a new alert.
- **New feature: Reorder alerts on Alerts & Notifications page** - In the options menu for any given alert, a user can select an alert to be moved to another position on the Alerts & Notifications page. When this is done, it notifies the user that moving the alert will in most cases cause the alert numbers to be renumbered for many existing alerts (since they are numbered

based on their order). However, their alert title and unique alert ID will not change during this process.

- **New feature: Project Dashboards**

- **INTRO:** Project Dashboards are pages with dynamic content that can be added to a project. They can utilize special Smart Variables called Smart Functions, Smart Tables, and Smart Charts (described below) that can perform aggregate mathematical functions, display tables of descriptive statistics, and render various types of charts, respectively. User access privileges are customizable for each dashboard, and anyone with Project Design privileges can create and edit them. A Wizard is provided on the Project Dashboard creation page to help users easily construct the syntax for Smart Functions, Smart Tables, or Smart Charts, and a basic list of helpful examples is also included. Example dashboard: <https://redcap.link/dash1>
- **Setting project dashboards as “public”**
  1. If enabled at the system-level (described in detail below), any project dashboard can be enabled as “public”, which means it can be accessed at a unique URL that does not require any authentication. Making a dashboard public is useful if you wish for people to view it without having to be REDCap users or log into REDCap. Public dashboards are simply standalone pages that can be viewed by anyone with a link to them.
  2. Users can opt to create a custom/short url (via the <https://redcap.link> service) for any project dashboard that is enabled as “public”.
  3. **System-level setting to allow/disallow public dashboards** (on the User Settings page in the Control Center) - By default, normal users will be able to set any project dashboard as public. If you do not want users to do this or even know about this feature, you can completely disable it on the User Settings page. Alternatively, it can be set to “Allow public dashboards with admin approval only”. If set to allow public dashboards after approval by an admin, the admin will receive the request from the user via the To-Do List page (and via email, if the email notification setting is enabled on the To-Do List page), and after the admin approves the request, the user will receive an email regarding the response to their request.
- **Setting to control data privacy on public dashboards and other public pages**
  1. The User Settings page in the Control Center has a setting to define the “Minimum number of data points required to display data for any Smart Charts, Smart Tables, and Smart Functions on a \*public\* project dashboard, survey queue, or survey page”. **By default, it is set to a value of “11”.** While only aggregate data is displayed in Smart Charts, Smart Tables, and Smart Functions, if any of these utilize very few data values, it might pose a threat to an individual’s data privacy if these are being displayed on \*public\* dashboards and other public pages (i.e., where authentication is not used).

2. If someone is viewing a public page that has Smart Charts, Smart Tables, and Smart Functions that utilize data that does not meet the minimum data point requirement, instead of displaying the chart/table/number on the page, it will instead display a notice saying “[INSUFFICIENT AMOUNT OF DATA FOR DISPLAY]” with a pop-up note with details about the minimum data requirements.
  3. **Project-level override:** While this behavior is controlled by a system-level setting, the system-level setting can be modified by an administrator via a project-level override for any given project on the “Edit A Project’s Settings” page.
  4. Note: This setting does not get used when viewing project dashboards inside a project (i.e., at a non-public URL).
- **PDF export:** Each project dashboard can be exported as a one-page PDF file.
  - **Dashboard cache:** To prevent server performance degradation, each project dashboard will have its content cached (stored temporarily) automatically for up to 10 minutes at a time rather than generating its content in real time every time the dashboard is loaded. It will note at the top right corner of the dashboard page when the dashboard content was last cached. If a user is viewing the dashboard inside a project (i.e., not via a public dashboard link), they have the option at the top right to “Refresh” the dashboard at will, which will refresh/generate its content in real time. Note: The refresh option will only be displayed on the page when the dashboard content is at least 30-seconds old.
- **New feature: Smart Functions**
    - Smart Functions are aggregate mathematical functions that are utilized as Smart Variables. The following Smart Functions exist: [aggregate-min], [aggregate-max], [aggregate-mean], [aggregate-median], [aggregate-sum], [aggregate-count], [aggregate-stdev], and [aggregate-unique]. Each represents the mathematical functions minimum, maximum, mean/average, media, sum, count, standard deviation, and unique count, respectively. Each must have at least one field attached to it that follows a colon - e.g., [aggregate-mean:age]. Multiple fields may be used in each one, which will perform the function over all the data values of all the fields. By default, the functions will utilize all data values for all records in the project. To limit the data values being utilized to a subset of the total project data, see the Smart Variable documentation on how to apply filters, such as attached unique report names, DAGs, and other parameters
    - Note: When using [aggregate-count:record\_id], in which “record\_id” in this example represents whatever the variable of the Record ID field is, it performs a special count that does not literally count the number of data values but instead returns a count of the total number of records in the project. This is a quick way to display the total record count of the project.
    - Smart Functions can be used anywhere in a project where piping is allowed, and can even be used inside calculations, branching logic, and other conditional logic (report filters, alert conditions, etc.).

- **New feature: Smart Tables**

- Smart Tables are tables displaying aggregate descriptive statistics in which the results of any or all of the following stats functions can be displayed for one or more fields: minimum, maximum, mean/average, media, sum, count, standard deviation, count of missing values, and count of unique values.
- Smart Tables are represented with the Smart Variable [stats-table], which accepts as a parameter the variable names (comma delimited) of all the fields to be displayed as separate rows in the table. There is no limit to the number of fields that can be used. For example, [stats-table:field1,field2,field3].
- By default, all available columns will be displayed in the table and are as follows: Count, Missing, Unique, Min, Max, Mean, Median, StDev, Sum. To display only a subset of the columns, you may provide any of the following designations (comma-separated) that represent a specific column in the table: count, missing, unique, min, max, mean, median, stdev, sum. For example, [stats-table:field1,field2,field3:mean,max].
- By default, each stats table will have an "Export table (CSV)" link displayed immediately below it to allow users to download the table as a CSV file. But if users wish to hide the export link, they can simply attach “:no-export-link” to the Smart Variable, which will cause the link not to be displayed. For example, [stats-table:field1,field2,field3:no-export-link].
- Smart Tables can be used anywhere in a project where piping is allowed.

- **New feature: Smart Charts**

- Smart Charts are various aggregate plots and charts utilized as different Smart Variables. The following plots are available for use: bar charts, pie charts, donut charts, scatter plots, and line charts. These are all represented by the following Smart Variables, respectively: [bar-chart], [pie-chart], [donut-chart], [scatter-plot], and [line-chart]. These Smart Variables accept one or more field names and also other optional parameters, as described below for each.
- **Bar charts** - Displays a bar chart for a single multiple choice field. It can optionally perform color grouping if a second field (multiple choice only) is provided. The fields must be comma-separated. For example, [bar-chart:field,grouping-field:parameters]. Bar charts have optional parameters that can be applied to alter their appearance. By appending the parameter “:bar-stacked” when two fields are used, the bars in the chart will appear stacked on top of each other rather than side by side. By default, bar charts are displayed with their bars going horizontally, but by appending the parameter “:bar-vertical”, the orientation will be changed to display vertically instead.
- **Pie charts** - Displays a pie chart for a single multiple choice field. For example, [pie-chart:field:parameters].
- **Donut charts** - Displays a donut chart for a single multiple choice field. Note: A donut chart is essentially the same as a pie chart but with the center removed. For example, [donut-chart:field:parameters].
- **Scatter plots** - Displays a scatter plot of one number/date/datetime field for the x-axis and a second field (number field only) for the y-axis. (If a second field is not

provided, a random value will be assigned for the y-axis.) It can optionally perform color grouping if a third field (multiple choice only) is provided. All fields must be comma-separated. For example, [scatter-plot:x-axis-field,y-axis-field,grouping-field:parameters].

- **Line charts** - Displays a line chart of one number/date/datetime field for the x-axis and a second field (number field only) for the y-axis. It can optionally perform color grouping if a third field (multiple choice only) is provided. All fields must be comma-separated. Note: A line chart is essentially the same as a scatter plot except with dots connected with a line. For example, [line-chart:x-axis-field,y-axis-field,grouping-field:parameters].
- **Color blindness accessibility:** Pie charts and donut charts have the ability for the user to enable color blindness accessibility, via a gray link displayed immediately below each chart, in which it overlays different patterns onto the colored pieces of the chart to make each color more distinct for many types of color blindness. This option to enable color blindness accessibility is stored in a secure cookie on the user's device and will be used to remember this choice anytime a pie/donut chart is displayed on any page for any REDCap project for that REDCap server.
- The colors displayed in each chart/plot are preset and are not modifiable.
- Smart Charts can be used anywhere in a project where piping is allowed \*except\* for inside the body of outgoing emails.
- **Optional parameters for Smart Functions, Smart Tables, and Smart Charts**
  - There exist various optional parameters that can be used with Smart Functions, Smart Tables, and Smart Charts to either filter the data used in them (e.g., via a unique report name) or to change their appearance (e.g., bar-vertical). See the descriptions for each below, which are all documented in the Smart Variables documentation.
  - **:R-XXXXXXXXXX Unique Report Name** - For Aggregate Functions, Charts, and Tables, filter the data being used by appending a Unique Report Name. Next to each report on the 'My Reports & Exports' page is its unique report name, which has 'R-' following by alphanumeric characters. By default, all Aggregate Functions, Charts, and Tables will use the values of all records in the project, but if a unique report name is appended to any of them, only data from that specific report will be used. Using a report as a surrogate to filter data is a very useful technique of performing complex filtering logic for Aggregate Functions, Charts, and Tables.
  - **:record-name "record-name"** - For Aggregate Functions, Charts, and Tables, filter the data being used to the \*current record\* by using the literal value 'record-name'. Note: This parameter will only work in a context where a single record is being viewed/accessed, such as on a survey page, data entry form, etc. This parameter can be used with any of the other parameters except unique report names.
  - **:event-name "event-name"** - For Aggregate Functions, Charts, and Tables, filter the data being used to the \*current event\* (longitudinal projects only) by using the literal value 'event-name'. Note: This parameter will only work in a context where a single record/event is being viewed/accessed, such as on a survey page, data entry form,

etc. This parameter can be used with any of the other parameters except unique report names.

- **:unique-event-names Unique Event Names** - For Aggregate Functions, Charts, and Tables, filter the data being used to specific events (longitudinal projects only) by providing an event's unique event name (found on the Define My Events page). You may use one or more unique event names (comma-separated). Note: This parameter can be used with any of the other parameters except unique report names.
- **:user-dag-name "user-dag-name"** - For Aggregate Functions, Charts, and Tables, filter the data being used to the records assigned to the \*current user's Data Access Group\* by using the literal value 'user-dag-name'. Note: This parameter will only work in a context where an authenticated user belongs to a project and has been assigned to a DAG in the project (this excludes survey pages and public project dashboards). This parameter can be used with any of the other parameters except unique report names.
- **:unique-dag-names Unique DAG Names** - For Aggregate Functions, Charts, and Tables, filter the data being used to the records assigned to specific Data Access Groups by providing a DAG's unique group name (found on the Data Access Groups page). You may use one or more unique DAG names (comma-separated). Note: This parameter can be used with any of the other parameters except unique report names.
- **:bar-vertical "bar-vertical"** - Display a bar chart with the bars going vertically instead of horizontally (the default) by using the literal value 'bar-vertical'. Note: This parameter can be used with any of the other parameters.
- **:bar-stacked "bar-stacked"** - Only for bar charts using two fields, display the bar chart with the bars stacked on top of one another for each choice. Whereas the default view is that the bars of each field are displayed side by side to show the color grouping. To enable this, use the literal value 'bar-stacked'. Note: This parameter can be used with any of the other parameters.
- **:no-export-link "bar-stacked"** - Only for bar charts using two fields, display the bar chart with the bars stacked on top of one another for each choice. Whereas the default view is that the bars of each field are displayed side by side to show the color grouping. To enable this, use the literal value 'bar-stacked'. Note: This parameter can be used with any of the other parameters.
- **NOTE: Using Smart Functions/Tables/Charts elsewhere in a project** - While project dashboards are an excellent place to use Smart Functions, Smart Tables, and Smart Charts, it is important to know that Smart Functions/Tables/Charts can actually be used \*almost anywhere\* in a project, such as on data entry forms, on survey pages, and in report instructions (to name a few). You can use Smart Functions/Tables/Charts anywhere that piping can be used. Click the green "Smart Variables" button on the Project Setup page to learn more about them. Note: The only place that Smart Charts cannot be used is inside the body of outgoing emails.
- **NOTE: Smart Functions/Tables/Charts do not yet work in the REDCap Mobile App**; however, it is planned that they eventually will (to a certain degree).

- **NOTE regarding permissions for Smart Functions/Tables/Charts:**
  - DAG permissions (i.e., filtering out records not assigned to the current user's DAG) are **NOT applied by default** to Smart Charts/Tables/Functions but are only applied when the Smart Chart/Table/Function utilizes a unique report name as a parameter (thus mimicking the natural DAG-filtering behavior of reports themselves) OR when the Smart Chart/Table/Function utilizes the "user-dag-name" parameter. This means that if a user is assigned to a DAG and views a project dashboard with the Smart Chart [scatter-plot:weight], for example, the plot will display data for ALL records in the project and not just the user's DAG. To limit the plot to just data in the user's DAG, it could be changed to [scatter-plot:weight:user-dag-name] in this case.
  - Smart Charts/Tables/Functions that utilize a unique report name as a parameter for data filtering purposes will still function and display normally even if the user does not have explicit access to view that specific report referenced as a parameter.
- **New feature: CSV Delimiter as a user-level preference** - The My Profile page now has a new user preference to allow a user to set their own preferred CSV delimiter (e.g., comma, semi-colon) that will be used as the delimiter character in all CSV file downloads throughout REDCap, such as data dictionary import/export, event import/export, user rights import/export, etc. This setting is not used by data imports and exports because those already have a way to specify the CSV delimiter manually. The system-level default value for this user preference can be set on the User Settings page in the Control Center, in which all new users created afterward will have their user-level preference set with this system-level default value. To modify all existing users' preference after upgrading (if your users would not want a comma delimiter), it will require running an "update" query in the database, such as this: `UPDATE redcap_user_information SET `csv_delimiter` = ';' ;`
- **New feature: Field that maps to a participant's Twilio delivery preference** - When using Twilio for surveys, users can control each participant's invitation preference automatically using a multiple choice field. If survey participants require using different methods (e.g., email, SMS w/ link, voice call survey) for receiving survey invitations and/or taking surveys, users can select a multiple choice field whose choices represent each survey invitation delivery method. After mapping the invitation preferences to a field, whenever the value of the field is added or modified, the participant's invitation preference will automatically be changed accordingly. **IMPORTANT:** The multiple choice codings for the selected field must be defined exactly as delineated below, although their corresponding choice labels can be modified to be whatever text the user desires. Also be aware that if the value of the field that is mapped is set to blank/null, then the invitation preference for the participant will revert to the project's default invitation preference (as defined in the Twilio configuration on Project Setup). Additionally, if a participant's invitation preference is modified via the Participant List, that change will also change the value of the mapping field selected above. Mapped field choice options:
  - EMAIL, Email invitation
  - SMS\_INVITE\_WEB, SMS invitation (contains survey link)
  - SMS\_INITIATE, SMS invitation (take survey via SMS)
  - VOICE\_INITIATE, Voice call (participant receives voice call)

- SMS\_INVITE\_MAKE\_CALL, SMS invitation (contains phone number to call)
  - SMS\_INVITE\_RECEIVE\_CALL, SMS invitation (reply via SMS to receive voice call)
- **New feature: Instant Adjudication for Clinical Data Pull (CDP)** with improved CDP Field Mapping page
  - Once enabled here for the whole system via the CDIS page, the Clinical Data Pull "Instant Adjudication" setting can be enabled on a CDP project's field mapping page, after which it will allow users to bypass the normal data adjudication process and will let them import and save all data into the project that has already been cached from the EHR system. This can save a great deal of time when importing lots of patient records. After Instant Adjudication is enabled in a CDP project, users with CDP-adjudication privileges will see the button to initiate this process on the Record Status Dashboard. After the button is clicked, it will begin adjudicating the EHR data for all records in real time, thus saving the data into records in the projects. On the CDIS page in the Control Center, administrators can enable or disable the Instant Adjudication feature for all CDP-enabled projects in the system. By default, the system-level Instant Adjudication option is enabled.
  - Also, the user interface for the CDP Field Mapping page in all CDP-enabled projects has been updated and improved to allow users to more quickly and easily map their REDCap fields to EHR fields for their CDP project.
- **Improvement: Custom ranges (min/max) for slider fields** - Users may now set a custom minimum and/or custom maximum integer value for slider fields. The default min and max is still 0 and 100, respectively. If no value is entered for the min or max value, it will assume the default value. These can be set via the Edit Field popup in the Online Designer, and via the "Text Validation Min" and "Text Validation Max" columns in the Data Dictionary.
- **New feature: New API "Export Logging" method** - This new API method allows users to export a project's logging via the API using very similar methods and filters as in the project's user interface. See the documentation for all filter parameters that are available.
- **New feature: Ability to import/export user rights** via a CSV file on the User Rights page - Users can download a CSV file to view all the user privileges of the existing users in a project, including their instrument-level user rights. Users can upload a CSV file to grant new users access to the project and/or to modify the user privileges of existing users, including their instrument-level user rights.
- **New feature: Field Bank** - When adding new fields via the Online Designer, users will see an "Import from Field Bank" button, which will allow them to search different standardized catalogs of commonly used fields, such as in the U.S. National Library of Medicine catalog. The Field Bank helps users add new fields quickly and easily to their data collection instruments. Over time, more standardized catalogs of fields will be added to the Field Bank.
- **New feature: @INLINE action tag**- Allows a PDF file or image file (JPG, JPEG, GIF, PNG, TIF, BMP) that is uploaded to a File Upload field to be displayed in an inline manner on the survey page or data entry form so that the PDF/image can be viewed by the user or survey participant without having to download it.

- The PDF/image will be displayed inline on the page immediately above the download link for the field and will be displayed with 100% width by default (i.e., 100% width of the area in which it is contained).
- Images will be displayed with their native width:height ratio, although PDFs will be displayed with a 300 pixel height by default. If you wish to manually set the width and/or height of the image/PDF, you may put the width/height values inside parentheses after the action tag in the following manner: @INLINE(width) or @INLINE(width,height). The width/height can be a percentage value (e.g., 50%) or a number representing size in pixels (e.g., 400). Thus @INLINE(50%) will display an image at 50% size for the area in which it is contained on the page, and @INLINE(400,100) would display the image always at 400px tall and 100px wide. To make an inline PDF appear taller on the page, you might use @INLINE(100%,600) since 300px is the default height for inline PDFs.
- The @INLINE action tag also works if the File Upload field is embedded inside another field on the page.
- Thanks to Andy Martin for his inspiration for this feature, in which it is based on his “Image Viewer” external module. NOTE: Upgrading to REDCap 10.7.0 will \*not\* automatically disable the “Image Viewer” module if it is installed and enabled on any projects, nor will it conflict with the “Image Viewer” external module.
- **New feature: New “:inline” piping option for File Upload fields**
  - If piping using the ':inline' option for a File Upload field, such as [my\_field:inline], in which the uploaded file is a PDF file or image file (JPG, JPEG, GIF, PNG, TIF, BMP), the file will be displayed in an inline manner so that it is viewable on the page.
  - The ':inline' option DOES work inside emails, so you can pipe a field with ':inline' inside the email body, thus allowing you to display inline images inside survey invitations or Alerts & Notifications.
  - The @INLINE action tag does not need to be used on a field in order to utilize the “:inline” piping option.
  - Note: Inline images are not able to be displayed inside a downloaded PDF of a survey/instrument that contains data.
- **New feature: New logic editor for conditional logic, branching logic, calculations, report filters, etc.** In every place where users might add/edit logic or calculations, the new logic editor will be displayed in a modal dialog to provide a better user experience for entering their logic. The logic editor provides much more space for entering large amounts of logic, including a fullscreen mode to take maximum advantage of their screen’s real estate. It also provides bracket-matching and parentheses-matching where it will highlight a pair of matching brackets/parentheses to make it easier for users to gauge which brackets/parentheses belong together in the logic, thus reducing possible errors in the logic when typing.
- **New feature: Auto-numbering of repeating instances for data imports** - When using repeating events or repeating instruments, it may be difficult when performing dynamic imports of data for these because it is not easily known how many repeating instances already exist in a project for a given repeating event/instrument, thus often forcing users to

invent clever ways to determine this, such as performing data exports beforehand and then dynamically determining what the next repeating instance number should be. However, that is no longer necessary. When performing a data import now for a repeating event/instrument, users may use the literal value “new” as the value for the “redcap\_repeat\_instance” field in their data import. By doing so, REDCap will perform the instance auto-numbering on its own to increment the repeating instances properly based on the highest numbered instance that already exists in the saved data in the project.

- **New feature: New survey option “Save a PDF of completed survey response to a File Upload field”** - On the Survey Settings page in the Online Designer, users may select a File Upload field in the project where a static PDF file of a participant’s survey response will be stored immediately after they complete the survey. For longitudinal projects, if the target field exists on multiple events, users may set this feature so that it stores the PDF in the selected field in the current event (default) or else in a specific event in the project. Thanks to Philip Chase and his team at University of Florida for their inspiration for this feature, in which it was based on their “Save Survey PDF to Field” external module. NOTE: Upgrading to REDCap 10.6.0 will *not* automatically disable the “Save Survey PDF to Field” module if it is installed and enabled on any projects, nor will it transfer the saved settings of that module into this new feature in REDCap.
- **New action tag: @PREFILL** - Sets a field's value to static text or dynamic/piped text whenever a data entry form or survey page is loaded, in which it will always overwrite an existing value of the field. The format must follow the pattern @PREFILL="????", in which the desired value should be inside single or double quotes. A field with @PREFILL will always be read-only, thus its value cannot be modified manually on the data entry form or survey page. For text fields, you may pipe and concatenate values from other fields in the project - e.g., @PREFILL='Name: [first\_name] [last\_name], DOB: [dob]'. For checkbox fields, simply separate multiple checkbox values with commas - e.g., @PREFILL='1,3,[other\_field:value]'. NOTE: The piped value does *not* get applied during any data imports (via API or Data Import Tool) but only operates when viewing survey pages and data entry forms. NOTE: A field with @PREFILL will have its value updated ONLY when the page loads, which means that its value will not be updated in real-time if you modify other fields on the same page that are piped into the @PREFILL tag. NOTE: If being used on a date or datetime field, the date value inside the quotes must be in Y-M-D format - e.g., @PREFILL='2007-12-25' - regardless of the field's set date format. NOTE: The only difference between @PREFILL and @DEFAULT is that @DEFAULT is only applied when an instrument has no data yet, whereas @PREFILL will always be applied on an instrument, meaning that @PREFILL will ALWAYS overwrite the value if a field value already exists. TIP: To pipe the value of one multiple choice field into another multiple choice field, make sure you append ':value' to the variable being piped - e.g., @PREFILL='[my\_dropdown:value]'.  
NOTE: The only difference between @PREFILL and @DEFAULT is that @DEFAULT is only applied when an instrument has no data yet, whereas @PREFILL will always be applied on an instrument, meaning that @PREFILL will ALWAYS overwrite the value if a field value already exists. TIP: To pipe the value of one multiple choice field into another multiple choice field, make sure you append ':value' to the variable being piped - e.g., @PREFILL='[my\_dropdown:value]'.
- **New special functions:** left(), right(), mid(), length(), find(), trim(), upper(), lower(), and concat(). These nine new functions can be specifically used when dealing with text values and may be especially useful when using them in conjunction with the @CALCTEXT action tag. To learn more and to see some practical examples of their usage, click the blue 'Special Functions' button in the Online Designer in any project.

- **left** (*text, number of characters*) - Returns the leftmost characters from a text value. For example, left([last\_name], 3) would return 'Tay' if the value of [last\_name] is 'Taylor'.
- **right** (*text, number of characters*) - Returns the rightmost characters from a text value. For example, right([last\_name], 4) would return 'ylor' if the value of [last\_name] is 'Taylor'.
- **length** (*text*) - Returns the number of characters in a text string. For example, length([last\_name]) would return '6' if the value of [last\_name] is 'Taylor'.
- **find** (*needle, haystack*) - Finds one text value within another. Is case insensitive. The "needle" may be one or more characters long. For example, find('y', [last\_name]) would return '3' if the value of [last\_name] is 'Taylor'. The value '0' will be returned if "needle" is not found within "haystack".
- **mid** (*text, start position, number of characters*) - Returns a specific number of characters from a text string starting at the position you specify. The second parameter denotes the starting position, in which the beginning of the text value would be '1'. The third parameter represents how many characters to return. For example, mid([last\_name], 2, 3) would return 'AYL' if the value of [last\_name] is 'TAYLOR'.
- **concat** (*text,text,...*) - Combines/concatenates the text from multiple text strings into a single text value. For example, concat([first\_name], ' ', [last\_name]) would return something like 'Rob Taylor'. Each item inside the function must be separated by commas. Each item might be static text (wrapped in single quotes or double quotes), a field variable, or a Smart Variable.
- **upper** (*text*) - Converts text to uppercase. For example, upper('John Doe') will return 'JOHN DOE'.
- **lower** (*text*) - Converts text to lowercase. For example, lower('John Doe') will return 'john doe'.
- **trim** (*text*) - Removes any spaces from both the beginning and end of a text value. For example, trim(' Sentence with spaces on end. ') will return 'Sentence with spaces on end.'.
- **New action tag: @CALCDATE** - Performs a date calculation by adding or subtracting a specified amount of time from a specified date or datetime field and then provides the result as a date or datetime value - e.g., @CALCDATE([visit\_date], 7, 'd'). The first parameter inside the @CALCDATE() function should be a text field with date, datetime, or datetime\_seconds validation, in which you may specify (if needed) the event and repeating instance - e.g., @CALCDATE([baseline\_event][visit\_date], 7, 'd'). The second parameter represents the offset number amount that should be added or subtracted. It can be a decimal number or integer. Tip: To subtract (i.e., go backwards in time), use a negative number. The third parameter represents the units of the offset amount, which will be represented by the following options: 'y' (years, 1 year = 365.2425 days), 'M' (months, 1 month = 30.44 days), 'd' (days), 'h' (hours), 'm' (minutes), 's' (seconds). The unit option must be wrapped in quotes or apostrophes. NOTE: Both the source field and the result field must be a text field with date, datetime, or datetime\_seconds validation. It is important to realize that a field with

@CALCDATE will not be editable on the survey page or data entry form, and the field will function almost exactly like a normal calculated field, in which its value may get updated via a data import, when running Data Quality rule H, or in real-time during normal data entry on a form or survey.

- **New action tag: @CALCTEXT** - Evaluates logic that is provided inside a @CALCTEXT() function and outputs the result as text, typically performed with an if(x,y,z) function - e.g., @CALCTEXT(if([gender]='1', 'male', 'female')). NOTE: It is important to realize that a field with @CALCTEXT will not be editable on the survey page or data entry form, and the field will function almost exactly like a normal calculated field, in which its value may get updated via a data import, when running Data Quality rule H, or in real-time during normal data entry on a form or survey. If desired, it is possible to return the value as a number - e.g., @CALCTEXT(if([age] >= 18, 'adult', 5\*[other\_field])).
- **New feature: Data Access Group import/export and DAG-User assignment**  
**import/export** - The Data Access Groups page in a project now displays a drop-down list of options for users to import/export Data Access Groups, which allows users to bulk create or rename DAGs via a CSV file. It also allows for the import/export of DAG-user assignments via CSV file to bulk assign/reassign/unassign users from DAGs in a project. Note: The DAG-user assignment import affects only a user's \*current\* DAG assignment; thus, it has no effect on the DAG Switcher assignments for the user.
- **New feature: Data Quality Rule import/export** - The Data Quality page in a project now displays a drop-down list of options for users to import/export custom Data Quality rules via a CSV file. Note: This does not apply to the pre-defined DQ rules (rules A-I). Also, when DQ rules are imported, the process is additive only, meaning that the CSV upload cannot replace or edit existing DQ rules but will only add new ones to the project.
- **New feature:** Added "Language of text to be spoken" for the "Text-To-Speech" survey functionality, which is available on the Survey Settings page. For several years, REDCap has had a Text-to-Speech feature for surveys that, when enabled, allows questions and other text on survey pages to be converted into natural-sounding audio for the participant to hear. Up until now, it supported English only, but now REDCap users may utilize the Text-to-Speech feature in a variety of non-English languages and voices, assuming that the survey text is in a non-English language. This includes Arabic, Brazilian Portuguese, English (UK and US), French, German, Italian, Japanese, and Spanish (Castilian, Latin American, and North American).
- **New feature:** Users may re-evaluate some or all Automated Survey Invitations for all records in a project. If an ASI has been modified after data has already been entered in the project, users may click the "Re-evaluate Auto Invitations" button in the Online Designer, which will re-evaluate selected ASIs for all records to ensure that invitations get properly sent or scheduled based on the new conditions of the ASI (otherwise they could only be triggered if each individual record had data modified). If a user modifies the conditional logic of an ASI, it will recommend that they utilize the "Re-evaluate Auto Invitations" functionality. If an ASI has the "Ensure logic is still true..." option checked, then it is possible during this process that some already-scheduled invitations might get removed (and thus would no longer be scheduled) based on the new conditions.

- **New feature:** Users may re-evaluate some or all Alerts & Notifications for all records in a project. If an alert has been modified after data has already been entered in the project, users may click the “Re-evaluate Alerts” button on the Alerts & Notifications page, which will re-evaluate selected alerts for all records to ensure that notifications get properly sent or scheduled based on the new conditions of the alert (otherwise they could only be triggered if each individual record had data modified). If a user modifies the conditional logic of an alert, it will recommend that they utilize the “Re-evaluate Alerts” functionality. If an alert has the “Ensure logic is still true...” option checked, then it is possible during this process that some already-scheduled notifications might get removed (and thus would no longer be scheduled) based on the new conditions.
- **New feature: Integration of Paul Litwin's Stealth Queue external module**
  - New “Keep the Survey Queue hidden from participants?” setting in the “Set up Survey Queue” dialog on the Online Designer
  - This setting will keep the Survey Queue table hidden from participants, and will force Auto Start to be enabled for all queue-activated surveys. This is useful if users wish to use the Survey Queue to automatically guide survey participants to the next survey without displaying the queue of surveys.
- **New hook: redcap\_survey\_acknowledgement\_page** - Allows custom actions to be performed on a survey's acknowledgement/"thank you" page immediately after the survey has been completed. Note: This hook is different from the redcap\_survey\_complete hook because the redcap\_survey\_complete hook is not recommended if you wish to output HTML, CSS, or JS onto the survey page after the survey is completed (because the page may be redirected immediately after the survey is completed, thus the participant might never see anything output by this hook prior to the redirect). The redcap\_survey\_acknowledgement\_page hook is recommended for outputting HTML, CSS, or JS onto the survey page after the survey is completed.
- **New feature: Granular administrator privileges-** There now exist seven different categories of privileges that may be attributed to a REDCap administrator. If a user has at least one admin privilege, they are considered a REDCap administrator and thus will be able to access the Control Center; however, they will only be able to access the things to which they have been granted access. Note: Following the upgrade to v10.1.0, any users who were designated as REDCap administrators beforehand will now have all seven categories enabled. Thus they will not lose any privileges at all after the upgrade. Listed below are each of the admin privilege categories and an explanation of what they mean and where they apply.
  - **Set REDCap Administrator Privileges** – User can access the 'Administrator Privileges' page (i.e., this page), and can set admin rights for any user.
  - **Access to all projects and data with maximum user privileges** – User has full access to all REDCap projects in the system and has maximum privileges within those projects. Within the Control Center interface, the user can access and use the following pages that pertain to project administration: To-Do List, Survey Link Lookup, and API Tokens.

- **Manage user accounts** – User can access, modify, and (if using Table-based authentication) create REDCap user accounts. The following pages can be accessed and utilized: Browse Users, Add Users, User Allowlist, and Email Users.
- **Modify system configuration pages** – User can modify settings on all system configuration pages in the Control Center, which includes all pages listed under the 'Miscellaneous Modules' and 'System Configuration' sections on the left-hand menu. Note: If the user does not have this specific privilege but does have at least one other administrator privilege, they may still access and view the system configuration pages but only in read-only mode.
- **Perform REDCap upgrades** – User can access tools used for upgrading the REDCap software, including notifications about new versions available and also accessing the Easy Upgrade feature (if enabled). Note: This admin privilege does not apply when upgrading REDCap using traditional methods (i.e., when not using the Easy Upgrade) because the traditional upgrade process occurs mostly outside of the REDCap user interface in a database client and via direct server access.
- **Install, upgrade, and configure External Modules** – User has the ability to install External Modules from the REDCap Repo, and can enable and configure them at the system level. This does not apply to enabling and configuring an External Module in a project, which is governed by other user privileges. Note: If the user does not have this specific privilege but does have at least one other administrator privilege, they may still access and view the External Modules page in the Control Center but only in read-only mode.
- **Access to Control Center dashboards** – User can access and utilize all pages listed under the 'Dashboard' section of the Control Center's left-hand menu.

## Bug Fixes / Improvements

### Version 10.0.26

- Bug fix: If a checkbox field whose variable name matches a PHP function (including REDCap-defined PHP functions) is used in conditional logic, report filter logic, branching logic, calculations, etc., it would not get parsed correctly, and the logic/calculation would mistakenly be considered syntactically invalid.
- Bug fix: When viewing the project Logging page, any "Sent Alert" logged events that pertain to records would mistakenly not be displayed on the page when filtering by record name. (Ticket #95222)
- Bug fix: When importing data via the Data Import Tool for a Text Field with min/max range validation, if the value being imported is out of range, it would correctly display it inside an orange box but would mistakenly fail to list the existing value in red below the new value if the field already contained an existing value.
- Bug fix: When an administrator is approving Draft Mode changes for a production project in the To-Do List, the dialog popup on the page would mistakenly not close itself after an action was taken on that To-Do List item. (Ticket #95292)
- Bug fix: When using the @DEFAULT action tag on an instrument that is not the first instrument, if the record has the record name "0" and is an existing record, the action tag would fail to work successfully. (Ticket #95296)

### Version 10.0.27

- Bug fix: One Laboratory field and its associated LOINC code was not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: When using Missing Data Codes in a project that has a drop-down field or a radio button field with a @NOMISSING action tag, in which one of the choice codings of the drop-down/radio is exactly the same as a Missing Data Code, if the field's value was set to a choice that corresponds to a Missing Data Code, after saving the data entry form and then returning to it later, the field would mistakenly be disabled on the page, thus preventing anyone from changing its value. In this scenario, the field should not be disabled if the @NOMISSING action tag is being used. (Ticket #95510)
- Bug fix: When an admin is using the "View Project as User" feature in a project, it might mistakenly display the "External Modules" link on the left-hand menu, even though the user being impersonated would never actually see that link displayed. (Ticket #95371)
- Bug fix: When exporting a PDF of saved data, if the PDF contains a survey response in which a Participant Identifier value had been entered into the Participant List for that participant, the PDF would mistakenly always display the Participant Identifier at the top right corner of the PDF. If a user that has De-Identified export privileges or Remove Identifier export privileges is exporting the PDF, or if a survey participant is exporting the PDF of their own responses, it should not display the Participant Identifier inside the PDF. (Ticket #95435)

- Bug fix: When importing certain PROMIS instruments or batteries from the REDCap Shared Library in which the instrument contains a T-Score and Standard Error field, if the PROMIS instrument is viewed as a data entry form in the REDCap interface, it might mistakenly display a branching logic error on the page. In these cases, the bug cannot be fixed except by deleting the instrument from the project (beware: this might delete or orphan any already-collected survey responses for the PROMIS instrument) and then by re-downloading it from the Shared Library. Bug emerged in REDCap 9.10.0 Standard and 9.5.28 LTS. NOTE: This would not impact the display of the PROMIS instrument when being taken as a survey by a participant.
- Bug fix: When assigning records to Data Access Groups via data import, in certain scenarios the records being imported would get assigned to DAGs properly but the Record List Cache would mistakenly not get updated during the import process, thus causing specific pages (e.g., reports, Record Status Dashboard) not to display those records when filtering by their DAG. If this issue occurred, the only thing that would fix it would be for an admin to know to click the "Clear the Record List Cache" button in the project. (Ticket #95133)
- Bug fix: When an alert is set to be triggered by "Using conditional logic during a data import or data entry", in which the conditional logic contains "datediff" with the "today" or "now" parameter, even if the alert is set to only send once per record, it would mistakenly keep re-sending/re-scheduling the alert every four hours, which is the frequency of the Alert+Datediff cron job. (Ticket #93783)
- Bug fix: The User Access Dashboard's drop-down list filter of project statuses mistakenly included "Archived" projects, which is a mistake since "Archived" is no longer a valid option for a project status as of REDCap 9.8.0.

#### Version 10.0.28

- **Major bug fix:** If a user is in a classic/non-longitudinal project and selects an instrument after clicking the "Show data collection instruments" link on the left-hand menu, the instrument page displaying the record drop-down lists would mistakenly be only partially displayed due to a fatal PHP error on the page.

#### Version 10.0.29

- Bug fix: In the Add/Edit Field popup in the Online Designer, if the user selects "Slider" from the Field Type drop-down, whenever they have their cursor inside any of the fields in the "Labels displayed above slider" section in the popup and then they click Enter on their keyboard, it would mistakenly display an unrelated popup dialog about SQL Fields. (Ticket #96061)
- Bug fix: If using the Smart Variables [form-link], [form-url], [survey-link], [survey-url], [survey-queue-link], [survey-queue-url], [survey-time-completed], or [survey-date-completed] in branching logic or in a calculated field's equation, an error message might mistakenly display on the data entry form or survey page saying that there is something syntactically incorrect about the logic/calculation. (Ticket #96080)

- Bug fix: When new records are created rapidly in a project, especially when they are created nearly simultaneously, it could cause the record list cache on the database back-end to mistakenly get out of sync, thus causing record dashboards, reports, etc. to display the records in an incorrect order. (Ticket #94027)
- Bug fix: If a field with variable name "title" is used in the branching logic of another field, it would mistakenly display a branching logic error on the page. (Ticket #96154)
- Bug fix: If a data entry form or survey page has many fields with branching logic, the page might load unexpectedly slow because of an inefficiency with the process of checking if any embedded fields exist on the page. The inefficient code has been fixed so that if field embedding is not being used on a data entry form or survey page, the branching logic of all fields on the page will be processed 10x-30x faster than in previous versions of REDCap 10.X, thus making the page load much more quickly, especially when the instrument contains many fields. (Ticket #92556)
- Bug fix: If a Signature field or File Upload field is embedded inside another field on an instrument, if the field is Left-aligned (LV or LH) and the instrument has been taken as a survey, in which the survey participant has uploaded a file for the field, the field would fail to embed and would appear invisible when viewed on a data entry form prior to the user clicking the "Edit response" button.
- Bug fix: If the record name is very long for a record in a project, the record name in the Action column of the Logging page might overflow onto other text in the Logging table, thus sometimes making it unreadable.
- Bug fix: If a survey has the e-Consent Framework enabled and is using a survey theme, the e-Consent certification box and text on the last page of the survey would mistakenly not respect the survey theme colors. (Ticket #96277)

#### Version 10.0.30

- Bug fix: If a user is using REDCap Messenger, the height of the Messenger window might not get calculated correctly and thus might mistakenly run off the bottom of the page (making it impossible to read all the messages) or else might leave unnecessary extra space at the bottom of the page.
- Bug fix: In a longitudinal project where a checkbox field is referenced in the branching logic and/or calculation of another field on the same instrument, in which the branching logic or calculation references that checkbox field on the same event and also on other events (i.e., cross-event logic/calc), the branching logic and/or calculation will evaluate correctly when the page is initially loaded, but if the checkbox's value gets modified on that page by checking/unchecking any of its choices, the branching logic and/or calculation might begin not to evaluate correctly anymore on that page until the page is refreshed or returned to at a later time. (Ticket #95744)
- Bug fix: Forty-three Laboratory fields and their associated LOINC codes were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: The "View project as user" feature would mistakenly not work correctly on the Other Functionality page in a project, and thus it might display some things that it should not and also might hide some things that should be displayed.

- Bug fix: The "Time Limit for Survey Completion" option on the Survey Settings page would mistakenly not function correctly if using MySQL 8. (Ticket #94256)
- Bug fix: When a repeating instrument is enabled as a repeating multi-page survey in a longitudinal project, and all the fields on a given survey page are hidden by branching logic, in which the the fields in the branching logic does not have [current-instance] appended to them, then in certain circumstances a survey page might mistakenly get skipped while a participant is taking the survey. (Ticket #96426)
- Bug fix: The ontology Current Procedural Terminology (CPT) was removed from the list of BioPortal Ontology Services since that ontology is no longer usable by the BioPortal service due to licensing reasons.

#### Version 10.0.31

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL on certain REDCap pages. (Ticket #97362)
- **Minor security fix:** A Blind SQL Injection vulnerability was found on the User Rights page, in which a malicious user could potentially exploit it by manipulating an HTTP request on that page. (Ticket #97347)
- **Minor security fix:** An Unrestricted File Upload vulnerability was found on the API Playground page, in which a malicious user could potentially exploit it by manipulating an HTTP request on that page for the Import File API method. (Ticket #97372)
- Bug fix: When an Automated Survey Invitation is triggered by a data import where a new record is being create, and the ASI email body contains a [survey-link] or [survey-url] Smart Variable that points to a survey other than the current one for which the ASI is being triggered, it would mistakenly not pipe the survey link/URL successfully into the email body. (Ticket #96305)
- Bug fix: If the REDCap web server is running a version of PHP that is higher than the recommended PHP versions supported by REDCap, the "Server info" text at the top of the main Control Center page might mistakenly display a warning with incorrect text about the need to upgrade PHP. (Ticket #96749)
- Bug fix: When viewing certain adaptive instruments that have been downloaded from the REDCap Shared Library, in which one of the multiple choice options has both a code and value of "0", the label for that choice would mistakenly not be displayed next to its radio button, so it would appear not to have a label.
- Bug fix: For the Data Mart and Clinical Data Pull services, the action "Fetching data from FHIR endpoint" was mistakenly getting logged on the project Logging page for every time that REDCap would make a call to the EHR, even when no new data is stored in REDCap from the EHR. It should not have been logging that but instead only logging when data points are actually imported.
- Bug fix: When moving a project to production and deleting all records in the process, or if a user clicks the "Erase all data" button in a development project, any records that have been locked at the record level would mistakenly still have their locked status maintained after the record

deletion. This could cause issues in the future if a record is created afterward and has the same record name as a previously-locked record. (Ticket #97167)

- Bug fix: When a plugin, hook, or external module calls the method REDCap::getProjectXML(), it would mistakenly not include the "redcap::SurveysGroup" entry and other project-level information in the resulting XML. (Ticket #97151)
- Bug fix: When viewing a data entry form that has drop-down fields with the auto-complete option enabled, the drop-down list might mistakenly be displayed incorrectly as if it is very narrow and has no options to select. Note: This issue occurs on data entry forms but not on survey pages.
- Bug fix: The survey-date-complete or survey-time-complete Smart Variable would mistakenly not work correctly in some calculations and in many cases would display a calculation error message. Bug emerged in REDCap 10.0.29 LTS and 10.5.2 Standard. (Ticket #97057)

#### Version 10.0.32

- **Minor security fix:** Due to a vulnerability in the third-party JavaScript library "Handlebars", the library was updated to the latest version. (Ticket #97725)
- **Minor security fix:** Due to a vulnerability in the third-party library TinyMCE, the library was updated to the latest version. (Ticket #97725)
- **Minor security fix:** The "Prevent Clickjacking" security feature would mistakenly not work successfully on a certain page when that page is called in an unexpected manner without a "pid" parameter in the URL. (Ticket #97736)
- **Minor security fix:** A Cross-Site Request Forgery (CSRF) vulnerability was discovered where a malicious user could potentially bypass the CSRF check by adding a specific parameter to HTTP requests in the application.
- Bug fix: If a user clicks on a status icon for a repeating instrument on the Record Status Dashboard, in which there are many repeating instances for the record-instrument, it might display the popup list of repeating instances so that they mistakenly run off the top of the page, making it impossible to close the floating popup or to view it completely.
- Bug fix: If a radio button or slider field has a Missing Data Code as its value, clicking the "reset" link next to the field would mistakenly not remove the Missing Data Code label from the user interface below the field, even though it would correctly set the value to blank/null for the field. (Ticket #97028)
- Bug fix: If a slider field has a value and is being hidden by branching logic, in some scenarios it might mistakenly display the "survey errors exist" error on surveys or might keep displaying the "erase value" prompt repetitively in an infinite loop on a data entry form. (Ticket #97395)
- Bug fix: If a survey participant clicks the "Survey Queue" icon at the top right of the survey page, in which the queue contains a lot of items so much that the queue is taller than the page itself, the queue would mistakenly run off the top or bottom of the page and would not be closable. (Ticket #96613)
- Bug fix: If a survey title contains HTML tags, the tags would mistakenly be displayed in the drop-down list of surveys in the Participant List.

- Bug fix: If a date or datetime field is embedded inside the choice label of a checkbox field, clicking the Today/Now button for the embedded date/datetime field would mistakenly check or uncheck the checkbox choice in which it is embedded. (Ticket #97719)
- Bug fix: On the Alerts & Notifications page, when modifying an alert that previously had the option set to send it "Every time the form/survey in Step 1B is X", and then when the alert was later opened after being saved, if it was changed in Step 1A (selecting the third radio option) so that that choice was no longer viable and was hidden in the dialog, it would still keep the alert listed as a recurring alert in the backend database table, which could cause it to not get triggered or sent at the correct times. Note: This fix will prevent this issue from occurring in the future and will also retroactively fix any alerts that have been saved incorrectly due to this bug. (Ticket #97507)
- Bug fix: 13 Laboratory and Vital Signs fields and their associated LOINC codes were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: When calling the "Export List of Export Field Names" API method or the REDCap::getExportFieldNames() method for a project that has Missing Data Codes defined, it would mistakenly fail to add the Missing Data Codes as extra choice options for checkbox fields (excluding fields with the @NOMISSING action tag). (Ticket #96240)
- Bug fix: When a project is being permanently deleted (either by an administrator on the Browse Projects page or via the cron job 30 days after a user has "deleted" the project), it would mistakenly fail to log the very last event for the project (i.e., that the project is itself being permanently deleted), which should include the following info about the project in this last logged event: the project title, project ID, number of fields, number of records, current project status, and list of current project users.
- Bug fix: When processing a user request on the To-Do List page, in which the user making the request has an apostrophe in their email address, it might cause the request not to load successfully in the dialog on the To-Do List page. This only affects certain types of requests, such as moving a project to production. (Ticket #96958)
- Bug fix: When a matrix field is embedded inside another field on a survey page or data entry form, in which some other fields on the page contain branching logic that reference the embedded matrix field, the branching logic might silently fail to show or hide the other field correctly. (Ticket #97114)
- Bug fix: When accessing the REDCap server from a domain that is not the domain seen in the REDCap Base URL value (i.e., when using REDCap over multiple domains), the HTTP redirecting that occurs when REDCap is building a project's record list cache (which is an automatic process), would mistakenly redirect the user to the other domain that is set in the REDCap Base URL. Thus the user ends up on the other server/domain by mistake. It now keeps the user on the current domain during this redirect process. (Ticket #97777)
- Bug fix: When an administrator is using the "View Project as User" feature, the "Dynamic Query (SQL) Field" option would mistakenly be displayed for them when adding a new field in the Online Designer. (Ticket #96865)
- Bug fix: The Java code that is auto-generated by the API Playground mistakenly had some missing closing parentheses in the MyClass constructor. (Ticket #96565)

- Bug fix: The Java code that is auto-generated by the API Playground mistakenly had some syntactical errors for certain API methods. (Ticket #97855)
- Bug fix: In a longitudinal project where a field is used both in a non-repeating context and in a repeating instrument or repeating event, if a calculation or branching logic references the field in which it has the Smart Variable "[current-instance]" appended to it, the calc/logic might not get parsed correctly in the non-repeating context and thus would cause the calculation/branching logic not to evaluate correctly. (Ticket #96777)
- Bug fix: When a field is embedded using the ":icons" attribute (e.g., {date\_of\_birth:icons}), it might not display correctly on the page, in which it might be displaying too widely or creating unnecessary text wrapping. (Ticket #96838)

### Version 10.0.33

- **Major bug fix:** If using the datediff() function in a calculated field or in the @CALCTEXT action tag, if the returnSignedValue parameter is provided and has a TRUE value in the function but the dateFormat parameter is not provided, then the calculation might mistakenly return a positive number value on the page if the value is actually a negative number. Note: This could be fixed if running Data Quality rule H.
- Bug fix: If a survey participant sends an SMS message to a Twilio phone number that is set up for a REDCap project, REDCap would reply simply with "Please enter your access code to begin the survey", which might be unexpected in some situations, such as if the participant sent the SMS to this number by accident or if they sent it before they were invited to take the survey. More response text has been added to the message now to provide more clarity to the respondent in these situations. (Ticket #97520)
- Bug fix: When clicking the "M" icon to open the Missing Data Code menu for an embedded field on a data entry form, it would mistakenly not display the menu at all or it would display it on the wrong location on the page.
- Bug fix: When using Twilio telephony services for Alerts & Notifications, the Notification Log would mistakenly fail to display the recipient's phone number on the page if a phone/number field is being used as the recipient's phone number. Instead it would merely display the unpiped variable name in the Recipient column.
- Bug fix: When using Twilio telephony services for Alerts & Notifications and viewing a scheduled or sent notification via the View Notification dialog on the Notification Log, it would mistakenly fail to display the recipient's phone number in the dialog if a phone/number field is being used as the recipient's phone number. Instead it would merely display the unpiped variable name.
- Bug fix: When viewing the Notification Log for Alerts & Notifications, it might mistakenly fail to display unsent/scheduled notifications in the log in certain cases if the "End time" filter is set to a blank value. This might make it appear as if the notification has not been scheduled.
- Bug fix: If users cannot create projects on their own but must request that admins create them on their behalf, an administrator creating the project for a user mistakenly needs to have the "Allow this user to request that projects be created for them by a REDCap administrator?" privilege enabled for their user account. This should not be required but should be implied via their status as an admin. (Ticket #98128)

- Bug fix: When performing a data import of a CDISC ODM (XML) file that contains only data (i.e., metadata not included), in which the XML file contains base64-encoded binary files for File Upload fields, those File Upload files would mistakenly be ignored during the import process and would not be imported with the rest of the data. (Ticket #96800)
- Bug fix: When creating a new REDCap project using a Project XML file, in which the XML file contains surveys and fields with Stop Actions, the Stop Actions would mistakenly not get added to the fields for the new project created. (Ticket #97959)
- Bug fix: When performing a data import where the uploaded data set contains checkbox fields, REDCap would mistakenly allow values of "1.0" and "0.0" (and other approximations of "1" and "0") to be imported for checkbox fields. This would also cause the values not to save correctly for these fields, even though the logging implies otherwise. It should only explicitly allow values of "1" and "0" for checkboxes. (Ticket #97972)
- Bug fix: If a project has Double Data Entry enabled and DDE person #1 or #2 is viewing a custom record status dashboard, the dashboard will mistakenly return incorrect results on the page for custom dashboards that have filter logic defined. (Ticket #97174)
- Bug fix: In a longitudinal project that contains repeating instruments and/or repeating events, if a custom data quality rule has logic that contains a field whose data collection instrument exists in both repeating and non-repeating contexts in the project, the data quality rule might not always return all the discrepancies that exist. (Ticket #97508)
- Bug fix: If a project was marked as Completed, any Alerts & Notifications or survey invitations that had been previously scheduled would mistakenly continue to send. They should not send if a project is marked as Completed.
- Bug fix: If a project has Double Data Entry enabled and DDE person #1 or #2 is viewing the record status dashboard, the Custom Record Label (if enabled) would fail to display on the page next to the record names. (Ticket #97116)
- Bug fix: If a data collection instrument's unique instrument name contains a triple underscore, in which its name was manually set via Column B in a data dictionary upload, when entering data for this instrument on the data entry form, the value for the instrument's form status complete field would fail to save successfully and thus would always get set to Incomplete ("0"). Note: This would not affect data imports or surveys but only data entered on the data entry form. (Ticket #96547)
- Bug fix: If using the @NONEOFTHEABOVE action tag on a checkbox field that is embedded inside another field, the @NONEOFTHEABOVE functionality would not function correctly if the user clicked the checkbox label to check/uncheck the option (as opposed to clicking the checkbox element itself). (Ticket #98269)

#### Version 10.6.5

- **Major bug fix:** On a survey page or data entry form, if a slider field already has a value saved for it before the time that the page is loaded, and a user then modifies the slider field value, while it would appear that the slider's value has changed, it mistakenly has not. Bug emerged in REDCap 10.6.2. (Ticket #98450)

- Bug fix: The Configuration Check page was mistakenly displaying MySQL database configuration suggestions for the MySQL query cache setting even though the query cache is deprecated in MySQL 5.7.20+. It will now no longer suggest changes to the query cache if using MySQL 5.7.20+. Note: This issue was supposedly fixed in REDCap 10.6.3 but mistakenly was not. (Ticket #97786)
- Bug fix: If running REDCap on PHP 5.5, it would mistakenly display the message "Composer detected issues in your platform: Your Composer dependencies require a PHP version >= 5.6.0." and would prevent REDCap from working. (Ticket #98346)
- Bug fix: If using an if() function inside the @CALCTEXT action tag, in which the if() function is outputting text that contains a comma, it would mistakenly display an error message on the survey page or data entry form.
- Bug fix: If a longitudinal project's Automated Survey Invitation (ASI) has conditional logic that contains datediff() with "today" or "now" as a parameter and also has a field in the logic that is prepended with any "event-name" Smart Variable, then the ASI cron job that runs every 4 hours might mistakenly schedule invitations when it shouldn't or might mistakenly remove some already-scheduled invitations (but only if the "Ensure logic is still true before sending invitation?" option is checked).
- Bug fix: The option "UNK, Unknown" was missing from the "race" field options when using the Clinical Data Pull (CDP) feature.
- Bug fix: Two Laboratory fields (including a COVID-related one) and their associated LOINC code were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: In some cases, the @CALCDATE action tag might mistakenly return the value "NAN" when it should return a blank/"" value. This often happens when one or more of the parameter values for @CALCDATE are blank. Bug emerged in REDCap 10.6.3.
- Bug fix: In a longitudinal project, if a field on a repeating instrument or repeating event has branching logic that contains a field name appended with the Smart Variable "first-instance" or "last-instance", the branching logic might mistakenly not get parsed correctly and would display a branching logic error popup on the survey page or data entry form. (Ticket #98427)
- Change: The "Help & FAQ" page was updated with new content.
- Bug fix: In certain situations where an [X-instance] Smart Variable in piping, it would cause PHP to crash with a fatal error if using PHP 8. (Ticket #98920)
- Bug fix: Ways were found where a user could access a file uploaded to a File Upload field that exists in another project, specifically via the Send-It link on data entry forms or via downloading the "ZIP file of uploaded files (all records)". However, this could only be done if the user has access to that other project.

#### Version 10.6.6

- **Major bug fix:** A race condition can occur when two records are being randomized at the exact same time, in which it is possible that they both mistakenly receive the same allocation and same value for the randomization field in the project. (Ticket #99159)

- **Minor security fix:** In several places where a user can download a CSV file of various settings (e.g., export of Data Quality rules), it might be possible for a malicious user to perform CSV injection in a CSV file that is downloaded and opened in Microsoft Excel by another user, in which dangerous code could be injected and executed unknowingly by the user on their computer.
- Bug fix: In some situations where embedded fields have branching logic that is triggered by other embedded fields, if the parent field of those embedded fields is itself triggered by branching logic, then some of the embedded fields inside the parent might mistakenly be displayed when they should be hidden by branching logic.
- Bug fix: When clicking the "Send-It" link to send a file from inside a project (e.g., a data export file or a file from File Repository), after submitting the page to send the file to the desired recipients, an error message would mistakenly display saying that the user does not have permission to the file. Thus the file would not be sent. Note: This does not affect the main Send-It page that is accessible via the tab on the main REDCap home page, etc.
- Bug fix: When a survey participant is taking a PROMIS, NeuroQoL, NIH Toolbox, etc. assessment that is adaptive or has auto-scoring, the "Anchor Text" would mistakenly not be displayed on the survey page for the first and last choices of the survey question (assuming anchor text exists for the question).
- Bug fix: When using the Custom Record Label and/or Secondary Unique Field in a project that contains many records (i.e., thousands or more), running Data Quality rules would mistakenly take an inordinate amount of time to return the results.
- Bug fix: When using the Custom Record Label and/or Secondary Unique Field in a project that contains many records (i.e., thousands or more), the Resolve Issues page (available when using the Data Resolution Workflow) would mistakenly take an inordinate amount of time to load.
- Bug fix: The Configuration Check page might mistakenly display a yellow recommendation saying that the MySQL/MariaDB query cache is not enabled but mistakenly does not tell the user that they should set the setting `query_cache_type` to "ON" or "1" in their `My.cnf` or `My.ini` config file. It now checks the `query_cache_type` setting to recommend that it be enabled.
- Bug fix: On a data entry form or survey, it might be possible in very specific situations for hidden radio elements to mistakenly be selected and be somewhat visible on the page. This would not affect any data but might cause confusion to the user. (Ticket #99271)
- Bug fix: Fixed a fatal PHP error that occurs on certain pages in PHP 8 only. (Ticket #99323)
- Bug fix: If an embedded checkbox field has the `@READONLY` action tag, it would mistakenly be possible to check/uncheck the checkbox and thus change its value by clicking its choice label, although clicking the checkbox element itself would do nothing and would remain read-only, as expected. (Ticket #99322)
- Bug fix: If a file that is uploaded for a File Upload field or for a message in REDCap Messenger exceeds the maximum file size as defined by the server or by REDCap's configuration, the file's metadata would mistakenly remain in the database and (if the file size exceeded the REDCap limit but not the server limit) the file might still remain on the server. It will now set the file to be removed from these places when this occurs. (Ticket #99324)
- Bug fix: When piping a field into a label on a data collection instrument in a longitudinal project in which the piped field variable is prepended with the `[previous-event-name]` Smart Variable, the

pipng would fail to work in certain specific contexts, such as if the instrument of the field being piped is not designated on the previous event when viewing a different instrument on the next event. In these cases, it would mistakenly display six underscores (as if there is no value) rather than the real value. (Ticket #99342)

- Bug fix: In the field-view in the Online Designer, the floating help boxes on the right of the page might mistakenly overlap some of the instructional text. (Ticket #98688)
- Bug fix: When a multi-page survey has fields utilizing the @CALCTEXT or @CALCDATE action tag, in which those fields themselves are used in a calculation or branching logic on a separate page that also does not display the fields utilized inside the @CALCTEXT or @CALCDATE logic, it would mistakenly display an error message on the survey page. (Ticket #98545)
- Bug fix: If a user is attempting to enable the Secondary Unique Field on a field that somehow has records with blank values (for the "value" column) saved for that field in the database, REDCap would mistakenly not allow the user to enable the Secondary Unique Field for the field. (Ticket #83279)
- Bug fix: If utilizing certain Smart Variables inside the query of a Dynamic SQL Field (e.g., [record-name]), the Smart Variable would mistakenly not get escaped in the query, which might cause the query to fail and not return the desired results.
- Bug fix: When editing logic in the Logic Editor for the Survey Queue or Automated Survey Invitations, if a syntactical error exists in the logic, it might mistakenly create an infinite loop where the error popup keeps displaying and is not able to be fully closed, thus causing the user to have to reload the page. (Ticket #99412)

#### Version 10.6.7

- Bug fix: When a REDCap administrator is using the "View project as user" feature to impersonate a user when viewing an "initial survey" in the Participant List while the project is in production, it would mistakenly not disable the "Enable" button for the Participant Identifier column in the Participant List. In this scenario, that button should remain disabled since it would be disabled for the user being impersonated.
- Bug fix: The style of the text displayed inside the rich text editors did not match the general style and CSS classes of text on REDCap webpages (e.g., the text in the editors were much larger). This made it more difficult to accurately determine what the resulting text would actually look like on the page.
- Bug fix: When the text inside the @CALCTEXT action tag contains an opening parenthesis inside quotes but does not contain a closing parenthesis inside those same quotes (and vice versa), the @CALCTEXT equation would mistakenly not get parsed correctly and might cause an error to display on the survey/form or might cause the @CALCTEXT field to display as a normal editable text field instead of a pseudo-calc field.
- Bug fix: When a required field is left empty/blank on a survey or data entry form, in which the required field has no field label defined, instead of displaying a bullet point with no text in the error prompt, which is confusing, the variable name of the field will be displayed as an alternative. (Ticket #99551)

- Bug fix: When running the "Re-evaluate Alerts" feature on the Alerts & Notifications page in a longitudinal project, in which the alert is set to be triggered on "[Any event]" if an instrument is saved with a Complete status, it would mistakenly trigger alerts for records that do not have a Complete status for the instrument. If the alert is set to be triggered by completing the instrument on a specific event (rather than on "[Any event]"), this issue does not occur. (Ticket #99889)
- Bug fix: Data Quality rule F would mistakenly return false positives if the project is a multi-arm longitudinal project and a field's branching logic references fields/events in arms where the record currently doesn't exist. (Ticket #99922)

#### Version 10.6.8

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL of the Survey Settings page when enabling an instrument as a survey.
- Bug fix: When clicking the "Send-It" link to send a file from inside a project (e.g., a data export file or a file from File Repository), after submitting the page to send the file to the desired recipients, an error message would mistakenly display saying that the user does not have permission to the file. Thus the file would not be sent. Note: This does not affect the main Send-It page that is accessible via the tab on the main REDCap home page, etc. (Ticket #100024)
- Bug fix: If an API user belongs to a Data Access Group, the project's back-end Record List Cache would mistakenly get reset every time the user would import a batch of records via the API. This would cause performance degradation of the project if many API imports are occurring for the project in a relatively short amount of time.
- Bug fix: When a project has enabled the "Delete a record's logging activity when deleting a record" setting, the action of deleting a record would correctly delete the record's logging activity with regard to what can be viewed via the front-end user interface, but it was mistakenly not additionally deleting the back-end SQL logging details that are stored in the database log\_event tables (even though this information can only be accessed if you have direct access to the database or via a special plugin or external module for doing such). (Ticket #100131)
- Bug fix: When a calc field or @CALCTEXT field exists on a repeating instrument or repeating event, the calculation might not get triggered during a data import or when running Data Quality rule H, in which it will fail to find discrepancies for this field when some discrepancies exist (but only in specific situations depending on the calculation being used for the field). (Ticket #82961)
- Bug fix: When a field has an @HIDDEN-PDF action tag in the Field Annotation/Action Tag text in which "@HIDDEN-PDF" is preceded with a line break with no space before the line break, the field would mistakenly not be hidden when downloading a PDF of the instrument.
- Bug fix: When attempting to download a file that was just uploaded to a File Upload field on a survey page, it would display an error message and prevent the downloading of the file if the survey had not been saved yet (i.e., if the participant was still on page one of the survey, whether public or private). This should not occur at all when the participant is using a private/unique survey link. This error message now only displays on public surveys in which the

survey has not been saved yet at all (before the record has been created), which is appropriate. (Ticket #99754)

- Bug fix: When using cross-form or cross-event calculations or branching logic involving a DMY or MDY formatted date or datetime field, if the field referenced on the other instrument/event has a Missing Data Code saved for it, saving the current instrument would cause the "Invalid values entered!" warning to appear mistakenly. (Ticket #100238)
- Bug fix: When a project has thousands or more records and has several records being created every minute, there might exist a slight lag in the back-end Record List Cache immediately after creating a new record, in which it could cause REDCap to mistakenly assume that a record doesn't exist yet when in fact it was just created. This might cause a record's data to get duplicated as a new record if a user is not paying attention while attempting to create another record.
- Bug fix: In some rare cases for projects that have calculated fields on repeating instruments, running Data Quality rule H would return valid discrepancies, but clicking the "Fix now" button on the page would mistakenly fail to fix the calculations.
- Bug fix: When attempting to download an instrument's Instrument ZIP file in the Online Designer when the instrument was created in Draft Mode but does not yet exist in the live version of the project, it would display a generic error message, which could be confusing to users. It now displays a more informative message regarding why exactly the zip file cannot be downloaded. (Ticket #100290)

#### Version 10.6.9

- Bug fix: When importing data from a CDISC ODM XML file (whether it be a Project XML file with data or a data-only ODM export file), in which the file contains data for repeating instruments, only the first repeating instance of any repeating instrument would get successfully imported.
- Bug fix: When importing data from a CDISC ODM XML file (whether it be a Project XML file with data or a data-only ODM export file), in which the file contains data for repeating events, only the last repeating instance of any repeating event would get successfully imported and would mistakenly get saved into the first repeating instance of the event.
- Bug fix: If a signature field is embedded on a survey page or data entry form, depending on where it is embedded, the signature image might mistakenly not be displayed directly above the download link after the user/participant adds their signature. It should always be displayed directly above the download link.
- Bug fix: In a longitudinal project that contains calculated fields whose equations reference fields on other events, Data Quality rule H might fail to return discrepancies for events that do not contain any data for any fields.
- Bug fix: Auto-calculations (i.e., the server-side processing of calculated fields) would mistakenly try to include all the fields in the project when assessing if calculated fields are being triggered and thus need to be updated, rather than only considering the fields that are being updated at that moment, such as during a data import or data entry. This could cause certain data imports to take much longer than they should.

- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0. (Ticket #100549)
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0. (Ticket #100456)
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0 while performing a data import via the API Import Records method. (Ticket #100416)
- Bug fix: The "Quick Add" dialog on the "Create New Report" page might mistakenly not work correctly if a data collection instrument's name/label contained a backslash.
- Bug fix: When viewing the Survey Invitation Log for a project displayed in a non-English language, the "Delete all selected" button might mistakenly not be displayed on the page. (Ticket #100480)
- Bug fix: When using advanced filter logic for reports, the logic would not get interpreted correctly if it contained certain Smart Variables, especially if it contained only Smart Variables with no field variables (e.g., [current-instance] <> ""). With this issue fixed, users may now utilize X-instance Smart Variables in a more intuitive way for filtering reports, such as the following: 1) Display only repeating instance data - [current-instance] <> "", 2) Display only non-repeating instance data - [current-instance] = "", 3) Display only the first instance of only repeating instance data - [current-instance] <> "" and [current-instance] = [first-instance], and so on. (Ticket #45618)
- Bug fix: On a project's Project Setup page, some things would mistakenly display incorrectly (or display when they should not) if an administrator was using the "View project as user" feature.
- Bug fix: If using the survey setting "Save a PDF of completed survey response to a File Upload field" in which an Alert is set to send "Immediately" with the PDF as an attachment on the alert, the PDF would mistakenly not get attached to the alert. However, if the alert was set to send after a delay of any kind, the PDF would correctly get attached.
- Bug fix: When copying a project via the Copy Project page, in which the Survey Queue settings are being copied, the following Survey Queue settings would fail to be copied to the new project: "Custom text to display at top of survey queue" and "Keep the Survey Queue hidden from participants?".
- Bug fix: Calculated field values were mistakenly not getting saved via cross-form or cross-event calculations (via Auto-Calculations) if the calculation was based on the value of a field being blank when the field's value was not being changed.
- Bug fix: It was recently discovered that due to a security fix added to REDCap 10.3.3 (Standard) and thus to all subsequent versions, some survey-specific features in REDCap do not function correctly if not using MySQL/MariaDB 5.5.5 or higher. Anyone using a version lower than MySQL/MariaDB 5.5.5 should upgrade their database to v5.5.5 or higher. The Configuration Check page now reflects MySQL/MariaDB 5.5.5 as being the minimum required database version that REDCap supports.
- Bug fix: When a project has thousands or more records and has several records being created every minute, there might exist a slight lag in the back-end Record List Cache immediately after creating a new record, in which it could cause REDCap to mistakenly assume that a record doesn't exist yet when in fact it was just created. This might cause a record's data to get duplicated as a new record if a user is not paying attention while attempting to create another record.

## Version 10.6.10

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the username field on the REDCap login form when logging in as a valid user for the very first time using an external authentication method, such as LDAP or Shibboleth. (Ticket #101037)
- Bug fix: When copying a project that contains surveys with the e-Consent Framework enabled, it would mistakenly not copy over some e-Consent settings, such as the "force signature" fields and "Allow e-Consent responses to be edited by users".
- Bug fix: When running Data Quality rule H's "Fix calcs now" button, if any fields listed in the discrepancy list are calc or pseudo-calc fields that exist on a survey that was completed using the e-Consent Framework, it would not change the values of those fields (as expected) but would mistakenly not return any error messages regarding why the values weren't changed, which could be confusing to users. It now displays error messages (if any) after clicking the "Fix calcs now" button for DQ rule H.
- Bug fix: When an Automated Survey Invitation is set to be triggered by survey completion OR conditional logic, in which the ASI is set to send "Immediately" and also has the "Ensure logic is still true" checkbox checked in the ASI setup, if a user/participant completes the trigger survey while the conditional logic still evaluates as FALSE, it would mistakenly fail to send the survey invitation, but it would correctly schedule any reminders for that survey invitation if the ASI has reminders defined. (Ticket #100770)
- Bug fix: When using X-instance Smart Variables in report filter logic (e.g., [current-instance] = [last-instance]), in which the report is returning data for multiple repeating instruments in the project, the report might mistakenly display rows of repeating instance data that should not be returned. (Ticket #100577)
- Bug fix: Fixed PHP 8 fatal error caused when parsing certain logic or calculations. (Ticket #101033)
- Bug fix: Descriptive fields could not successfully be embedded if the Descriptive field's field label does not contain any HTML tags and was not created using the rich text editor. (Ticket #101130)
- Bug fix: When opening an existing field for editing in the Online Designer, it would mistakenly convert <br> tags that exist in the "Action Tags/Field Annotation" text into literal line breaks. (Ticket #101178)

## Version 10.6.11

- Bug fix: When a user is using the My Profile to reset their password while using certain versions of Internet Explorer, it might mistakenly fail to reset their password due to various JavaScript errors occurring on the page. (Ticket #100595)
- Bug fix: Fixed issue with text and embedded images displayed for an item on the Help & FAQ page. (Ticket #101384)
- Bug fix: Clicking on the "Past Day", "Past Week", etc. buttons near the top of the project Logging page might mistakenly add the "seconds" component of the timestamp into the time range filter

fields, thus causing an error message to display on the page if the user puts their cursor inside the field and then then tabs out of the field. (Ticket #101369)

- Bug fix: If the survey setting "Save a PDF of completed survey response to a File Upload field" is enabled on a survey that also has the e-Consent Framework enabled, and the File Upload field specified for the "Save a PDF" setting exists on that same survey (often hidden by @HIDDEN-SURVEY), the PDF of the completed survey response would fail to be saved to the specified File Upload field when the participant completes the survey.
- Bug fix: When using an Adaptive or Auto-Scoring instrument from the REDCap Library (e.g., PROMIS, Neuro-QoL), the "reset" link next to each question's radio buttons would mistakenly fail to reset the radio button, if selected.
- Bug fix: The API Playground's example R code for the API Import File method was not correct and has been fixed. (Ticket #101454)
- Bug fix: The API Playground's example R code for the API Export File method was not correct and has been fixed. (Ticket #101454)
- Bug fix: When setting a survey's text-to-speech value to "English (United Kingdom) Female" on the Survey Settings page, it would mistakenly fail to save that setting correctly, thus preventing it from working as expected on the survey. (Ticket #101419)
- Bug fix: When an administrator is processing a "Move to production" request on the To-Do List page, clicking the "Check For Identifiers" link in the dialog while processing the request would mistakenly make the dialog go blank/empty. It will now open a new browser tab. (Ticket #101426)
- Bug fix: When a slider field is the first field displayed on a data entry form, the field receives focus when the form loads (which always occurs for the first field on any form), which makes it appear as if the field might already have a value. If the user misunderstands this and doesn't enter a value because they think it already has one (when it does not), data loss could result. Thus slider fields will no longer receive focus by default on a data entry form when they are the first field on the form. Note: This does not apply to surveys. (Ticket #101420)
- Bug fix: If an Adaptive (CAT) survey has been downloaded into a project from the REDCap Shared Library, and the setting "Allow participants to skip questions?" has been set to "Yes" on the survey's Survey Settings page, a participant attempting to skip a survey question without answering it would mistakenly receive an error message saying that an unknown error occurred and that they cannot continue with the survey.
- Bug fix: When fields are embedded using the ":icons" parameter in order to additionally embed the field's associated icons, depending on how the embedded fields are laid out on the page, the SPAN tag containing the icons might mistakenly wrap to the next line and appear below the embedded field rather than displaying to the right of the field. (Ticket #101466)
- Bug fix: When the Smart Variable [survey-queue-link] or [survey-queue-url] is used in the email body of an Automated Survey Invitation or an Alert, if the record is being created via the API, which then triggers the sending/scheduling of the invitation or alert, the link/URL of the record's survey queue would mistakenly be blank (not displayed at all) inside the email body. (Ticket #101536)

- Bug fix: When a REDCap administrator attempts to add Stop Actions for a Dynamic SQL field on a survey instrument in the Online Designer, an error message would mistakenly be displayed, thus preventing them from doing so.

#### Version 10.6.12

- **Minor security fix:** Removed the outdated and unused JavaScript library YUI Charts.
- Bug fix: When clicking "Cancel" inside the Logic Editor dialog, it might mistakenly revert the value of the text box being modified to the value of another text box that was previously edited via the Logic Editor while on that same page. (Ticket #101200)
- Bug fix: Calculations or conditional logic containing >1000 variables might mistakenly cause PHP to crash while processing and parsing them.
- Bug fix: Multi-page surveys that contain calculated fields might mistakenly take an unnecessarily long time to load each survey page due to inefficient calculation/logic processing on the server side.
- Bug fix: When adding a new Table-based user on the "Add Users (Table-based Only)" page in the Control Center, it would mistakenly allow admins to create usernames with spaces or apostrophes when not using LDAP or LDAP+Table authentication, which is the only time that spaces and apostrophes are allowed in usernames. (Ticket #101773)
- Bug fix: When using the Smart Variables [survey-date-completed] and [survey-time-completed] in the Custom Record Label, they would mistakenly not have their date displayed according to the user's preferred date format (as defined on their My Profile page) but instead would display it always in Y-M-D date format. (Ticket #102141)
- Bug fix: Since calculations typically do not expect fields to have a ":value" signifier attached to field variables (because it is assumed), an error message would occur on a data entry form or survey page if any fields in branching logic, calc fields, or pseudo-calc fields (@CALCTEXT) have ":value" appended to the field variable (e.g., [race:value]). REDCap will now allow ":value" to be appended to field variables in branching logic or calcs/pseudo-calcs and will treat them as equivalent to using just the field variable. (Ticket #102149)
- Bug fix: The "Check For Identifiers" page was mistakenly displaying any HTML that existed in a field label, thus making it unreadable on the page in certain instances. It now strips all HTML from the field label when displaying it.
- Bug fix: When setting up the REDCap cron job on the Control Center's "Cron Jobs" page on a Windows server, the page failed to mention the important fact that the cron job's scheduled task needs to be set to "Run a new instance in parallel", which can be set under the Settings tab in the Windows Task Scheduler.
- Bug fix: On the Browse Users page in the Control Center, the "Display User List" button on the "View User List By Criteria" would fail to load the user list table if using Internet Explorer 11. (Ticket #90646)
- Bug fix: Clicking on the "Perl" tab at the bottom of the API Playground page when the "Import A File" API method has been selected would cause a fatal PHP error in PHP 8 and certain versions of PHP 7, thus causing that page to crash. (Ticket #102291)

## Version 10.6.13

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in various places in REDCap, such as in survey question text and other user places that store user input.
- **Major bug fix:** When using randomization in a longitudinal project in which randomization strata fields exist on a different event than the randomization field, if the values of the strata fields are added or modified during the randomization process, their values would mistakenly not get saved or logged in the correct event, thus orphaning those values. (Ticket #103189)
- **Major bug fix:** If signature image files are being uploaded for Signature fields across multiple REDCap projects simultaneously (within milliseconds of each other), there is a small chance that one of the signature files might mistakenly get associated with a field in another project where someone was adding an image at the same moment. (Ticket #102764)
- **Bug fix:** If a survey participant receives a survey link via email in Microsoft Outlook (in either the desktop client or web version), in which Microsoft Outlook Safe Links has been implemented and has replaced the survey link in the email body, whenever the Safe Link version of the survey link is clicked by the participant, a Microsoft service (located in the IP address range 40.94.\*.\*) will make a POST request to the survey page about 10-20 seconds after the participant loads it (unbeknownst to them). This service actually submits the survey as if a real person was taking the survey, including submitting values for the survey questions. This means that for public surveys it is submitting false responses like a bot, and for private/unique survey links it is actually submitting the survey for the user, in which the participant is not able to enter their own response if they wait 10-20 seconds before submitting the survey themselves because this service has already completed the survey for them. To prevent this odd behavior by Microsoft Outlook Safe Links, REDCap survey pages now block all POST requests that originate via the IP address range 40.94.\*.\*, in which it immediately returns an error message.
- **Bug fix:** When record auto-numbering is enabled in a project, the process used to generate new record names is 2-5x slower than it should have been due to some inefficient structuring of SQL queries being used. This fix results in a performance improvement, especially for very active public surveys.
- **Bug fix:** If a project's "record list cache" is currently being built, which is done automatically via a back-end process, at the same time that new records are being created in the project, it might cause the cache not to be built for many minutes or hours (due to repeated failures while building the cache) if the project has lots of activity, all of which could cause the project to get extremely slow and might affect the performance of the overall system.
- **Bug fix:** In certain situations, such as public surveys being taken by hundreds or thousands of participants in a very short period of time, a project's "record list cache" (which is built automatically via a back-end process) might mistakenly get reset/reverted, which causes the record auto-numbering mechanism to mistakenly use a very slow SQL query for generating the next proposed record name. This can cause the public survey to get increasingly slow as more participants attempt to take it.

- Bug fix: If the system's "Auto logout time" is set to a value of 2 or less, it will cause the user interface to become mostly unusable due to all the auto-logout popups being displayed immediately on every page. The minimum value for "Auto logout time" has been set to "3" on the Security & Authentication page to prevent this issue from occurring. (Ticket #102319)
- Bug fix: When a survey participant is taking an Adaptive or Auto-scoring instrument from the REDCap Shared Library, if a survey question contains stem text at the beginning of the question text (e.g., "In the past 7 days"), the stem text was not being as displayed sufficiently separated from the rest of the question text. Certain validated instruments require that they be more separated.
- Bug fix: When building a list of participants on the Participant List, a database query on that page was suboptimal and was causing the page to load slowly for some projects. That query has been modified to be faster.
- Bug fix: If a project contains File Upload fields but no records have any files uploaded to those fields, a user can click the ZIP icon on the Other Export Options page to download a "ZIP file of uploaded files (all records)", in which it will correctly state a notice that there are no files to download. However, if during that same session the user goes and uploads a file and returns to download the ZIP of all files again, it will mistakenly still say there is nothing to download, which is incorrect. If they log out and log back in again, this issue goes away. (Ticket #103117)
- Bug fix: A SQL query was slow and inefficient when determining if the "FHIR Statistics" link should be displayed on the Control Center's left-hand menu. This would sometimes cause all Control Center pages to load unnecessarily slowly.
- Bug fix: If a user is viewing a survey response on a data entry form to which they have viewing access but do not have privileges to edit survey responses, any fields with @NOW, @TODAY, or other similar Action Tags would mistakenly have new values pre-filled for them on the page if those fields did not already have a value. This should not happen since the current user is not able to modify any values (i.e., they are not allowed to submit the form).
- Bug fix: Data Quality rule H might fail to complete if the project contains a large amount (>300) calculated fields.
- Bug fix: When using Missing Data Codes in a project, if multiple fields are embedded together inside another field on a data entry form, it would cause the click event of the "M" icon not to function correctly in which the Missing Data Code popup would mistakenly fail to open for those particular fields. (Ticket #103213)

#### Version 10.6.14

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in various places in REDCap, such as in survey question text and other user places that store user input.
- Bug fix: Fixed a compatibility issue when hosting REDCap using the PHP7 version of Google App Engine.

- Bug fix: If a report's filter logic contains only Smart Variables and no real project fields (e.g., [current-instance] = [first-instance]), the report would mistakenly not return any results for fields that exist on the first instrument if the first instrument is a repeating instrument.
- Bug fix: When uploading an Instrument Zip file into the Online Designer, any field variables in the Action Tag/Field Annotation text would mistakenly not get renamed (as they do for calculations and branching logic) if those variables exist
- Bug fix: When copying an instrument via the "Choose action" drop-down in the Online Designer, if a matrix of fields has a very long matrix group name, the action might fail and return an error message. (Ticket #103564)
- Bug fix: When copying an instrument via the "Choose action" drop-down in the Online Designer, if a matrix of fields has a very long matrix group name, the action might fail and return an error message. (Ticket #103564)
- Bug fix: When performing a CSV data import via the Data Import Tool, if the CSV file contains a byte order mark (BOM), it can cause processing issues in certain situations, thus returning an error about not being able to find the Record ID field in the file. To remedy this, the BOM is now always removed (if it exists) before the CSV gets processed during the data import process.
- Bug fix: In a longitudinal project that uses Automated Survey Invitations in which a user deletes an entire event via the Define My Events page, any already-scheduled invitations via ASIs would mistakenly remain in the Survey Invitation Log but would no longer be associated with any event (i.e., partial orphaning). This would cause the invitations to still be sent, which is not expected, and thus causes issues because those invitations no longer point to a real survey/event anymore, in which they would display a message to the recipient opening the survey link that they are not a participant for that survey. This has been fixed so that any already-scheduled invitations connected to the deleted event will also get appropriately deleted. (Ticket #103930)
- Bug fix: Fixed typo in field label for Twilio-related phone options for Alerts & Notifications on the "Modules/Services Configuration" page in the Control Center.
- Bug fix: When deleting a project, due to a SQL query error, the contents of the project logging (e.g., data values that were saved, record names, other record-specific logged events) were mistakenly not being deleted from the log when the project gets officially deleted after 30 days (or if an administrator clicks the "Delete it now" option in the Control Center). (Ticket #103532)

#### Version 10.6.15

- Bug fix: If the body of an alert contains an inline image with a "src" attribute value containing "&file=" followed by an integer, there is a small possibility that an unrelated file that belongs to another REDCap project might get mistakenly attached to the alert that is sent.
- Bug fix: When a calc or @CALCTEXT field is used in the calculation of another calc or @CALCTEXT field, depending on the specific arrangement and order of the fields on the page, it could mistakenly cause the field to trigger itself over and over on the webpage, even when just initially loading a survey page or data entry form, in which it will use more and more web browser memory as time passes until the page crashes in the user's browser after several seconds or minutes. (Ticket #104217)

- Bug fix: When using the randomization feature and viewing any data entry form on an already-randomized record, in very specific circumstances the values of some embedded fields on the page might mistakenly not get saved successfully after being modified.
- Bug fix: On multi-page surveys, a section header might mistakenly be displayed on the page even though all fields in the section are hidden. (Ticket #66721b)
- Bug fix: For every webpage in REDCap, the HTML DOCTYPE declaration and the HTML tag's "lang" attribute were mistakenly hard-coded as "EN" (English). This was causing issues with regard to browsers assuming that the webpage was always in English, which is not always true. (Ticket #104487)
- Bug fix: If a user contains an apostrophe in their username and they attempt to create a new project, the process would fail due to a SQL query error. (Ticket #79647b)
- Bug fix: If a user contains an apostrophe in their username and an administrator clicks the "Edit user info" button on the "Browse Users" page when viewing their account, it would mistakenly display an error message saying "User names can only contain letters, numbers, underscores, hyphens, and periods" and would not let them leave the field, thus forcing the admin to refresh the page. (Ticket #79647c)
- Bug fix: The User Access Dashboard was mistakenly displaying projects that have been "marked as completed". Such projects are not accessible by normal users and therefore should not be visible on that page.
- Bug fix: When using Twilio for survey invitations, if a participant sends an SMS message to the Twilio phone number being used in a REDCap project, it might mistakenly reply back to the participant from a different Twilio phone number if the Twilio account has multiple phone numbers associated with it, in which the other number is associated with another REDCap project that is also using Twilio.
- Bug fix: Several places in REDCap were mistakenly still linking to the old Language Center on the REDCap Community site instead of the newer plugin page that now serves as the current Language Library.
- Bug fix: When exporting data to SAS, fields that have a number, integer, date, or datetime data type might mistakenly not have their "informat" or "format" syntax set correctly in the SAS syntax file, which could cause warnings or errors when loading the exported data into SAS. (Ticket #96569)
- Bug fix: If checkboxes are embedded and they are also piped to other places on the same page, then the piping action would mistakenly not occur in real time if the checkbox's choice label is clicked. Note: The piping would work correctly if the checkbox element itself is clicked or if the page was saved and reloaded, but it would not act in real time when clicking the label of the checkbox. (Ticket #104317)
- Bug fix: The Data Access Group drop-down filter was mistakenly not being displayed at the top of the project logging page for projects that contain DAGs. (Ticket #104574)
- Bug fix: If certain user-defined text (e.g., field labels, survey instructions) contain HTML character codes, there is a chance that the HTML character codes might not get parsed correctly when being sanitized for security purposes prior to being displayed on the page. This could cause them not to display correctly on the page or (worst case) cause the page to result in a PHP error if it gets stuck in an infinite loop while processing this text. (Ticket #104583)

## Version 10.6.16

- Bug fix: When generating System Notifications for REDCap Messenger during a REDCap upgrade, it was mistakenly using the PHP constant NOW instead of the MySQL function NOW() in a specific query. For that specific process, it now uses the MySQL function NOW() only when hosting REDCap on Google App Engine, otherwise it uses the PHP constant NOW, as it did in previous versions. Bug emerged in 10.6.15.
- Bug fix: When a field with the @PREFILL action tag is being piped somewhere on the same page, the field would mistakenly not have its value piped successfully when the page is loaded. (Ticket #104613)
- Bug fix: It was impossible to disable the "Auto logout time" setting (i.e., by setting its value to "0") on the Security & Authentication page in the Control Center because it would prompt the admin to enter a minimum value of "3". (Ticket #104680)
- Bug fix: If a File Upload field is embedded inside a checkbox choice label, in which the File Upload field has branching logic so that it is only displayed when the checkbox next to it is checked, the upload or download process for the File Upload field would mistakenly cause the checkbox to be checked/unchecked, thus causing the issue of hiding the File Upload field while trying to upload/download its file. (Ticket #104664)
- Bug fix: When performing a data import that contains checkbox fields in which a checkbox has a Missing Data Code previously saved for it, any checkbox options being set to "1" for that field during the data import will mistakenly not remove the existing Missing Data Code from the field. Thus the field ends up with a Missing Data Code and other checked values, which should not happen. Additionally, when viewing the field on a data entry form afterward, the field would mistakenly still appear to have a Missing Data Code. (Ticket #104712)
- Bug fix: When an instrument has already been enabled as a survey and it does not have the e-Consent Framework enabled, if a user then navigates to the Survey Settings page and enables the e-Consent Framework for that survey, the "Allow e-Consent responses to be edited by users?" option is mistakenly not checked by default. That option should be checked by default when enabling the e-Consent Framework. (Ticket #104869)
- Bug fix: When a matrix checkbox field is embedded on a survey page or data entry form, and another field has branching logic that references that embedded matrix checkbox, the branching logic would fail to work successfully when the trigger checkbox is checked/unchecked. (Ticket #104866)
- Bug fix: If an administrator has set a project to be "Offline", users could inadvertently still use the API for that project, which should not be allowed. (Ticket #104931)
- Bug fix: Depending on the username or the name of a Data Access Group, the "(+1)" text that signifies the amount DAG Switcher assignments might mistakenly not display next to the user's current DAG on the User Rights page's table of users.
- Bug fix: If a user/participant adds a signature to a Signature field in which they resize the popup to make it larger while signing it, it would result in a larger image being saved that would mistakenly not always fit correctly in an exported PDF of that instrument. (Ticket #104927)
- Bug fix: Data Quality rules A and B might mistakenly not display all valid discrepancies for a field if the field's branching logic contains certain Smart Variables. (Ticket #99077)

- Bug fix: When performing an API data export of CSV data in EAV data format, it would mistakenly display the CSV "event" header as "event\_id" instead of "redcap\_event\_name".
- Bug fix: When importing data via the API in EAV format (where type=eav) and using the value "new" to perform auto-numbering of the redcap\_repeat\_instance field, it was mistakenly not returning an error for this. This is not allowed since the "new" value for redcap\_repeat\_instance cannot be used when type=eav but only for type=flat. This has also been added to the API documentation to inform users of this limitation. (Ticket #104491)
- Bug fix: If a user is idle on a data entry form, and the red auto-logout message appears and states that their session has ended, if they attempt to close that browser tab, it would mistakenly display the prompt asking them if they wish to leave the site. It should not display that prompt. (Ticket #104948)

#### Version 10.6.18

- Bug fix: When exporting data via the Export Records API method as type=eav, it would mistakenly fail to include the value of the redcap\_event\_name field (and would export it as blank/null) if the project is longitudinal and the exported data format is XML or JSON. Bug emerged in REDCap 10.6.16 (LTS) and 10.9.3 (Standard). (Ticket #105673)
- Bug fix: When attempting to use the Easy Upgrade on an AWS Quick Start deployment of REDCap, the upgrade process may fail due to "\r" characters in the upgrade shell script. (Ticket #103939)
- Bug fix: When creating a project via a Super API Token, the API call would fail due to a fatal PHP error, thus preventing the project from being created. Bug emerged in REDCap 10.6.16 (LTS) and 10.9.3 (Standard).
- Bug fix: When importing data (via Data Import Tool, API, or REDCap::saveData), all records would mistakenly have spaces trimmed off the beginning and end of every value being imported. This would prevent the data from being imported as-is. It now no longer trims whitespace off of the beginning and end of data values during data imports.
- Bug fix: On certain occasions, an alert that is triggered may mistakenly send an email to the "Email to send email-failure errors" recipient multiple times (instead of just once) or may send it to that recipient when it is not supposed to.
- Bug fix: A field using the @CALCTEXT action tag would mistakenly return a blank value whenever it should be returning a value of 0. (Ticket #105128)
- Bug fix: When using the concat() function in a @CALCTEXT field, the calculation might mistakenly fail if certain characters such as "+" are utilized inside the concat() function. (Ticket #105445)
- Bug fix: When a text box field is embedded inside a checkbox field on a survey that is using Enhanced Checkbox/Radio Fields, the checkbox would be unable to be selected. (Ticket #97954)
- Bug fix: When a checkbox field is embedded inside a checkbox field, it would mistakenly check the first sub-checkbox whenever checking the parent checkbox. (Ticket #97954)
- Bug fix: When a radio field is embedded inside a checkbox field, several things would function incorrectly when clicking on the labels of the radio fields or their "reset" link. (Ticket #105001)

## Version 10.6.17

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability and Cross-site Request Forgery (CSRF) vulnerability were discovered where a malicious user could potentially exploit them on two specific Control Center pages.
- Bug fix: When a @CALCTEXT field is used in a longitudinal project, in which its value gets set but all other fields on its instrument do not have a value saved, a red form status icon would mistakenly be displayed for its instrument on the Record Home page and Record Status Dashboard. The status icon should instead remain gray in this case even when calc fields and @CALCTEXT fields have a value. (Ticket #105061)
- Bug fix: PHP 8 compatibility error in LDAP authentication code. (Ticket #105100)
- Bug fix: If a record is deleted via the Delete Record API method, and then another record is created later having the same record name, the Data History popup for a given field would mistakenly list the logged events from the previously-existing record when instead it should not. (Ticket #105144)
- Bug fix: If submitting a public survey, and the record ID field is referenced in the equation of a calculated field located on another instrument, the calculated field's value would mistakenly not get saved. (Ticket #105178)
- Bug fix: When using Twilio telephony services in which multiple projects are using the same Twilio Account SID but have different Twilio phone numbers, some of the Twilio logs on the Twilio website might mistakenly not get erased as they should (REDCap automatically deletes all Twilio logs after each SMS or phone call for privacy purposes).
- Bug fix: If a repeating survey has one repeating instance of the survey that has been locked at the instrument level, then if another repeating instance (that is not locked) of that same survey is opened, it would mistakenly display an error to the participant saying that the response has been locked, which is not true.
- Bug fix: When using the Data Resolution Workflow and viewing an opened query that has not yet been assigned to a user, it would mistakenly not allow you to assign the query to a user. (Ticket #105205)

## Version 10.6.19

- **Major bug fix:** Alerts & Notifications that are set to be sent via SMS or Voice Call would mistakenly not get sent whenever the alert is triggered. Bug emerged in REDCap 10.6.18 LTS and 11.0.0 Standard. (Ticket #106260)
- Bug fix: On surveys that have Enhanced Radio & Checkboxes enabled, in which radio fields are embedded inside checkbox labels or checkboxes are embedded inside radio labels (or other variations of these), some of the options might mistakenly not be selected after clicking on them. (Ticket #105880)
- Bug fix: When using the Designated Phone Field with the Twilio telephony services for surveys, the participant's record ID might mistakenly not be displayed on the Survey Invitation Log in certain cases. (Ticket #49955)

- Bug fix: When creating a new Table-based authentication user on the "Create single user" page in the Control Center, it is possible to create a user without entering a value for their username. That should not be allowed. (Ticket #106103)
- Bug fix: When using the "Move to Production status" public survey for "Custom Surveys for Project Status Transitions" when users are not allowed to move projects to production on their own but must request an administrator do so on their behalf, if the user failed to select the radio button asking "Keep existing data or delete?" in the dialog pop-up and then they completed the public survey afterward, the "Working..." progress message would appear and never go away, thus preventing the request from being submitted correctly. (Ticket #106173)
- Bug fix: When the datediff cron job is running for Alerts & Notifications that contain datediff+today/now in their conditional logic, the cron job might mistakenly take a long time to complete (or might time out) because the record list cache has not been created yet for the projects for which the cron job is processing. To prevent the cron job from taking too long and possibly timing out, it will attempt to build the record list cache in real time for each project it is processing. This may mean that initial attempts of the cron job may still take a long time, but later instances of the cron should be much faster.
- Bug fix: When the datediff cron job is running for Automated Survey Invitations that contain datediff+today/now in their conditional logic, the cron job might mistakenly take a long time to complete (or might time out) because the record list cache has not been created yet for the projects for which the cron job is processing. To prevent the cron job from taking too long and possibly timing out, it will attempt to build the record list cache in real time for each project it is processing. This may mean that initial attempts of the cron job may still take a long time, but later instances of the cron should be much faster.
- Bug fix: When using the survey setting "Time Limit for Survey Completion" in which a user clicks the clock icon for a participant in the Participant List in order to modify their Link Expiration time, clicking the "Expire it now" button in the dialog would mistakenly fail to do anything because of a JavaScript error. (Ticket #106167)
- Bug fix: When a text field is embedded inside a checkbox field, clicking inside the text box mistakenly causes its parent checkbox to become unchecked. (Ticket #105001b)
- Bug fix: When launching the Clinical Data Pull embedded window inside an EHR user interface, it might mistakenly say that the current web browser is not compatible.
- Bug fix: If a field is using the @CALCDATE action tag that references a field variable as the second parameter, if that second parameter field has a blank value, the @CALCDATE calculation might return an incorrect value when instead it should be returning a blank value. This only occurs on the server-side (PHP) processing of @CALCDATE when a form/survey is being saved, and does not occur with the client-side (JavaScript) version of the function. This means that while the value looks blank when viewing a data entry form or survey page, the incorrect value would be seen on reports, data exports, or wherever the @CALCDATE field is being piped. (Ticket #106243)
- Bug fix: If using a survey-level designated email field, in certain cases the Participant Email displayed in the Survey Invitation Log might mistakenly be blank or might display the project-level designated email field instead. Bug emerged in REDCap 10.6.18 LTS and 11.0.0 Standard.

- Bug fix: When a survey invitation is sent to a participant via a Twilio SMS message, viewing the message afterward in the Survey Invitation Log would mistakenly display extra text (e.g., "-- To begin the survey, visit...") appended to the message that did not actually get sent to the participant in the SMS message. Additionally, when viewing an SMS message in the Survey Invitation Log, it would mistakenly display any URLs in the message as clickable links instead of correctly displaying them as non-clickable URLs, which is more accurate to how they are seen by the recipient. (Ticket #104997)
- Bug fix: When a project has been set up with Automated Survey Invitations and is using the Designated Email Field, the Public Survey Link page might mistakenly display the red box saying "WARNING: The designated email field does not exist on the first survey", which might not be true if a survey has been orphaned (created in the past but then later removed) in which the survey had one or more ASI's set up for it.
- Bug fix: Dots/periods have been allowed in checkbox codings since REDCap 9.9.0, but the data dictionary import process would still mistakenly display an error message saying that this is not allowed, which is not correct. (Ticket #106375)
- Bug fix: When a project is using Twilio for sending survey invitations, and an Automated Survey Invitation is set to "use participant's preference" for the invitation type/delivery method, then any participant whose delivery preference is "email" would mistakenly receive the expected email body text but with extra text appended to it (e.g. "Please take this survey. You may open the survey..."). In many cases, this means that the email body is duplicated in the email, which is not desirable. (Ticket #102953)
- Bug fix: When editing a field in the Online Designer and using different background colors or text colors in tables added via the rich text editor, a survey theme's color might mistakenly override a table row's or table cell's background/text color when viewing the field on a survey page. (Ticket #106340)

#### Version 10.6.20

- Bug fix: If a data export takes a long time and the user is away from the computer so long that the auto-logout dialog displays on the page, the auto-logout dialog would mistakenly be displayed underneath the "Exporting data" popup, thus preventing the user from seeing it and preventing the auto-logout process from occurring. (Ticket #106545)
- Bug fix: When not using record auto-numbering in a project while viewing the Add/Edit Records page or Record Status Dashboard, if a record name is hand-entered in a different case than in which it was saved (e.g. "abc" vs "ABC"), it might cause issues on the Record Home page, such as not displaying Custom Labels for Repeating Instruments. (Ticket #106559)
- Bug fix: When viewing a custom Record Status Dashboard in a project that has Double Data Entry enabled, the custom dashboard's "sort by" setting (if utilized) would mistakenly not sort the dashboard's records correctly for any user that has the DDE #1 or #2 designation. (Ticket #105030)
- Bug fix: When REDCap is reporting its general stats to the consortium, it would mistakenly fail to send them in some cases where the URL ended up being more than 2000 characters long.

- Bug fix: A survey theme's background color might mistakenly not get applied to a radio/checkbox matrix on the survey page, thus displaying part of the matrix in the wrong color. Bug emerged in the previous version. (Ticket #106712)
- Bug fix: The setting "Designate an email field for communications (including survey invitations and alerts)" on the Project Setup page would mistakenly be disabled and not usable unless the project has the setting "use surveys in this project?" enabled, which is not correct since the designated email setting can be used for more than just surveys.

#### Version 10.6.21

- **Major bug fix:** When using an Adaptive or Auto-Scoring instrument downloaded from the REDCap Shared Library, in which that survey was set to use "Enhanced radios and checkboxes" via the Survey Settings page, the survey would not function and would not allow participants to submit their responses unless the survey was reverted to no longer using "Enhanced radios and checkboxes".
- Bug fix: When a survey participant is taking a specific Adaptive or Auto-Scoring instrument (such as "NIH TB Hearing Handicap Age 65+") downloaded from the REDCap Shared Library that contains an initial descriptive text field (i.e., it has no choices to choose from), the survey would not function and would not allow participants to submit their responses. Note: This only affects 3 or 4 total Adaptive or Auto-Scoring instruments in the entire REDCap Shared Library.
- Bug fix: If a report contains filter logic containing around 900 or more field variables, the report might mistakenly return 0 results instead of the appropriate results. REDCap cannot parse more than 900 or so field variables in logic due to a limitation in PHP. If more than 900 field variables are used in a report's filter logic and it causes PHP to crash, REDCap will provide a helpful error message in this case to inform the user that there is either a syntax error in the filter logic or that it is too long and needs to be shortened. (Ticket #106834)

#### Version 10.6.22

- Bug fix: When using the Survey Queue in a longitudinal project, there are some scenarios where the queue might mistakenly not process the conditional logic correctly for a survey in the queue, thus causing it to return an empty queue or omit some surveys from being displayed in the queue. (Ticket #106801)
- Bug fix: PHP 8 compatibility error when viewing some custom record status dashboards. (Ticket #107055)
- Bug fix: When using the Data Resolution Workflow in which a normal user is attempting to delete a file attachment that has been uploaded to an opened data query, it would mistakenly display an error message every time. Instead it should display a message letting them know that only administrators are allowed to delete files attached to data queries. (Ticket #106984)
- Bug fix: PHP 8 compatibility error when using Two Factor Authentication. (Ticket #103721)
- Bug fix: PHP 8 compatibility error when using the DAG Switcher. (Ticket #107209)
- Bug fix: PHP 8 compatibility error that occurs in some specific cases when viewing the Record Status Dashboard. (Ticket #107225)

- Bug fix: When a project contains repeating events in which a report has filter logic to filter out specific repeating instances (e.g., [current-instance] <> "" and [current-instance] = [first-instance]), the report might mistakenly display no results or incorrect results when there is actually data to display. This does not affect repeating instruments but only repeating events.
- Bug fix: When a radio button field that is part of a matrix is embedded on a data entry form or survey page, the radio button's "reset" link would mistakenly not get embedded along with its associated field. Thus there would be no way to reset a matrix radio field that is embedded. Now the "reset" link appropriately gets moved to be immediately below its associated embedded radio field.
- Bug fix: To prevent Microsoft Outlook Safe Links from submitting surveys and junk data on its own, REDCap survey pages now block all POST requests that originate via the IP address range 52.147.217.\*, in which it immediately returns an error message. This is in addition to a recent fix that protected surveys from Safe Links coming from another IP range (40.94.\*.\*).
- Bug fix: When REDCap is sending a large amount of email notifications from REDCap Messenger, such as when there is a General Notification or System Notification, if the cron job process for sending the emails takes too long, it may mistakenly get run several times, resulting in users receiving the same email notification several times. (Ticket #107208)

#### Version 10.6.23

- **Major bug fix:** If a project has randomization enabled and is using strata fields, if one or more strata fields exist on a survey instrument, and the survey containing the strata field(s) is opened after the record has been randomized, the strata fields would mistakenly not be disabled/readonly on the survey page but could be edited, which can cause major issues with a randomized project. It is expected that the strata fields should be disabled/readonly (whether on the data entry form or survey page) after the record has been randomized.
- Bug fix: When a project is in Analysis/Cleanup mode, and a user wishes to set the project data to be read-only/locked, the popup dialog for doing this mistakenly has the wrong text for the dialog buttons.
- Bug fix: When a project has a very large number of arms, it may prevent the Record Status Dashboard from displaying data properly, and might also prevent the background "record list cache" process from completing successfully. (Ticket #107502)
- Bug fix: In server environments with PHP error reporting enabled, it would display a deprecation notice regarding the constructor of the PEAR Log class. (Ticket #55557b)
- Bug fix: When unlocking an instrument using the Unlock button at the bottom of a form, any fields with the @READONLY or @READONLY-FORM action tag would mistakenly become editable. (Ticket #107549)
- Bug fix: The <caption> HTML tag was mistakenly not allowed in field labels, survey instructions, and all places that display user-defined text on a webpage. (Ticket #107664)

#### Version 10.6.24

- Bug fix: When importing a file via the File Import API method in which the file exceeds the maximum allowed file size, it would return an error message that mistakenly referenced the max upload size of the server instead of the max upload size that is manually set for File Upload fields for the project, which might be a different value than the server maximum.
- Bug fix: If an error popup for a calculation or branching logic appears immediately when a survey page or data entry form initially loads (due to syntax errors in the branching/calculation), the stock language in the error message itself would mistakenly say "undefined" instead of actual text. However, this would not occur if the error message was displayed later on after the page had already loaded.
- Bug fix: Certain example plugins that are included in an initial installation of REDCap would mistakenly display PHP errors if they are accessed without a "pid" parameter in their URL. (Ticket #107782)
- Bug fix: When using the "Select instruments/events" option for a custom record status dashboard, it would mistakenly not limit the dashboard to those instruments/events. (Ticket #107785)
- Bug fix: The horizontal line on which users/participants write their signature was mistakenly not displaying in the "add signature" dialog on forms/surveys.
- Bug fix: When copying a project or creating a new project using a project template, it would mistakenly not copy over the project-level settings below (Ticket #108151):
  - Delete a record's logging activity when deleting the record?
  - Auto-delete all Data Export Files in the File Repository that were created more than X days ago?
  - Exempt the project from 2-step login?
  - Always force 2-step login in this project for EVERY login session?
  - Double Data Entry module
  - Date Shifting De-Identification Option: Date Shift Range
  - Enable/disable the Shared Library for this project?

#### Version 10.6.25

- Bug fix: When a user or admin is clicking the "Yes, move to production status" button in the Move To Production dialog in a development project, it would mistakenly not disable the button after being clicked, which might cause confusing pop-up messages to appear if the button was clicked again before it finished processing. (Ticket #108321)
- Bug fix: When using the Data Resolution Workflow and assigning a user to a data query, the Messenger notification would mistakenly fail if the user chose to notify the other user of their assignment via Messenger. Thus they would not be notified. (Ticket #108335)
- Bug fix: When importing or deleting a file via the API Import File or Delete File methods, it would mistakenly allow users to import files even when the entire record is locked or when the record/event/instrument/instance is locked for that file upload field. (Ticket #108399)
- Bug fix: When an alert has an email address set for the setting "Email to send email-failure errors", in certain situations (such as when running the "Re-evaluate Alerts" process) it would mistakenly send the email failure notification for \*all\* alerts in the project instead of just the ones

that have an email address defined for the "Email to send email-failure errors" setting. This could result in some users receiving many more emails than expected when an alert fails to send successfully. (Ticket #85030)

- Bug fix: Fields that are embedded inside other embedded fields might not fully have their data piped in the field's label when viewed in a downloaded PDF of an instrument but might still display some field variables inside braces/curly brackets. (Ticket #108310)
- Bug fix: In certain cases where a backslash (\) is used in a data value that gets piped (e.g., text that contains "p\0.0233"), it might cause the data to get piped recursively many times and mistakenly output a mangle mess of text. (Ticket #108451)
- Bug fix: When selecting the Export Records method in the API Playground, if one or more values were selected for the Fields, Forms, or Records parameter, and then they were deselected to have no selections for them, the API request would return an error after clicking the Execute Request button on the page. (Ticket #108526)
- Bug fix: When clicking the "Delete data for THIS FORM only" button at the bottom of a data entry form, if the record currently exists in multiple arms and the form data being deleted is the only data in the current arm for the record, it would mistakenly delete the record from the arm in addition to removing the form data (although the record would still exist in other arms). This would not cause any data loss, technically, but the user would have to recreate the record in that arm again.

#### Version 10.6.26

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL of a specific endpoint.
- Bug fix: When exporting data to SAS in which the export contains some Ontology Text fields that have a dash in the raw value for some records in the export, it would prevent the data from being successfully loaded into SAS. Now when creating SAS formats for character variables in the resulting SAS syntax file, the values will be wrapped in single quotes for greater compatibility (unless all the values/options are numerical for the field).
- Bug fix: Calendar events that had no time set (i.e., only had the date set) but were scheduled or attached to a record would mistakenly not be ordered by record name when displaying the events of a given day on the Calendar page. (Ticket #108688)
- Bug fix: When a project is in draft mode, the Online Designer would mistakenly allow users to modify the variable name of matrix fields that exist live in production (i.e., not just in draft mode), which should not be allowed because it could inadvertently cause fields to be deleted via renaming. (Ticket #108705)
- Bug fix: When a REDCap server uses the HTTP\_X\_FORWARDED\_FOR header for a user's IP address, in which the IP actually contains multiple IPs delimited with commas (often because a load balancer is being utilized), it now instead just uses the first IP address in the list rather than the whole value, which was causing a blank IP address to be recorded in REDCap's logging for users in this particular case.

- Bug fix: In very specific cases where data has been imported into an instrument (but not for the form status complete field) and no user has entered data for that instrument via the data entry form or survey page yet, the form status icon might mistakenly display as a gray color instead of as red on the Record Home page or Record Status Dashboard. (Ticket #108183)
- Bug fix: If using "LDAP" or "LDAP & Table-based" authentication, any user containing an apostrophe in their LDAP username would cause JavaScript issues to occur for an administrator on the Browse Users page when performing certain actions, such as changing their 2FA code expire time, suspending/unsuspending the user, or deleting the user account from the system. (Ticket #79647d)

#### Version 10.6.26

- Bug fix: If a field's value is being piped on the same data entry form or survey page where the field itself is located, if that field is being hidden by branching logic, in which the user clicks "Okay" to the "Erase value" prompt to hide the field and erase its value, the piped value seen on the page would mistakenly not get changed/reset during this process but would instead retain the previous value of the field. (Ticket #108756)
- Bug fix: If the headers of a matrix of fields are displayed as floating/sticky on a data entry form or survey page, the floating headers would mistakenly disappear (at least until the user scrolls the page again) whenever branching logic gets triggered or if the "Reset" link for radio buttons are clicked. (Ticket #109434)
- Bug fix: When exporting data to a stats package (e.g., SAS) in which some multiple choice fields contain "<" in a choice label, the resulting syntax file might be mangled, truncated, and/or incorrect. Also, that choice label with "<" may not display correctly on the Data Dictionary Codebook page. (Ticket #109571)
- Bug fix: When importing data in standard XML format via the API, some fields that have a blank value in the XML file might cause the data import to fail. (Ticket #109293)
- Bug fix: When using the Scheduling module for a project that has record auto-numbering disabled, it is possible that a record could mistakenly be created twice if one user creates the record via data entry at the same time that another user creates the record via the Scheduling module. (Ticket #109287)

#### Version 10.6.28

- Major bug fix: Fields embedded inside radio button and checkbox choices would fail to appear on data entry forms and survey pages.
- Bug fix: HTML styling on radio button and checkbox choices would mistakenly get removed on a survey page or data entry form.

#### Version 11.1.6

- Major bug fix: Fields embedded inside radio button and checkbox choices would fail to appear on data entry forms and survey pages. (Ticket #109836)

- Bug fix: When uploading a CSV file of events on the Define My Events page for a longitudinal project that has the Scheduling module enabled, it would mistakenly not add the events in the order in which they appear in the CSV file. (Ticket #108552)
- Bug fix: When clicking a table header on the My Projects page, the projects inside any collapsed Project Folders would disappear on the page until the page was reloaded. (Ticket #107547)
- Bug fix: When clicking on a collapsed Project Folder on the My Projects page, it might mistakenly open multiple Project Folders. (Ticket #108579)
- Bug fix: HTML styling on radio button and checkbox choices would mistakenly get removed on a survey page or data entry form.

#### Version 11.1.7

- Bug fix: Using the Smart Variable [aggregate-count] for checkboxes would mistakenly not return any value. It now returns the number of total checkboxes that have at least one checkbox option checked for the field, which is consistent with how [stats-table] behaves for checkboxes.
- Bug fix: Referencing the record ID field in the Smart Variable [stats-table] would not return any values for that row in the table.
- Bug fix: The cron job that sends email notifications for REDCap Messenger might mistakenly send multiple emails repeatedly to users. (Ticket #97084)
- Bug fix: When importing alerts via a CSV file on the Alerts & Notifications page, the “Ensure logic is still true” setting would mistakenly not get set correctly during the upload if it was already disabled/unchecked for an existing alert and then was being enabled/checked in the CSV upload.
- Bug fix: Depending on a user's number format preference as defined on their My Profile page, certain Smart Functions (e.g., [aggregate-sum:field]) might fail to work successfully in calculations and branching logic. (Ticket #109994)
- Bug fix: The survey setting "Save a PDF of completed survey response to a File Upload field" would mistakenly display Signature fields in the drop-down list when it should exclude those. (Ticket #110071)
- Bug fix: The [bar-chart] Smart Variable would fail to display any data in the chart when used with a checkbox field. (Ticket #109370)
- Bug fix: When the Secondary Unique Field is enabled in a project in which a data import is being performed with values for that field, it would mistakenly allow duplicate values to be imported for the Secondary Unique Field if the same value exists multiple times within the data file being imported. (Ticket #109791)

#### Version 11.1.8

- Bug fix: When exporting a PDF of an instrument with data, any slider fields that have a custom range defined (i.e., anything other than 0-100) would mistakenly not be displayed correctly in the PDF and might appear as if the slider has a different value. (Ticket #110391)
- Bug fix: Download links for File Upload fields on surveys might mistakenly still be active and might allow participants to download the file if they still have the download link (e.g., clicking on

the link [my\_file:link] piped inside an email). The download link is correctly no longer active if the survey or project is inactive, but it would mistakenly be active if the survey response has been completed while the survey in general is still active. This has been changed so that it will now return an error message if someone follows the download link after the survey response has been completed and is no longer active anymore (i.e., no one can return to the survey response to modify it). (Ticket #110442)

- Bug fix: When creating a user role in a project that contains Data Access Groups, it would mistakenly display the "Assign To DAG" drop-down list in the dialog, which should not be displayed when creating roles.
- Bug fix: When assigning a user to a user role on the User Rights page while not also assigning them to a Data Access Group at the same time in the popup, it would fail to email the user even if the "Notify user via email?" checkbox is checked in the popup. (Ticket #110339)
- Bug fix: Any HTML tags used in field labels and elsewhere in a project might mistakenly get stripped out when a project is exported as a Project XML file. (Ticket #110503)
- Bug fix: Time-validated text fields would mistakenly not be formatted correctly in the "informat" and "format" statements in the resulting SAS syntax file when exporting data to SAS. This appears to occur only when Missing Data Codes are being utilized in the project. (Ticket #110278)

#### Version 11.1.9

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into a field's value on a data entry form or survey page.
- Bug fix: When a PDF of a survey response is sent in a confirmation email after completing a survey, saved via the survey setting "Save a PDF of completed survey response to a File Upload field", or saved via the e-Consent Framework in the File Repository, it would mistakenly not store the survey version of the PDF (containing the survey title and instructions) but instead would store the data entry form version of the PDF.
- Bug fix: When editing the value of the Secondary Unique Field in a longitudinal or repeating instance context, it might mistakenly log the change extra times unnecessarily. (Ticket #110740)
- Bug fix: Making a call to the Import Records API method when importing zero records might cause an Out of Memory error. (Ticket #110761)
- Bug fix: When using Internet Explorer 11, clicking on a slider field or matrix of fields might mistakenly cause the screen to scroll to the top of the page. (Ticket #111202)
- Bug fix: When using Internet Explorer 11, trying to expand/collapse a project folder on the My Projects page would fail to work due to a JavaScript issue. (Ticket #111553)
- Bug fix: The REDCap cron job named "AlertsNotificationsSender" might unexpectedly crash for PHP 8 in certain circumstances. (Ticket #110702)
- Bug fix: Since Twilio limits SMS messages to 1600 characters, to prevent errors from being returned from a failed request to Twilio for very long text messages, REDCap now automatically breaks an SMS into multiple parts if it exceeds the 1600 character limit. (Ticket #110440)

- Bug fix: When making API data imports without any data being imported (i.e., blank or missing value for the "data" API parameter), it might behave erratically and cause a PHP error. It now correctly returns the error message "No data was provided". (Ticket #110761)
- Bug fix: After copying a user role, a text box would mistakenly appear on the User Rights page below the instruction text.
- Bug fix: When exporting a PDF of an instrument with the character encoding set as Japanese (SJIS), for certain server configurations or PHP versions it might crash with a fatal PHP error. (Ticket #111593)
- Bug fix: When editing a user role in a project that contains Data Access Groups, it would mistakenly display the "Assign To DAG" drop-down list in the dialog, which should not be displayed when editing roles.
- Bug fix: When a project contains repeating events in which a report has filter logic to filter out specific repeating instances (e.g., [current-instance] <> "" and [current-instance] = [first-instance]), the report might mistakenly display no results or incorrect results when there is actually data to display. This does not affect repeating instruments but only repeating events. (Ticket #110896)
- Bug fix: In a project using Twilio telephony services, any Automated Survey Invitations or manually-scheduled invitations that utilize the "Use participant's preference" option for the Invitation Type might mistakenly append the survey link to the message of the survey invitation, even when that is not desired. It now no longer appends the survey link automatically but instead sends the invitation using only the literal text defined by the user. (Ticket #111484)
- Bug fix: When a user's account expires after the account expiration time has passed, the email sent to the user to notify them of this might be slightly incorrect and might mention user sponsors even if the user does not have a sponsor. The user sponsor related language was removed in that case.
- Bug fix: The offline survey message that is defined on the Survey Settings page would mistakenly not perform any piping when being displayed on an inactive survey. (Ticket #111707)
- Bug fix: Fields with the @HIDDEN-PDF action tag would mistakenly be displayed in the PDF download of the instrument when using the PDF download option "Send to printer: select 'Save as PDF' for Printer/Destination". (Ticket #111718)
- Bug fix: If a calculated field in a longitudinal project has a cross-event calculation that contains an [X-event-name] Smart Variable, the calculation might mistakenly not get triggered when entering data on a form, survey, or via a data import.
- Bug fix: When using Twilio SMS or Voice Call services on a survey that has only one field that is a Descriptive field, it would mistakenly ask the Form Status complete question at the end of the survey. (Ticket #111799)
- Bug fix: When calling the surveyLink API method in which a space exists (not necessarily intentionally) at the beginning or end of the "record" parameter passed in the API request, it might cause the space(s) to mistakenly get stored in some parts of the database where the record name is stored, thus causing the Survey Login feature not to work for that particular record anymore. (Ticket #111002)

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into user-defined text. (Ticket #112003)
- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by uploading a malicious file to a File Upload field on a survey page or data entry form, and then trick someone into executing the file by providing them with a URL of specific end-point in the application in which to navigate.
- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the user-defined URL of a Project Bookmark. (Ticket #112021)
- Bug fix: When clicking the "Re-evaluate Alerts" button on the Alerts & Notification in a longitudinal project in which an alert is set to be triggered when an instrument status is complete and when the specified conditional logic is true, it would cause alerts to get triggered on events where the logic is true but where the instrument status is not complete. (Ticket #111866)
- Bug fix: If a malicious user knows how to manipulate some AJAX requests for REDCap Messenger, they might be able to post messages to Messenger threads to which they do not belong, including the ability to post to the General Notifications channel while not being an administrator.
- Bug fix: Fixed typo in email-related error message. (Ticket #112126)
- Bug fix: Fix for PHP 8 error message when viewing contributors of a survey response. (Ticket #112144)
- Bug fix: Logic (including branching logic, conditional logic, and calculations) might not get parsed correctly and thus might return an incorrect result if Smart Variables are used in the logic and also while an element in the logic has a blank value that appears on the left side of an equals sign - e.g., [user-dag-name] = 'vanderbilt' (assuming [user-dag-name] is blank). (Ticket #112010)
- Bug fix: When survey participants attempt to download a file belonging to a File Upload field while on a survey page, it might mistakenly display the error message "NOTICE: This file is no longer available for download". Bug emerged in the previous version of REDCap.
- Bug fix: If a calculated field is utilizing a date and datetime value that are used together in the same datediff() function, if the date value happens to be today's date, it might return an incorrect value (typically a value of "0"). (Ticket #112183)
- Bug fix: When a project is not using "Default Encoding" for "Character encoding for exported files" on the Edit Project's Settings page, calling the API Export PDF method might mistakenly return a corrupt, unopenable PDF file. (Ticket #112035)
- Bug fix: The Text-To-Speech functionality on survey pages did not work on mobile devices, iOS, or in the Safari web browser in previous versions. It should now work successfully for all platforms and browsers. (Ticket #111739)
- Bug fix: The Smart Variable [bar-chart] might mistakenly mislabel the groupings in a bar chart that uses color grouping using a multiple choice field if there are no records that have a value for a specific choice for the multiple choice field. For example, if a grouping field has choices "One", "Two", and "Three", in which no records in the project have "Two" selected, then the resulting bar chart might mislabel all the "Three"s as "Two".

## Version 11.1.11

- **Minor security improvement:** Removed the usage of the PHP function "mt\_rand" in the source code, and replaced it with the more cryptographically secure PHP function "random\_int".
- Bug fix: When copying a project, it mistakenly does not copy the Data Entry Trigger URL into the new project. (Ticket #112269)
- Bug fix: When a project has the setting "Delete a record's logging activity when deleting the record?" enabled on the Edit A Project's Settings page, it would mistakenly not display the checkbox option to allow users to additionally delete a record's logging when deleting the record itself via the Record Home Page. (Ticket #112239)
- Bug fix: When downloading a CSV export of various things in REDCap (e.g., Notification Log export, Data Access Groups export), it might fail to add a BOM (Byte Order Mark) to the CSV file if the file contained UTF-8 characters. The Byte Order Mark is required to open UTF-8 encoded CSV files correctly in certain spreadsheet applications, such as Microsoft Excel. (Ticket #112239)
- Bug fix: If all the discrepancies of any Data Quality rule have been excluded, it would mistakenly not display the "view" link next to the rule (even though it returns "0" results) after the rule had finished running. It is necessary to still display the "view" link so that users can click it in order to view the exclusions inside the dialog. (Ticket #112294)
- Bug fix: When clicking "Cancel" inside the Logic Editor dialog, it might mistakenly revert the value of the text box being modified to the value of another text box that was previously edited via the Logic Editor while on that same page. (Ticket #101200b)
- Bug fix: Fixed some PHP compatibility issues in CDIS functionality when running PHP 5 on the REDCap web server.
- Bug fix: Any generated zip files would mistakenly fail upon creation and thus return an empty zip file when using Google Cloud Storage as the File Storage Method (as defined on the File Upload Settings page in the Control Center).
- Bug fix: The developer method REDCap::getSurveyQueueLink() would mistakenly always return NULL.
- Bug fix: Multiple blank rows in the table displayed on the survey queue page might mistakenly take up too much room on the page. (Ticket #110914)
- Bug fix: When a survey is set to "Auto-continue to next survey" in the Survey Termination Options on the Survey Settings page while the other survey setting "Prevent survey responses from being saved if the survey ends via Stop Action?" is set to "Do NOT save the survey response...", the survey would mistakenly continue to the next survey if the participant triggered the survey to end via a Stop Action.
- Bug fix: When viewing the data entry form for a survey-enabled instrument, if the Compose Survey Invitation dialog is opened on the page, then closed, and then opened again without refreshing the page, the rich text editor in the dialog would mistakenly not be initiated anymore. (Ticket #96574)
- Bug fix: Custom Application Links (which are to be displayed on the left-hand project menu) were mistakenly only visible to users with User Rights privileges in the project. (Bug #112651)

## Version 11.1.12

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in REDCap Messenger.
- Bug fix: When exporting and importing a Project XML file, the Survey Queue setting "Keep the Survey Queue hidden from participants?" (if enabled) would mistakenly not get enabled in the new project created from the XML file.
- Bug fix: When calling the Export Records API method and providing the "fields" parameter, in which the parameter's value only contains the variable names of one or more Descriptive fields in the project, it would mistakenly return data for all fields instead.
- Bug fix: When using the DDP Custom feature, required parameters (i.e., user, project\_id, redcap\_url) were mistakenly not being sent to the custom metadata web service.
- Bug fix: Fields with the @DEFAULT action tag might mistakenly not get prefilled with the default value on the page if any fields on that same instrument contain saved data and have the @CALCDATE or @CALCTEXT action tag. (Ticket #110331)
- Bug fix: If the "Save & Return Later" feature is enabled for a survey in a project that also has the "Survey Login" feature enabled, if a participant clicked the "Save & Return Later" button on a public survey, it would mistakenly display information about a Return Code, which is actually not needed and is confusing because it is inaccurate.
- Bug fix: If a user is requesting that an administrator generate an API token for them, it would mistakenly not log the admin's action of generating the token. Technically, the action was being logged but was just not available on the Logging page in the project for which it was requested.
- Bug fix: When using multiple action tags together on a single field, in which the action tags have values inside single quotes or double quotes (e.g., @NONEOFTHEABOVE='1,2,3' @HIDECHOICE='4'), the action tags might mistakenly not get parsed correctly, thus causing them not to function correctly in some cases. (Ticket #113018)

## Version 11.1.13

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL for the project Logging page.
- Bug fix: When using the Clinical Data Interoperability Services, specifically the CDP Field Mapping page, some translated mappable fields might not display correctly on the page and would mistakenly be garbled.
- Bug fix: If the user clicks the "Piping" or "Smart Variables" help buttons inside the "Add new alert" dialog on the Alerts & Notifications page, and then the user hits their ESC key on their keyboard, it would mistakenly close the "Add new alert" dialog (i.e., the dialog on the bottom) rather than the dialog on the top. (Ticket #112745)
- Bug fix: When using the "Save a PDF of completed survey response to a File Upload field" feature, the resulting PDF that gets saved to the File Upload field would mistakenly hide (not display) any fields in the PDF containing the @HIDDEN or @HIDDEN-SURVEY action tag. In

that particular PDF export, only fields with @HIDDEN-PDF should be hidden (not displayed) in the PDF. (Ticket #113197)

- Bug fix: For projects with Data Access Groups, users that are not currently assigned to a DAG would mistakenly not see the DAG filter drop-down displayed on the Logging page. That drop-down should normally be displayed for users not assigned to a DAG. (Ticket #113188)
- Bug fix: When using Duo as a Two Factor Authentication option, it would mistakenly initiate the Duo 2FA process before the user even selects the Duo option from the list of choices to use when logging in. (Ticket #113193)
- Bug fix: When deleting an instance of a repeating event on the Record Status Dashboard, it might still cause that empty event instance to be displayed in reports and data exports. (Ticket #17859b)
- Bug fix: Due to a fatal PHP error when using certain versions of PHP, attempting to upload a signature on a survey or data entry form would mistakenly fail. (Ticket #113234)
- Bug fix: Real-time piping (i.e., performed via JavaScript after the page has already loaded) might mistakenly truncate the piped text in certain cases where a "<" character is used in the piped field's value. (Ticket #113237)
- Bug fix: If the File Version History feature was disabled at the system level but was still enabled for an individual project (according to the value of that setting in the redcap\_projects database table), the feature might mistakenly function in some capacity in the user interface within the project but might cause issues for other features on the page. If this feature is disabled at the system level, it should by default also be disabled in all projects. (Ticket #113131)
- Bug fix: On the Alerts & Notifications page, some alert settings might mistakenly not get saved when changed on an existing alert. (Ticket #113363)
- Bug fix: When editing a user's privileges on the User Rights page, the expiration date text box might mistakenly not display the full date because the text box is too narrow. (Ticket #113357)
- Bug fix: When the Table-based authentication setting "Force users to change their password after a specified number of days" has been enabled while also using Two Factor Authentication, it might mistakenly display the "Password will expire soon" popup warning on top of the 2-step login, in which clicking the "Change my password" button might cause issues with the 2-step login process for the user. It now still displays the popup dialog, but it functions now more as an information-only warning to let users know that they need to change their password as soon as they finish the login process. (Ticket #113393)
- Bug fix: When deleting a file for a Signature field or File Upload field on a data entry form or survey page, it was mistakenly deleting the file in the backend database when the user clicked the "Remove file" link when it should instead only be deleting the file after they click "Remove file" \*and also\* then save the page via a Save button. This fix makes it consistent with how files are saved when uploaded, in which the add/delete action is finalized only when the Save button is clicked on the page. (Ticket #113058)
- Bug fix: The email test on the Configuration Check page might mistakenly fail and display a false negative for certain email server configurations despite the fact that emails are able to be sent successfully out of REDCap in all other places in the application.
- Bug fix: When the "URL shortening service" setting is disabled on the Modules/Services Configuration page in the Control Center, it would still mistakenly display the option to create a

custom/short URL for public project dashboards. It should not be displayed as an option there when disabled at the system level. (Ticket #112895)

- Bug fix: When viewing the draft mode changes for a production project, any field with branching logic that is being modified might mistakenly get truncated or display incorrectly on the page if the branching logic contains "<>". (Ticket #113237b)
- Bug fix: When navigating in a project on a mobile device, in which the user has been assigned to multiple Data Access Groups via the DAG Switcher, the blue toolbar at the top of the page for switching DAGs would mistakenly not be visible. (Ticket #113459)
- Bug fix: In a longitudinal project, Data Quality rules A and B might mistakenly not return a discrepancy when a field is missing a value in which the field's branching logic contains a Smart Variable and also does not have a unique event name or X-event-name prepended to all the field variables used in the rule logic. (Ticket #111474)

#### Version 11.1.14

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in various places.
- Bug fix: Fix for PHP 8 compatibility issue when entering data on a repeating instrument in specific cases. (Ticket #113507)
- Bug fix: The discrepancy result for Data Quality rules A and B would mistakenly display fields that exist on instruments for which the current does not have Data Viewing Rights. (Ticket #113589)
- Bug fix: If a checkbox field contains an invalid/stale value (i.e., not a currently existing choice) in the database backend, and then a Missing Data Code is saved for the field via a data entry form, both the invalid/stale value and the missing data code value will stay stored in the backend, and the data entry view mistakenly will not show that a missing data code has been saved for the field. (Ticket #113763)

#### Version 11.1.15

- Bug fix: When performing cross-form/cross-event calculations (via data entry forms and surveys) or auto-calculations (via data import) - including both calc fields and @CALCTEXT fields - in a longitudinal project, in some cases the calculated value would mistakenly be saved in events that currently have no data. Calculated fields should only operate and save a value in events that already contain data. (Ticket #113972)
- Bug fix: When using the Double Data Entry module, instead of seeing the correct colored form status icons, a user that is DDE person 1 or 2 would mistakenly see all gray status icons for instruments on the Record Status Dashboard and on the left-hand menu while viewing a record. (Ticket #114068)
- Bug fix: Conditional logic used for a survey in the Survey Queue might mistakenly not evaluate correctly in specific cases, such as when using certain Smart Variables (e.g., [record-dag-name]). (Ticket #114181)

- Bug fix: When using the [survey-link] or [survey-url] Smart Variables in a longitudinal project in which a literal instance number is appended to it (e.g., [event\_1\_arm\_1][survey-link:my\_survey][2]), it would mistakenly always return the link/URL of the first instance instead of the correct repeating instance.
- Bug fix: The Custom Application Links page in the Control Center might crash due to a PHP compatibility error when using PHP 8.0. This might also occur when downloading the User-DAG Assignments CSV file on the User Rights page. (Ticket #114292)
- Bug fix: Downloading the User-DAG Assignments CSV file on the User Rights page might produce an incorrectly structured CSV file. (Ticket #114292)

#### Version 11.1.16

- Bug fix: When using a Text Box field with date, time, datetime, or datetime w/ seconds validation as the x-axis field for a [scatter-plot] Smart Chart, the chart would mistakenly not display the data correctly. (Ticket #107721)
- Bug fix: Slider fields that have HTML inside the slider labels might mistakenly not display correctly in a downloaded PDF of an instrument.
- Bug fix: If a field is used as a Live Filter in a report, in which some values for that field contain spaces or other characters that might get URL-encoded, it would mistakenly cause the Live Filter not to return any values in the report.
- Bug fix: The real-time logic validator in the Logic Editor popup might mistakenly fail and would return a false positive saying that the logic is invalid if the logic contains certain Smart Variables, such as [record-name].
- Bug fix: When a user has been assigned to multiple Data Access Groups via the DAG Switcher, the User Rights page would mistakenly not correctly display how many DAGs to which they are assigned if the user's username contained a capital letter when they were added to the project. (Ticket #114550)

#### Version 11.1.17

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text on the Project Setup page.
- **Major bug fix:** When a repeating instrument has data entered on multiple repeating instances, and then afterward the instrument is made to no longer be repeatable, then any new data entered on that data entry form for fields that already have data on other instance might mistakenly get stored in the wrong repeating instance (i.e., get orphaned in the "redcap\_data" database table) and thus would fail to be seen when reloading the form again. (Ticket #115308)
- Bug fix: When a user creates a new alert, the "Email From" address is now validated on the server side to ensure it is valid and belongs to a user in the project (or belongs to an administrator, if the current user is an admin that is not a user in the project).
- Bug fix: The green label "Field is embedded elsewhere on page" mistakenly doesn't show up for SQL fields on the Online Designer (Ticket #114889).

- Various fixes for the External Module Framework.
- Bug fix: For some REDCap installations, the redcap\_new\_record\_cache database table might have an incorrect table collation.
- Bug fix: For surveys that have a "Size of survey text" setting set to "Large" or "Very Large", any slider fields on the survey page that display their number value to the right might mistakenly display the value textbox as too narrow in certain situations. (Ticket #114920)
- Bug fix: When using the @CALCDATE action tag with certain values entered for the date/datetime field used in the calculation, it might cause the page to unexpectedly crash with a fatal PHP error when running PHP 8. (Ticket #114831)
- Bug fix: The API Tokens page in the Control Center would mistakenly not display the "Last Used" timestamp for some users displayed in the tables on the page. Also, some AJAX calls that load the drop-down lists on the page might fail in certain cases. Additionally, the "Manage API tokens by Project" drop-down would mistakenly not display its full list of options when the page initially loads but only fully loads after an option is selected from it. (Ticket #114834)
- Bug fix: When uploading a CSV file of Automated Survey Invitations in the Online Designer, any datetimes set for the "Send on exact date/time" setting (including reminders) might mistakenly not get saved correctly. (Ticket #115024)
- Bug fix: Page-view information for plugins and external modules were mistakenly not getting stored in the redcap\_log\_view table and thus such information was not being displayed on the MySQL Dashboard page in the Control Center.
- Bug fix: When using the Double Data Entry module, instead of seeing the correct colored form status icons, a user that is DDE person 1 or 2 would mistakenly see all gray status icons for instruments on the Record Status Dashboard and on the left-hand menu while viewing a record. This issue was supposedly fixed in REDCap 11.1.15 LTS but mistakenly was not. (Ticket #114840)
- Bug fix: The feature that detects database structure issues might mistakenly create false negatives in specific cases where a database table's collation isn't correct, thus allowing the issue to go unnoticed.
- Bug fix: When using [aggregate-X] Smart Functions in branching logic or calculations, an error message might mistakenly display on the page saying that errors exist if any of the [aggregate-X] functions return a blank value. (Ticket #115235)

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- **Minor security fix:** When displaying a fatal PHP error to REDCap administrators, the full file path of the PHP file is no longer exposed and output on the page, but instead it only outputs the local path from the REDCap webroot in the PHP error message. This prevents inadvertently exposing some of the file/folder structure of the web server.
- Bug fix: The "Returning?" popup that appears near the top right of a survey page would display text and contents that mistakenly did not conform to the survey theme of the current survey. (Ticket #115314)
- Bug fix: In some very specific cases when using PHP 8, the upgrade module might mistakenly not load due to a fatal PHP error. (Ticket #115680)

- Bug fix: Returning 'false' from the redcap\_email hook method in an external module would mistakenly not prevent emails from being sent.
- Bug fix: When a repeating instrument has data entered on multiple repeating instances, and then afterward the instrument is made to no longer be repeatable, the Data History popup would mistakenly display the history for all repeating instances for that field (including the ones that have now been orphaned), rather than for only the first instance. (Ticket #115308b)
- Bug fix: The jSignature JavaScript library used for "signature" field types was mistakenly reverted to an earlier version of the library that was sometimes not compatible with a stylus. (Ticket #115607)
- Bug fix: When using the Twilio telephony services in a project and utilizing the "Designate a phone number field" setting, in certain situations it might fail to display the record name of the participant in the Survey Invitation Log. (Ticket #115206)
- Bug fix: When appending the Smart Variable [current-instance] to a field variable in branching logic or a calculation on an instrument that is not a repeating instrument and not on a repeating event in the current context, it might mistakenly not evaluate the branching logic/calculation correctly on the data entry form or survey page. (Ticket #115585)
- Bug fix: When viewing a survey via a private/unique survey link (i.e., not via a public survey link), in which the survey is set to "offline" and has field variables piped into its custom offline message, it would mistakenly not pipe the data successfully in the offline message. (Ticket #116092)
- Bug fix: When exporting a PDF of an instrument containing data, if a drop-down or radio field in the PDF has a choice coded as "0" in which the field's saved value is not currently "0", the resulting PDF might mistakenly show both the "0" choice and the saved choice as being selected. This appears to only occur in certain versions of PHP 7. (Ticket #115505)
- Bug fix: When the enhanced checkbox option has been enabled on a survey in which a checkbox on the survey utilizes the @NONEOFTHEABOVE action tag, if the checkbox is embedded in another field on the page, the enhanced buttons would mistakenly not behave/display correctly for the checkbox when selecting the "None of the Above" choice or if another option is clicked while the "None of the Above" choice is already selected. Note: This does not affect the data being saved correctly for the checkbox but affects only the displaying of the enhanced buttons; thus it could be confusing for the survey participant. (Ticket #115891)
- Bug fix: When using the [survey-link] or [survey-url] Smart Variables in a project in which a literal instance number is appended to it (e.g., [survey-link:my\_survey][2]), it might mistakenly return the link/URL of the first instance instead of the correct repeating instance.
- Bug fix: When using a Smart Chart, Smart Table, or Smart Function that has a unique report name appended to it, anytime a REDCap page would display the output of the chart/table/function, it would mistakenly log an individual "Data export" event on the Logging page for every chart/table/function having a unique report name.

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in various places.
- **Minor security fix:** To improve the overall security of the application, the SameSite attribute of all cookies created by REDCap now has a value of "Lax", whereas in previous versions it was set to "None".
- **Minor security fix:** To prevent a Session Fixation attack, session IDs are now regenerated upon every successful login by a user.
- Bug fix: When an administrator processes and commits a user's draft mode changes for their production project, the "Project Changes were Approved" email confirmation sent back to the user would mistakenly have its From address as the admin's email when it should instead be the general "Email Address of REDCap Administrator". (Ticket #116368)
- Bug fix: When calling the "Export Records" API method with parameters type=eav and format=csv, the API might mistakenly output survey fields incorrectly if exportSurveyFields=true in the API request. Additionally, it might mistakenly output the "redcap\_event\_name" and "redcap\_repeat\_instance" CSV columns in certain cases when those columns are not relevant and should not be output. (Ticket #115862)
- Bug fix: Fixed a compatibility issue for logged IP addresses in some server environments in which some load balancers/proxies/WAFs would unexpectedly add the port number to the HTTP\_X\_FORWARDED\_FOR header that ultimately gets used as the client's IP address. (Ticket #116486)
- Bug fix: The page on a survey that is displayed after a participant has clicked the "Save & Return Later" button would display text and contents that mistakenly did not completely conform to the survey theme of the current survey. (Ticket #116613)
- Bug fix: Using the ":record-name" parameter in the [stats-table] Smart Variable would mistakenly not limit the descriptive stats displayed in the table to the currently viewed record but would instead display the stats for all records in the project. (Ticket #116546)