

REDCap Flex Migration / Upgrade Changelog - September 10, 2019

Platform Changes

- REDCap instance renamed to "REDCap Flex"
- URL changed from <https://redcap.mobilityandhealth.ca/redcap> to <https://flex.redcap.ubc.ca>
- REDCap Flex is upgraded from REDCap Standard version 7.6.7 to REDCap Standard version 8.11.11
- The login page is replaced with the UBC login screen used by many CWL-enabled applications
- REDCap Flex users that have Enhanced CWL (multi-factor authentication) will be asked to provide a second factor of authentication (e.g., Duo mobile app, physical token)
- REDCap Flex accounts are suspended after 180 days of inactivity
- UBC ARC REDCap Governance Documents released
- UBC ARC REDCap Terms of Service updated

New Features

- New action tag: @MAXCHOICE

- Causes one or more specified choices to be disabled (i.e., displayed but not usable) for a checkbox, radio button, or drop-down field after a specified amount of records have been saved with that choice. For example, @MAXCHOICE(0=50,1=75,2=50) would imply that once 50 records have selected the '0' coded choice, that choice will become disabled for any record viewed afterward that does not have that choice saved, such as when the form/survey is opened for a new record, and thus 75 records for choice '1', 50 for choice '2', etc.

- The format must be the action tag name followed by the choice designations inside parentheses, in which each will follow the format of ChoiceCode=MaxCount with each choice separated by commas. Note: For longitudinal projects, when counting the number of choices saved for records, it will treat all events as separate, meaning that in the example above, choice '0' can have a max number of 50 selections in EACH event in the project.

- Note: This action tag not only gets employed when a form or survey is loaded but also when a form or survey is submitted in order to prevent users/respondents from going over the max amount specified. If a user submits a form/survey, at which point the maximum has been reached due to simultaneous users entering data just before them, it will not save that field's value (but will save all the other fields on the form/survey), and it will reload the form/survey and tell the user to make another selection for the field.

- New action tag: @MAXCHECKED - Allows a checkbox field to have a maximum number of checkboxes that can be checked. If other checkbox options are clicked after the maximum has been reached, those choices will not be able to be checked. The format must be @MAXCHECKED=#, in which # is a positive

integer. For example, @MAXCHECKED=3 will allow a maximum of 3 checkbox choices to be checked. NOTE: This action tag can only be utilized by Checkbox fields, and it does not get enforced during data imports.

- New feature: New option to allow respondents to return to a partially completed or fully completed survey response without needing a return code. When enabling "Save & Return Later" for a survey on the Survey Settings page, it will still default to requiring a return code in order for a respondent to continue the survey where they left off. But a user may opt to allow respondents to return to and continue their survey with only the survey link (i.e., without needing a return code in addition to the link) to view and modify their previous responses on that survey. Note: A warning exists in bold text in the informational popup for this feature that states the following: "If you are collecting identifying information (e.g., PII, PHI), for privacy reasons it is HIGHLY recommended that you leave the option unchecked so as to enforce a return code."

- New feature: Sponsor Dashboard

- The Sponsor Dashboard can be utilized by users who have been designated as a sponsor for another REDCap user. In many cases a sponsor is a secondary contact person for the user or someone that helps manage the account (or perhaps they requested that the account be created). The Sponsor Dashboard allows sponsors to manage their sponsored users by viewing various information about them, such as username, name, expiration, suspended status, and some general activity. The dashboard contains various functions to allow sponsors to make requests to REDCap administrators to help manage their sponsored users by performing the following actions: 1) resetting passwords (Table-based authentication only), 2) Setting/expiring a user's account expiration, 3) suspending users, and 4) unsuspending users.

- A link to the dashboard will be displayed at the top of the My Projects page for any users that are a sponsor.

- If an institution decides not to allow sponsors to use the Sponsor Dashboard, it can be disabled on the User Settings page in the Control Center.

- Note: The User Settings page in the Control Center also contains a setting "Default amount to set/extend user expiration times", which sets the default time (in days) for setting or extending a user's account expiration time when requested by a sponsor. In the specific case where the expiration time is being set (not extended), the administrator has the ability to modify the exact expiration time during the request approval process.

- New features: PDF Auto-Archiver & e-Consent Framework

- PDF Auto-Archiver

- Upon survey completion, a compact PDF copy of the survey response can be automatically stored in the project's File Repository, from which the archived PDFs can be downloaded at any time.

- This setting is located on the Survey Settings page in the Online Designer, thus it can be enabled for any given survey in a project.

- e-Consent Framework

- This feature, which works together with the PDF Auto-Archiver, provides functionality for user's to implement electronic consent (e-Consent) using a survey as the consent form, such as for capturing the consent of a research study participant.

- The e-Consent Framework option adds two things to the typical survey-taking process. 1) Before a participant completes the survey, an extra certification page is added to end of the survey that displays an in-line PDF copy of their survey responses in which they will be asked to confirm that all information in the document is correct. Once they confirm all is correct, the survey will then be marked as complete. The survey will not be considered complete until they fulfill the certification step. 2) Upon completion of the survey, a static copy of their responses in the form of a consent-specific PDF will be stored in the project's File Repository. The consent-specific PDF will have the values of the e-Consent Framework Options inserted at the bottom of each page in the PDF. These values (i.e., name, date of birth, etc.) are added to the PDF as extra documentation of the identity of the person who is consenting.

- A participant's IP Address is also recorded and displayed in the File Repository after the e-Consent process, but this option to collect the IP address can also be optionally disabled at the system level (if desired) on the Modules/Services Configuration page in the Control Center.

- The e-Consent Framework feature can be disabled at the system level (if desired) on the Modules/Services Configuration page in the Control Center.

- In addition to storing the e-Consent PDFs in a project's File Repository, you may also optionally enable the External Storage option (requires PHP 5.6.0+), which will automatically store the PDFs on a separate file server (using WebDAV or SFTP). This external file server may serve as a giant "vault" for your entire REDCap installation's consent forms. This is a system-level setting that can be enabled on the File Upload Settings page in the Control Center.

- New feature: Survey-specific email invitation fields

- This is a new option on the Survey Settings page that can be enabled for any given survey, in which a user may designate an email field for sending survey invitations for that survey only.

- The email field being utilized for the survey can exist on any instrument in the project, and you may use a different email field on each survey. You may also use the same email field for multiple surveys.

- This feature is similar to the project-level email invitation field except that it is employed only for the survey where it has been enabled. This allows users to have data entry workflows that require multiple surveys where the participant is different for each survey. Using this feature, multiple people can be emailed a survey invitation, after which all the survey data they enter goes into the same record in the project.

- New feature: Smart Variables

- Smart Variables are dynamic variables that can be used in calculated fields, conditional/branching logic, and piping. Similar to using project variable names inside square brackets - e.g., [heart_rate], Smart Variables are also represented inside brackets - e.g., [user-name], [survey-link],

[previous-event-name][weight], or [heart_rate][previous-instance]. But instead of pointing to data fields, Smart Variables are context-aware and thus adapt to the current situation. Some can be used with field variables or other Smart Variables, and some are meant to be used as stand-alone. There are many possibilities.

- 35 Smart Variables are available. They can reference things with regard to users, records, forms, surveys, events/arms, or repeating instances. Documentation and examples for using Smart Variables are included on the Project Setup page, Online Designer, and other places throughout REDCap in a popup and alternatively as a standalone page.

- Note: While Smart Variables can be used for filters in reports and for filters for Custom Record Status Dashboards, they are not yet able to be utilized in Data Quality rule logic.

- New features relating to Data Privacy (e.g., GDPR) – The new settings listed below are available on the “Edit a Project’s Settings” page for a given project. Thus these must be enabled by a REDCap administrator on a per-project basis

- (optional) Delete a record's logging activity when deleting the record - If enabled, this will delete all the data values and actions logged for the given record being deleted as seen on the Project Logging page. Note: For multi-arm longitudinal projects, this feature will delete the record's logging for the given record only in the current arm. This feature can be used to aid in compliance with GDPR or similar regulations that require 'right to erasure'.

- (optional) Auto-delete all Data Export Files in the File Repository that were created more than X days ago – To enable this setting, an administrator may set a value from 1 to 999 to set the number of days after which all Data Export files will get automatically deleted from the project’s File Repository. This feature can be used to aid in compliance with GDPR or similar regulations that require 'right to erasure'. NOTE: This will only delete files under the Data Export Files tab. No other types of files in the File Repository will be deleted.

- (optional) Custom footer text for survey pages - Custom text may be provided (including HTML-formatted text) that will be displayed either via a modal dialog or inline at the bottom of all survey pages in the project. This could potentially be used for display a data privacy statement or other similar things that should be displayed on the same page where data is collected. Note: This is only display on survey pages.

- New API method: “Import Repeating Instruments and Events” – Allows users to import a list of the repeated instruments and repeating events for a project as a means of setting which instruments and events should be repeatable.

- New feature: Many project components added to the Project XML file – When downloading the Project XML of metadata or metadata+data on the Project Setup->Other Functionality page, it now provides checkboxes to allow users to incorporate the project components listed below in the XML file. This means that all these things will be easily transferable now when exporting/importing the Project XML to create a new project on the same REDCap server or on a different REDCap server. Note: The server on which a project is being created using a Project XML file must also be on REDCap 8.10.0 or higher in order for these components to be added, otherwise it will simply ignore these components when creating the new project.

- Data Access Groups (including DAG assignments for records if data is included in the XML file)
- Data Quality Rules
- User Roles
- Surveys and survey settings (including a survey logo, if used)
- Automated Survey Invitations
- Survey Queue
- Reports
- Report Folders
- Record Status Dashboards
- DDP Field Mappings (for DDP Custom and DDP on FHIR) – administrator must still enable DDP in the project manually

Discontinued Features

- URL Shortener: The third-party URL shorteners from the United States used by REDCap will be disabled. All shortened URLs generated prior to the upgrade will continue to work
- REDCap Messenger: the internal messaging system will be disabled after the upgrade

Infrastructure Changes

- Upgraded the operating system to Red Hat 7.5+
- Upgraded to Apache 2.4.x
- Upgraded to PHP 7.2.10
- Upgraded to MariaDB 10.3.x

Bug Fixes / Improvements

Version 7.6.8

- Improvement: When a calc field's value is changed, it will now display a red border on the right edge of the calc field's text box to subtly indicate that the displayed value is different from the stored value in the database. And if the calculated value gets changed so that its value matches the stored value again, the red border will disappear. This will help users make note of when calculations have been triggered and if there is any disparity between the displayed value and the stored value.

- Major bug fix: If a calculated field in a longitudinal project is using cross-event calculations, in which at least one of the fields in the calculation has a prepended event name (e.g., [enrollment_arm_1][field]) while also one of the fields does not have a prepended event name (e.g., [field]), then even though the calculated value displayed on the form/survey appears correct prior to saving, the field might mistakenly get saved with a blank value when pressing the Save button. This would not be noticeable by the user when entering data but only seen in a report/export or when running Data Quality rule H. Note: This issue does not appear to affect Automated Survey Invitations, calculations performed during data imports, or Data Quality rule H, but it only occurs when saving data on data entry forms and surveys in this very specific scenario described above. To fix this issue after upgrading REDCap, the user can run Data Quality rule H in the project, or an administrator can use the "Find Calculation Errors in Projects" page in the Control Center to find any affected projects.
- Bug fix: If the PHP memory_limit configuration setting was set in units of "G" (for gigabytes) in the PHP.INI file, it would get interpreted incorrectly when attempting to increase PHP memory allocation.
- Bug fix: When printing out a survey containing responses where some "enhanced radio buttons and checkboxes" have been selected on the survey, it would be confusing in the printout as to which choice was selected. (Ticket #28111)
- Bug fix: Project pages would not render correctly due to JavaScript errors occurring on every page if the using Internet Explorer 8. (Ticket #28178)
- Bug fix: When viewing a read-only survey response on a data entry form (i.e., prior to clicking the "Edit response" button), if a calculated field's value changed when the page loaded, then if the user attempted to close the browser tab or clicked a link to navigate to another page, it would mistakenly prompt them with the "Save your changes?" dialog. It should only prompt them with that dialog if they were in edit mode for that survey response.
- Bug fix: When the Data History popup for a field on a data entry form, if two events for the field occurred at the same exact time, such as saving data with an auto-calculation event right after, those two events might mistakenly not be displayed in the correct order in the popup.
- Bug fix: When a data export takes more time to complete than the set auto-logout time for REDCap, it would mistakenly prevent the data export from completing fully because the "Your REDCap session has expired" dialog would appear on the page even if the user is actively moving their cursor around or clicking on the page, which normally restarts the auto-logout timer to prevent the auto-logout from occurring while a user is still active on a page.
- Bug fix: When using the Data Resolution Workflow module in a project containing repeating instruments while also using Data Access Groups, some of the charts displayed on the the Resolution Metrics page, specifically "Number of open queries (by data access group)" and "Number of closed queries (by data access group)", would mistakenly display incorrect counts in the chart. This issue was supposed to have been fixed in the previous release but mistakenly was only partially fixed.
- Bug fix: If the Data Resolution Workflow (DRW) is enabled on a project, and a user has DRW user privileges but does not have Data Quality user privileges, then the "Data Quality" link would mistakenly be displayed on the left-hand menu. (Ticket #28514)

- Bug fix: When importing data via the Data Import Tool or API import records method, if a variable in the import mistakenly had some uppercase letters when all letters should be lowercase, the error message to the user would omit those uppercase letters when displaying the incorrect variable names to the user, thus making it difficult to understand the error message to learn what is wrong. (Ticket #28293)

Version 7.6.9

- Improvement: Updated the Help & FAQ page with new content.

- Major bug fix: Users could not create new user roles or edit user roles in a project. Bug was introduced in version 7.6.8. (Ticket #29067)

- Major bug fix: Automated Survey Invitations would mistakenly not get scheduled for longitudinal projects where the conditional logic contains datediff+today and also contains cross-event logic in which one of the events has no data (i.e., empty event of gray status icons). This same issue would also occur for custom Data Quality rules, in which it would mistakenly not return any discrepancies for records if the rule logic contains datediff+today and also contains cross-event logic in which one of the events has no data. (Ticket #28516)

- Bug fix: A fatal PHP error can occur on every project page if the REDCap web server is running PHP 5.3 or 5.4. This appears to only occur if the External Modules beta version is installed on the REDCap server. (Ticket #28628)

- Bug fix: If a survey queue is set up in a longitudinal project, and then the event-form designations are modified afterward, it might mistakenly display some surveys in the survey queue that should not be displayed. (Ticket #28696)

- Bug fix: If a report is being sorted by the record ID field in descending order, and the project has record auto-numbering enabled but some of the record names are not numerical (because they were created via a data import or before record auto-numbering was enabled), then the report would fail to order the results correctly. This occurs because the report would falsely assume that all record names were numerical merely because record auto-numbering was enabled, in which case it would try performing a numerical sort, which does not work as expected with non-numerals. REDCap now only attempts to perform a numerical sort of the sort fields if the fields are truly numbers (i.e., have "number" or "integer" validation or are a slider or calc field).

- Bug fix: The cron job to trigger Automated Survey Invitations that have datediff+today in their conditional logic would stop suddenly if any ASI logic was syntactically incorrect, thus preventing other later ASIs in that same project from getting run. Additionally, the cron job might mistakenly be checking ASIs that had been disabled. (Ticket #28516)

- Bug fix: A fatal PHP error can occur on every project page if the REDCap web server is running PHP 5.3 or 5.4. This appears to only occur if the External Modules beta version is installed on the REDCap server. (Ticket #28628)

- Bug fix: For longitudinal projects with multiple arms and with repeating instruments, on the Record Home Page or Record Status Dashboard when clicking on the form status "stack" icon for a repeating instrument with multiple instances saved, it would mistakenly not display the floating popup list of all the instances for that instrument but would instead display an empty box. (Ticket #28970)

- Bug fix: The Safari browser might mistakenly throw JavaScript errors on survey pages.

Version 7.6.10

- Improvement: Emails sent from REDCap now follow a more standardized format by including both HTML text and plain text in each email, thus making emails a bit more likely to be received by their recipients without them getting flagged as spam.

- Bug fix: Data Resolution Workflow popup dialog might mistakenly appear empty if some comments or logged events contain certain special characters. (Ticket #29391)

- Bug fix: The Record Home Page would not display some form status icons correctly for repeating instruments in which the first instance of the instrument does not exist - most likely because it was deleted at some point. (Ticket #28821)

- Bug fix: The tables of repeating instruments displayed at the bottom of the Record Home Page might not display in the correct order.

- Bug fix: If field labels contain certain special characters, then when creating/modifying a report, the auto-suggest feature when typing variable names in Step 2 or 3 would mistakenly not work. (Ticket #29354)

- Bug fix: Confusing text is mistakenly displayed for the instructions on the "Request delete project" button on the Other Functionality page in a project that is in production status. (Ticket #29355)

- Bug fix: Confusing text is displayed when in draft mode in a production project after a data dictionary has been uploaded. It now states explicitly that the changes have been made to the draft and thus have not been committed to the live version of the project. (Ticket #29430)

- Bug fix: The Publication Matching module would mistakenly treat a PI's email address as separate emails if it was found to be typed in different cases (lower vs upper) in different REDCap projects. This would cause some PIs to receive emails saying that they had publications to review in REDCap, but it would say "0 publications" when they clicked the link in the email to open the page. Note: While this should fix the issue going forward, it may not fix it for publications already pulled from PubMed for the PIs. (Ticket #29381)

- Change: For PDF exports of data entry forms with data, if a field that is normally removed from exports due to users having export rights of "De-Identified" or "Remove all tagged Identifier fields" is being piped into a label, field note, etc. in the PDF file, that field value will no longer be piped in the PDF file but will instead be redacted (i.e., replaced with the text "[*DATA REMOVED*]"). This change is made to increase security/privacy regarding de-identification of data in data exports.

- Bug fix: When submitting data on a data entry form or survey page, the server-side validation mistakenly does not check the values submitted for an "SQL" type field. (Ticket #29401)
- Bug fix: If a File Upload field has a file uploaded for it but also has the @READONLY action tag, the link to download the file would mistakenly be disabled, thus preventing users from downloading the file. The download link should be enabled to allow users to download the file. (Ticket #29484)

Version 8.0.0

- Improvement: On the Public Survey Link page in a project, a new button "Open Public Survey + Logout" has been added to increase security in case users want to open the public survey while ensuring that the participant cannot access their REDCap account in the other browser tab. (Ticket #29686)
- Bug fix: The font size of any links that were placed in a survey's instructions, field labels, or acknowledgment text would appear too small if the survey was set with "Large" or "Very Large" text size.
- Bug fix: Fixed typo in Data Import Tool
- Bug fix: If a user is uploading a Data Dictionary containing a PROMIS CAT (computer adaptive test) survey, in which the CAT contains some multiple choice fields that have duplicate codings, it would mistakenly prevent the user from uploading the Data Dictionary. It should be ignoring duplicate codings in CATs.
- Bug fix: If a user is uploading a Data Dictionary containing a PROMIS CAT (computer adaptive test) survey and the user modified the Choices column for a CAT field in the Data Dictionary, it would mistakenly accept those changes and allow the Data Dictionary upload to proceed, thus corrupting the CAT's field metadata. This would not affect participants taking the CAT in any way (i.e., the survey would still appear correctly when taking it), but it might cause the CAT not to display correctly when a user views a participant's CAT response on a data entry form afterward.
- Bug fix: If a user enters data on a repeating instrument but fails to enter a value for a required field, and then the user clicks the "Ignore and go to next form" button in the "Some fields are required" prompt, in which the next form is also a repeating instrument, then it would mistakenly take the user to the next form but on the same instance number that the previous form was on, which may cause some instance numbers to get skipped on the second form. When clicking the "Ignore and go to next form" button, it should always take the user to instance #1 of the next form if the next form is a repeating instrument.
- Bug fix: Improving compliance with SMTP email servers by added a space after the "Cc:" and "Bcc:" email headers since some SMTP servers might reject emails sent from previous REDCap versions, which had no space in those headers. (Ticket #3943)
- Bug fix: When editing or adding a calc field in the Online Designer, it would mistakenly still show the results in the section "test calculation with a record" if that option had just been used for another calculated field that was being edited or added previously while on that page, thus mistakenly showing results that do not correspond to the current field being edited/added (Ticket #29682)

- Bug fix: When opening the Automated Survey Invitation setup popup in the Online Designer, if a particular ASI has been set as "inactive" beforehand, then when the popup opens, it would mistakenly display all the ASI setup options as blank as if it had never been set up before. (Ticket #29765)
- Bug fix: When the Project Modification Module displays a list of "fields to be deleted", it would mistakenly truncate the count of records/events that would be affected by the field being deleted. (Ticket #29770)
- Bug fix: If a user opens a data entry form on a repeating event, it would mistakenly never enable the Survey Options at the top right of the page, even if the form has been saved already. (Ticket #29857)
- Bug fix: When adding/editing the logic for a Data Quality rule, in which the logic contains a "less than" (<) character followed immediately by a function name (e.g., round) - i.e., without a space between the "<" and the function name, then the rest of the logic would get truncated when displaying the logic in the table of Data Quality rules. (Ticket #30088)

Version 8.0.1

- Improvement: New "clickjacking prevention" option at the bottom of the "Security & Authentication" page in the Control Center allows administrators to enable this option if they want to prevent REDCap pages from being embedded in external websites (e.g., embedding a survey page inside an iframe on another website). Preventing clickjacking is often regarded as an improvement to security. Note: If you wish to allow REDCap users to embed REDCap pages in external websites, do not enable this option but leave it as "Allow...".
- Bug fix: When copying a project with surveys, the value of the "Allow participants to download a PDF of their responses at end of survey?" survey setting would mistakenly not get copied to the new project. (Ticket #28639)
- Bug fix: When downloading a PDF of a data entry form with data, in which the user is downloading all forms for all records or all forms for a single record, it would mistakenly not display the locking/e-signature timestamps in the PDF. (Ticket #29915)
- Bug fix: When downloading a PDF of a survey response with data, on certain occasions it might mistakenly display incorrect survey completion timestamps in the PDF. (Ticket #29930)
- Bug fix: On the Record Status Dashboard when clicking on the form status stack icon (representing multiple repeating instances of a form or event) in a longitudinal project that has multiple arms, it might mistakenly not display the floating table of instances but instead would display a horizontal black line after clicking the icon. (Ticket #29927)
- Bug fix: In longitudinal projects using repeating events, the Record Home Page might mistakenly display some form status icons in the wrong column in the table for records that have more than one instance saved of a repeating event. (Ticket #30077)
- Bug fix: When one or more fields in a matrix contain certain special characters in their field label, it might prevent the "Edit Matrix of Fields" popup from being displayed after clicking the pencil icon on the Online Designer. (Ticket #30250)

- Bug fix: On certain occasions, rule E in the Data Quality module will mistakenly return discrepancies that have blank/null values, which should never be returned when running rule E. (Ticket #14976, #28576)
- Bug fix: If a Notes field is using the @READONLY action tag, the "expand" link displayed on the survey or form below the text box would mistakenly not work. (Ticket #30433)
- Bug fix: If a project is utilizing the randomization module, and the randomization field somehow already has a value saved for it prior to a given record being randomized, then it will now disable that field on the data entry form and prevent the record from being randomized. (Ticket #30427)
- Bug fix: If a project that has repeating instruments or repeating events is using the Data Resolution Workflow module, and a value is marked as Verified on the first instance of a repeating instrument/event, then if a value is changed on another instance of that instrument or event, respectively, then it would mistakenly De-verify the field on the first instance rather than on the current instance. (Ticket #30457)
- Bug fix: If a project that has repeating instruments or repeating events is using a Data Quality rule with Real-time Execution enabled, if the DQ rule finds discrepancies when saving a repeating instrument/event, in which the user is not on the first instance, then in the DQ discrepancy popup, it might mistakenly display some data values from the first instance of the instrument/event rather than from the current instance. (Ticket #30477)
- Bug fix: Fixed typo in "Branching Logic Errors Exist!" popup

Version 8.0.2

- Change: For added flexibility, the Survey Queue setup dialog in the Online Designer will now display the project's first data collection instrument (assuming the instrument has been enabled as a survey), whereas previous versions did not allow the first instrument to be enabled in the Survey Queue.
- Change: When viewing a repeating instrument's data entry form for a record in a project, the "current instance" drop-down displayed near the top of the page no longer displays the instance number in a fraction format where it shows the total instances following by a slash (e.g., 2/5). It now only displays the instance number (and the custom label, if defined). This was changed because it led to confusion in cases where some instances were deleted, thus leaving gaps in the middle but still showing the max instance as the total instances, which is not the same thing and is confusing.
- Bug fix: For some server configurations, if the Configuration Check page recommends that the administrator replace some outdated non-versioned files, the resulting zip file that they download might be corrupted due to gzip compression issues. (Ticket #30569)
- Bug fix: When a user is viewing the Data Export Files tab on the File Repository page in a project, and they set the "filter by" drop-down to Stata, R, SPSS, or SAS, then in the results displayed in the table below, the Data CSV file would mistakenly not be downloadable. (Ticket #30578)

- Bug fix: When creating a new Data Quality rule that is attempting to find blank values (via [field]=""), if all the fields being referenced in the rule logic are blank/null for a given record, the rule would mistakenly not return any discrepancies for that record. (Ticket #30655)
- Bug fix: When viewing the Configuration Check page in the Control Center, if the "mbstring" PHP extension is not installed on the web server, it would mistakenly throw a fatal PHP error on that page during the "able to send emails" check. (Ticket #30657)
- Bug fix: In longitudinal projects that utilize the survey queue to display surveys across multiple events, the survey queue would mistakenly order the surveys by instrument order rather than by event order. This has been fixed so that it now orders surveys in the queue by event order so that all the surveys in a given event are grouped together. (Ticket #30704)
- Bug fix: When a survey is enabled in the survey queue in a longitudinal project, and then that survey instrument is removed from a given event (via the Designate Instruments page), thus orphaning the survey-event in the survey queue, if no other survey-events are enabled in the survey queue, then the Survey Queue button in the Online Designer might mistakenly still have a green checkmark icon next to it, even though no survey-events are enabled in the queue anymore. Also, in this case the survey-event may mistakenly get displayed in a record's survey queue when the survey is no longer designated for that event.
- Bug fix: When the survey login is used in a longitudinal project, if multiple fields are set to be the login field, in which the same field is used but on different events or arms, then it would mistakenly not save both instances of the field but would only save one. (Ticket #18430)

Version 8.0.3

- Improvement: The datediff() function can now utilize the "now" variable as one of the two date/time parameters (in a similar way as the "today" variable). This is not only true for calc fields, but also for ASI logic, DQ rules, report filters, etc. You may use a time, date, datetime, or datetime_seconds field with the "now" parameter in datediff. Note: If using a date field with "now", it will assume midnight (00:00) for the time component for the date field.
- Improvement: Fields whose values have numbers with a comma as the decimal mark (e.g., "3,14" - European number format) now work in calculated fields. In previous versions, using a number with a comma would result in a blank returned value for the calc field. Note: The calculated value that is returned from a calculation will still have a dot/period as the decimal mark (if it contains a decimal), so in this way, it will convert into all calc field input values into dot/period format when performing the calculation, thus still returning numbers in dot/period format as all previous versions have.
- Change: When piping field values into an @DEFAULT action tag when the piped value is blank/non-existent, it now no longer replaces the [variable] with "_____" but instead replaces it with "" (i.e., nothing), which is viewed as more preferable since the value is being input as a field value. This is only true for piping specifically within the @DEFAULT tag and not for piping in general. (Ticket #23454)

- Bug fix: The @HIDECHOICE action tag was mistakenly not hiding the choices of checkboxes or radio buttons on survey pages where the "enhanced radio buttons and checkboxes" option was enabled. It was only hiding them when the enhanced option was disabled. (Ticket #31001)
- Bug fix: If a project in production status is in draft mode, and the Move Field icon is clicked for a field in the Online Designer in order to move a field, in which the field is the first field on a data collection instrument, then after being moved, the project's instruments might not display correctly in the Online Designer, such as making some fields not even viewable on any instrument in the Online Designer view. This issue would persist while still in draft mode, but would eventually resolve once the drafted changes were approved. Note: This issue would not affect how fields or instruments are displayed on data entry forms or survey pages when entering data.
- Change: Account Managers no longer have the ability to delete administrator accounts (via the Browse Users page). Also, the following text has been added for clarification in the instructions on the "Designating REDCap Administrators and Account Managers" page: "Account managers have powers such as deleting users, which could thus impact projects, so this role is not intended to be delegated to those operating as project managers or ordinary users". (Ticket #26191, #31020)
- Bug fix: If two users are simultaneously on the Online Designer or Data Dictionary page in a project in production status that is in draft mode, in which one user clicks the "Submit changes for review" button immediately after the other user clicks the "Remove all drafted changes" link, it would mistakenly delete all the fields in the project if the submitted changes were approved by an Administrator.
- Bug fix: If a user enters data on a repeating instrument but fails to enter a value for a required field, and then the user clicks the "Ignore and go to next form" button in the "Some fields are required" prompt, in which the next form is *not* a repeating instrument, then it would mistakenly take the user to the next form but on an incorrect instance, which may cause some data to not get stored properly on that second form. When clicking the "Ignore and go to next form" button, it should always take the user to instance #1 of the next form unless the user is currently on a repeating event. (Ticket #29801)
- Bug fix: When uploading a data dictionary containing calc fields, it might mistakenly display an error stating that some equations are not syntactically correct, which is ultimately caused due to line break characters from Mac Excel (as opposed to Windows Excel line breaks).
- Bug fix: When clicking the H icon next to a field to open the Data History Widget on a data entry form, it would mistakenly omit any logged events for "Update record (API) (Auto calculation)". (Ticket #31362)
- Bug fix: When downloading a PDF of a data entry form, on specific occasions it may mistakenly crash and return an error message saying "FPDF error: Interlacing not supported...". (Ticket #31101)
- Bug fix: When downloading the Project XML file (metadata or metadata+data file), it might mistakenly duplicate a checkbox field's choices numerous times in the metadata section of the ODM XML file. (Ticket #29287)
- Bug fix: When assigning a user to a user role on the User Rights page in a project, if the user is using certain versions of Internet Explorer, the "Notify user via email?" checkbox would sometimes mistakenly not get displayed after clicking the "Assign to role" button. (Ticket #30764)

- Change: The field validation for North American phone numbers is now more permissible and allows a greater variety of numbers to be used, such as 8XX and 900 numbers.
- Bug fix: When the survey login is used in a longitudinal project, if three fields are set to be the login field, in which the same field is used but on different events or arms, although it would save the settings correctly, if the survey login popup was later reopened after being saved, the event/arm drop-down for the login field #3 would mistakenly have the event/arm value of login field #1. (Ticket #18430)
- Change: When clicking the "No Access" option for an instrument in Data Entry Rights when adding/editing a user's privileges on the User Rights page, it now automatically deselects the "Edit survey responses" checkbox if the instrument has been enabled as a survey.
- Bug fix: When using other languages as the stock text for a project, a JavaScript error may occur on the Survey Settings page for an instrument when a user attempts to set "Send confirmation email" as "No" after first setting it as "Yes", which may prevent the section from closing or re-opening. (Ticket #30713)

Version 8.1.0

- Change: For PDF exports of data entry forms with data, if a field that is normally removed from exports due to users having export rights of "De-Identified" or "Remove all tagged Identifier fields" is being used in the Custom Record Label or Secondary Unique Field value in the PDF file, that field value will no longer be piped in the PDF file but will instead be redacted (i.e., replaced with the text "[*DATA REMOVED*]"). This change is made to increase security/privacy regarding de-identification of data in data exports.
- Bug fix: When clicking the "Erase all data" button on the Other Functionality page when utilizing surveys in a project, on some occasions it may mistakenly return an error message saying that it could not delete all data, even though it did successfully delete all project data.
- Bug fix: If a user is on a data collection instrument that has been enabled as a survey, in which the record has not yet been created, if the "Save & Mark Survey as Complete" button is clicked on the data entry form, it would save the form but would mistakenly not set the survey as complete. (Ticket #31784)
- Bug fix: If a user is on a data collection instrument that is a repeating instrument and has also been enabled as a survey, if the "Save & Mark Survey as Complete" button is clicked on the data entry form, it would save the form but would mistakenly not set the survey as complete for the correct repeat instance of the instrument.
- Bug fix: When viewing the drafted changes in the Project Modification Module of a production project, if a field has branching logic that is being modified, in which neither the old nor the new branching logic has spaces and both are longer than 90 characters, then the logic text might not display correctly in the table on that page. (Ticket #31765)
- Bug fix: If a project previously had repeating instruments or repeating events enabled, in which some repeating data was collected, after which repeating instruments/events was disabled, both the Record Status Dashboard and the left-hand project menu might mistakenly display an incorrect status icon (the "stack" status icon) for a non-repeating instrument/event.

- Bug fix: When creating a project by importing the REDCap project XML file that was exported from another project, it would mistakenly remove all carriage returns/line breaks in field labels. (Ticket #31908)

- Change: Changed the word "approve" in the production changes email sent to REDCap administrators so that it is now replaced with "review & approve" for clarity.

Version 8.1.1

- Change: When field values get modified via the action tags @TODAY, @NOW, @LATITUDE, @LONGITUDE, and @USERNAME, it now displays the red side bar on the right side of the text field (just like calculated fields do when changed) to denote there was a value that changed. (Ticket #32537)

- Change: The action tags @TODAY and @NOW will no longer hide the Today/Now button, will no longer hide the date-picker icon, and will no longer make the field read-only by default. From this version onward, users will need to additionally use @READONLY in order to accomplish those things. For backward compatibility, the REDCap upgrade process will automatically replace all instances of the @TODAY and @NOW action tags with "@TODAY @READONLY" and "@NOW @READONLY", respectively, to maintain the existing behavior for fields already using @TODAY and @NOW. (Ticket #32537)

- Change: Updated a few PHP files that have old-style PHP class constructors that will not be compatible with upcoming versions of PHP 7

- Bug fix: If a survey instrument contains a date or datetime field, in which a respondent completed the survey and left the date/datetime field blank, and then afterward a user added the @TODAY or @NOW action tag to the field, then if a user opened the response on the data entry form, it would mistakenly insert the current date value or current timestamp into the blank field even though the form was still in read-only mode (i.e., the user had not yet clicked the "Edit Response" button near the top of the form). (Ticket #32537)

- Bug fix: If using the @MAXCHECKED action tag on a checkbox on a survey that has the "enhanced radio buttons and checkboxes" option enabled, it would mistakenly not work correctly, in which it would invisibly prevent the respondent from selecting more checkboxes than the action tag allows, but it would *appear* to allow more selections to be checked than allowed. So it sort of works but does not note to the respondent that it is working as advertised.

- Bug fix: When using repeating instruments in a multi-arm longitudinal project, in which a record exists in multiple arms at the same time, it would mistakenly display the tables of repeating instrument data from other arms at the bottom of the Record Home Page for a given record. It should only be displaying tables for repeating instances from the current arm, not from other arms. (Ticket #32284)

- Bug fix: If the path to the hook functions file contains a dash/hyphen, it would mistakenly cause REDCap Hooks not to be called. (Ticket #32336)

- Bug fix: If viewing the drafted changes page for a production project, in which a multiple choice field's choices do not have a space immediately after the comma that follows the coded value for a given

choice (e.g., "1,one", as opposed to "1, one"), then if a user clicks the Compare button in the drafted changes table on that page, it would mistakenly not display any of the choices for the field in the resulting dialog popup that is opened.

- Bug fix: If using the Data Search feature on the "Add/Edit Records" page in a project, in which there exists a lot of matches for the search term entered by the user (e.g., if the project has lots of records) *and* the project has either Custom Record Labels or Secondary Unique Field enabled, then REDCap would mistakenly cause way too many queries to be made to the database, which could cause a major load on the database server. (Ticket #31544)

- Bug fix: If exporting a Project XML file for a project that contains repeating instruments, in which a repeating instrument existed beforehand but has since been deleted, that instrument would mistakenly still persist in the <redcap:RepeatingInstrumentsAndEvents> section of the Project XML file. However, this would not affect anything if using the Project XML file to create a new REDCap project (i.e., the instrument would still remain deleted).

- Bug fix: If an administrator is on the "Security & Authentication" page in the Control Center, and the cursor is placed in either of the two text boxes for entering IP address ranges for Two Factor Authentication, if the text box is left blank for those, it would mistakenly display a prompt saying that the IP ranges entered are not correct, which would keep popping up and could only be resolved by refreshing the page.

- Bug fix: Text displayed on a few certain buttons and icons would mistakenly get truncated for non-English languages, especially French. (Ticket #32668)

- Bug fix: When using the @NONEOFTHEABOVE action tag on a checkbox that is inside a matrix, when it displays the confirmation dialog asking the user to clear out the other checkbox selections, it would mistakenly not display that choice's label correctly in the dialog. (Ticket #32748)

- Bug fix: For certain server configurations or certain versions of PHP, any branching logic or calculations that are not syntactically correct might mistakenly produce fatal PHP errors. (Ticket #32486)

Version 8.2.0

- Improvement: Major improvements to the "Browse Users" page in the Control Center – Borrowing from the functionality of the new Sponsor Dashboard, administrators may now perform the following actions on many users at once: 1) resetting passwords (Table-based authentication only), 2) Setting/expiring a user's account expiration, 3) suspending users, and 4) unsuspending users.

- New API method: Export Repeating Instruments and Events - This method allows you to export a list of the repeated instruments and repeating events for a project. This includes their unique instrument name as seen in the second column of the Data Dictionary, as well as each repeating instrument's corresponding custom repeating instrument label. For longitudinal projects, the unique event name is also returned for each repeating instrument. Additionally, repeating events are returned as separate items, in which the instrument name will be blank/null to indicate that it is a repeating event (rather than a repeating instrument).

- Improvement: New "compact" option for PDFs of forms/surveys in which a compact-formatted PDF is produced that excludes fields that have no data saved and excludes unselected multiple choice options, thus producing a smaller PDF file. (Note: Section headers and descriptive fields will still be included.) On all pages that offer a PDF download option, there is now an extra "compact" option. The REDCap::getPDF() developer method and the "Export PDF file" API method both have the compact option added as a new parameter that can be passed to the method.
- Improvement: Minor aesthetic improvements in the display of PDFs of forms/surveys, such as divider lines between questions and gray background color for section headers.
- Change/improvement: When adding/editing Automated Survey Invitations, the "Send after lapse of time" value for "days" may now be 4 digits in length (specifically up to 7300 days = 20 years), whereas previous versions limited the days unit to 3 digits. This change allows for a much longer wait time before sending the scheduled invitations. (Ticket #3082)
- Bug fix: If a survey is using "Save & Return Later" with the option "Allow respondents to return without needing a return code" enabled, then if a participant takes a survey using a public survey link and clicks the "Save & Return Later" button at the bottom of the survey, REDCap would mistakenly email them the public survey link rather than their private survey link which would normally allow them to return to their survey response to begin where they left off. The public survey link that gets emailed to them would mistakenly not allow them to continue their survey response.
- Bug fix: If text data that contains line breaks/carriage returns is piped into another field value via piping inside an @DEFAULT action tag, the piped text would mistakenly contain HTML break tags (e.g.,
) rather than proper line breaks/carriage returns.
- Bug fix: If a project's "Character encoding for exported files" option (on the Edit A Project' Settings page) is set to "Chinese (UTF-8)", then the webpage would crash with a fatal PHP error whenever a user attempted to download a PDF of one or more data entry forms. (Ticket #32892)
- Bug fix: When piping a radio button field into another field's label on the same instrument, if the piped field is modified on that page, thus instantly piping the new selected value's choice label, the choice label being piped would mistakenly be non-bolded text, even though the rest of the field label remains as bolded text.
- Bug fix: For a project that utilizes the randomization module, if any of the strata fields being used in the randomization have field labels or field notes into which data is being piped, then the randomization dialog popup that displays these strata fields would mistakenly not have the data piped into their labels/notes. (Ticket #33282)
- Bug fix: When a project contains repeating instruments, and a report is created that contains fields from a repeating instrument, the "Stats & Charts" view of that report might mistakenly display an incorrect number of missing values for fields on a repeating instrument. (Ticket #32078)
- Bug fix: On a data entry form or survey that utilizes a calc field or certain action tags anywhere on the page, a random blank text field might mistakenly have a red sidebar appear on the input field for no reason.

- Bug fix: If an External Module is utilizing the API endpoint URL, and a new REDCap version has been placed on the web server but the upgrade has not been completed yet, then the API endpoint would mistakenly redirect to the wrong place. (Ticket #33520)
- Bug fix: For surveys that have no questions and have been set to "One section per page (multiple pages)" in their survey settings, it would mistakenly display the Form Status field on the survey page. (Ticket #33467)
- Bug fix: In a production project in draft mode when adding a matrix of fields in the Online Designer and assigning it a matrix group name that already exists, it mistakenly allows the user to add that matrix group name, but then subsequently displays an error message when the whole matrix setup is saved. (Ticket #33661)
- Bug fix: When using the Data Search feature on the "Add/Edit Records" page, the "Searching..." text/spinner would not accurately reflect the search request time but would mistakenly disappear on some long searches, thus making it appear that the search has completed when it actually has not. (Ticket #7805)
- The Help & FAQ page content was updated
- Bug fix: When using the @TODAY or @NOW action tag for a field on a survey instrument, although the action tags will correctly insert the date/timestamp when the instrument is opened as a survey page, it would mistakenly not do this on the data entry form. Note: This only occurs on an instrument that has been enabled as a survey and is being opened as a data entry form when the field has no value. (Ticket #33609)
- Bug fix: The "simultaneous users" check that prevents two different users from viewing the same record/instrument/event in the same project would not successfully stop a user from viewing the data entry form if the user already on the form performs one of the following actions: 1) upload a file onto a File Upload field, 2) download a file, 3) delete a file, or enter a value into the Secondary Unique Field (if enabled).
- Bug fix: In certain rare cases, if a respondent clicks the download link for a File Upload field on a survey page, it might mistakenly display an error page rather than downloading the file.

Version 8.2.1

- Improvement: A new system-level setting was added on the Control Center's "User Settings" page: "Allow normal users to modify the 'Repeatable Instruments & Events' settings for projects while in production status". This setting is enabled by default, but if disabled by an administrator, normal users will not be able to open or save the 'Repeatable Instruments & Events' popup dialog on the Project Setup page while the project is in production, in which only administrators will be able to do so.
- Improvement/change: The Font Awesome 5 iconic font and CSS toolkit is now included as part of REDCap.

- Improvement/change: The project Logging page now provides useful contextual information for the ASI logged event "Automatically schedule survey invitation", in which it will display the record name, survey title, and event name (if longitudinal).
- Improvement/change: The project Logging page now logs when a survey invitation that was scheduled via ASI gets deleted due to the ASI option "Ensure logic is still true before sending invitation?", in which the logged event will display useful contextual information, such as the record name, survey title, and event name (if longitudinal).
- Improvement/change: The project Logging page now logs when a survey invitation is deleted or when its send-time is modified on the Survey Invitation Log, in which the logged event will display useful contextual information, such as the record name, survey title, and event name (if longitudinal).
- Performance improvement: For projects containing a large amount of records (i.e., thousands or tens of thousands), some pages in the project might become very slow, and if a user repeatedly attempts to open a page that is initially slow to open, often due to slow database queries being executed, then those queries can get backlogged on the database server and reduce performance over time. A new mechanism has been implemented that will improve server performance in these cases by actively killing off any abandoned MySQL processes that are still running on the server.
- Major bug fix: When downloading the CSV export of a survey's Participant List, a race condition might occur if multiple users are downloading the list (or if multiple requests are coming from the same user) near-simultaneously, in which it could possibly return a Participant List export file that contains Survey Access Codes that do not really exist and are therefore not valid access codes. (Ticket #34862)
- Bug fix: The dashboard page in the Randomization module might mistakenly not get rendered correctly and thus may not be viewable if malformed HTML exists in the field label or choice label of the randomization field or a criteria field.
- Bug fix: The "Set up Survey Queue" popup in the Online Designer would mistakenly note that the first survey instrument is not displayed in the popup and therefore cannot be used in the Survey Queue. However, this is no longer true (but was true in earlier versions), so that incorrect text has now been removed.
- Change: The icons used to represent projects with "archived" status now use the Font Awesome "archive" icon instead.
- Bug fix/change: When an administrator is processing a request submitted via the Sponsor Dashboard in which the things being requested are no longer applicable (e.g., if a user was requested to be suspended, but the user has been suspended through other means before the request was processed), it would display a confusing message to the administrator. Now in these situations it lets the administrator know that there is nothing to do and that they should contact to the requester to let them know that the request does not need to be completed.
- Improvement: A new "hide suspended users" option was added to the Sponsor Dashboard to allow sponsors to hide suspended users when viewing that page.
- Bug fix: For a survey that does not have "Save and Return Later" enabled, if a respondent returns to an incomplete survey response using a unique survey link, it would mistakenly display the "Start Over"

button to allow them to erase their answers even if the response had been locked by a user on the data entry form. Respondents should not be able to modify data or erase data if the form has been locked. This has been changed so that if the response is locked, it will not display the "Start Over" button and will inform the respondent that they cannot do anything until a survey administrator has unlocked their response. (Ticket #34676)

- Bug fix: Fields having any of the "Number (comma as decimal)" validations would mistakenly not have their scatter chart or descriptive stats displayed on the "Stats & Charts" page for a report.

- Bug fix: When copying an instrument via the "Copy" action in the Online Designer, if the instrument contains a "calc" field in which its equation has been left blank, it would display an error stating that the instrument could not be copied.

Version 8.2.2

- Improvement: The "Browse Projects" page has a new option to perform a keyword search on the project title to find projects more quickly. This option can be used with or without the username search at the same time on that page. When searching by project title, it will order the project list based on best match with the keywords entered.

- Improvement: Added new "Record ID" column in the Survey Invitation Log table to allow users to find specific invitations more efficiently. Note: If the record name should not be displayed in order to preserve the anonymity of a response (e.g., participant identifier is not used, designated email field is not used), it will instead display an icon indicating that the record name cannot be displayed.

- Improvement: Added new filter on the Survey Invitation Log table to allow users to filter the invitations by record ID.

- Improvement/change: Added new "Record ID" column in the Participant List table. In previous versions, the record ID was appended to the email address in the "Email" column. Having its own column will allow users to find specific participants more efficiently.

- Improvement: When opening the "Add/Edit Branching Logic" popup in the Online Designer, it could sometimes be very slow to open if the project contains many fields, especially many multiple choice fields. The popup could even be slow when the selected field does not even have branching logic yet. To improve this, it now defaults to selecting the "Advanced" option first when the popup opens and only attempts to load the "Drag-N-Drop" draggable field choices when that option has been selected by a user. While this won't completely alleviate the issue of the "Drag-N-Drop" option being slow when there are many fields, this will make it much more palatable in a majority of situations when branching logic is being added/edited in the Online Designer. (Ticket #1905)

- Improvement: If a field has branching logic, the Online Designer now displays the logic (up to the first 65 characters) on the field so that the user can view it easily without having to open the Add/Edit Branching Logic popup.

- Change/improvement: The Control Center login option "Disable autocomplete feature in user's browser for username/password fields on REDCap login page?" has been improved to work more

dependably in more browsers. Also, other pages with "password" type fields, such as the File Upload Settings page in the Control Center, have also been improved to prevent accidentally injecting a user's username and password in places where not appropriate or not correct. (Ticket #35339)

- Change/improvement: If an administrator is moving a project in production back to development status and the project is in Draft Mode, it will now automatically create a Data Dictionary Snapshot of the drafted changes and store the snapshot on the Project Revision History page.

- Major bug fix: When using the "Save & Return Later" survey feature, and a participant has partially or fully completed a survey, in certain cases if they use the return code and enter it while using the public survey link (as opposed to a private/unique survey link), it might mistakenly create a new record instead of modifying the existing record.

- Bug fix: When viewing the Participant List of a survey that is a repeating instrument or is on a repeating event, REDCap would mistakenly add extra placeholder rows in the Participant List if the instrument is utilized on multiple events. These extra ghost/placeholder rows would point to non-existing instances of an instrument. Note: If these placeholder rows have already been created in the Participant List, then unfortunately they will not be able to be removed. (Ticket #34741)

- Bug fix: When a non-CSV file is being uploaded into a place where only CSV files are permitted (e.g. Data Import Tool, Data Dictionary), it would mistakenly provide a link to a Microsoft webpage that no longer exists. The link URL has now been replaced with a working link.

- Bug fix: When performing a data import in a project with repeating instruments or repeating events, in which the redcap_repeat_instance field is included in the import file but is mistakenly given a non-numerical value, then the data values on that row might mistakenly be saved in the database incorrectly. (Ticket #35143)

- Bug fix: In the Scheduling module when using a Start Date with the year 2038 or higher, it would mistakenly return dates in the year 1969 for the projected schedule that is generated. (Ticket #35178)

- Bug fix: When a sponsor sends a request via the Sponsor Dashboard, after a REDCap administrator approves the request, the confirmation email being sent back to the sponsor would mistakenly mention the approver's username in the email body rather than the requester's username.

- Change/improvement: When a sponsor sends a request via the Sponsor Dashboard, after a REDCap administrator approves the request, the confirmation email being sent back to the sponsor now lists the usernames of all the users to which the sponsor request was applied.

- Bug fix: Fixed compatibility issues when using REDCap with PHP 7.2. This includes a fatal PHP error on the REDCap install page, and a fatal PHP error when downloading a PDF of an instrument. (Ticket #35240)

- Bug fix: On the Data Dictionary upload page, it might mistakenly display some uninterpreted HTML tags and some misformatted text for warnings and errors on the page after uploading a Data Dictionary. (Ticket #35499)

- Bug fix: If running PHP 5.3 on the REDCap server, in certain situations the Configuration Check page might mistakenly fail to mention that PHP 5.4 or higher is required in order to use External Modules.

- Bug fix: When using the "Save & Return Later" survey feature with the option enabled to "Allow respondents to return and modify completed responses", if a respondent begins a public survey and clicks "Save & Return Later", and then returns to the partially completed survey using a private survey link (not using the public survey link as before) and completes the survey, and then returns to the completed survey again using the public survey link (not the private survey link), using the return code they obtained the first time they visited the survey (not the return code they obtained later that is tied to the private link), and then they click "Save & Return Later", it will mistakenly set the survey status back to incomplete even though the survey has been completed. (Ticket #35210)
- Bug fix: When downloading a "compact" PDF of a survey response for a survey that has question auto-numbering enabled, the question numbers displayed in the compact PDF will not be correct when compared to the real order in which the questions appeared on the survey page.
- Bug fix: When downloading a PDF of an instrument while on a data entry form, in which data has been modified on the form, after clicking a "download PDF" option it would mistakenly display a confirmation prompt letting the user know that they will be abandoning the page, which is not true. So the prompt is unnecessary and confusing.
- Bug fix: When downloading a file attachment for a Descriptive field on a survey, in which data has been modified on the survey page, it would mistakenly display a confirmation prompt letting the participant know that they will be abandoning the page, which is not true. So the prompt is unnecessary and confusing. (Ticket #35436)
- Change: If the secondary unique field is enabled and contains HTML tags in its field label, those tags will now be stripped out when displaying the label and value of the secondary unique field throughout a project, such as on a report, top of data entry page, and the left-hand project menu when a record is selected. This has been changed because HTML tags in the field label could distort the user interface in unpleasant ways.
- Bug fix: If a report is being sorted by the record ID field in descending order or the record ID field is sorted as asc/desc with one or two other sort fields, and the project has record auto-numbering enabled but the record ID field does not have integer/number validation, then the report would fail to order the results correctly.
- Bug fix: When viewing the "Stats & Charts" page for a report, slider fields and calc fields would mistakenly not have a scatter plot displayed for them.
- Bug fix: The field label of the Secondary Unique Field would mistakenly get displayed even if the field has no value. It should not display the label unless there is a value. (Ticket #35637)
- Bug fix: When importing data into a project in XML format via the API or via the plugin method REDCap::saveData(), in certain cases it would not gracefully handle an error in the XML but would instead mistakenly cause a PHP fatal error. (Ticket #35368)
- Bug fix: If a survey is using "Save & Return Later" with the option "Allow respondents to return without needing a return code" enabled, then if a participant clicks the "Save & Return Later" button at the bottom of the survey, in the email that REDCap sends to the participant with the survey link needed to

continue the survey, the email text would mistakenly mention that a return code would be needed, which is not correct. (Ticket #33365)

- Change/improvement: When performing an API export in JSON format for the API methods Export Users, Export Project Info, Export Survey Participants, and Export Events, while the values in the API response were all correct, some API scripts were having trouble with the fact that some integers were returned in string format (surrounded in quotes) rather than as literal integers in the JSON response. Now they should all be returned as literal integers.

Version 8.2.3

- Improvement: On the "Browse Users" page, the "View User List By Criteria" tab has a new display option "Has never logged in" to help administrators quickly find users (typically when using Table-based authentication) that have a REDCap account but have never actually logged in to REDCap.

- Improvement: The REDCap::getData method for plugins/modules now has an alternative way of passing parameters to the method. Rather than providing the method's parameters individually, they instead may be passed to the method in an associative array, in which each key in the array exactly matches the parameter names listed above (must match case). Note: Not all the parameters have to be included in the array, but only the ones one wishes to set explicitly. Example: `$params = array('return_format'=>'json', 'filterLogic'=>'[age] >= 18', 'fields'=>array('dob','record_id')); $data = REDCap::getData($params);`

- Major bug fix: If a longitudinal project has more than one arm and also has the Secondary Unique Field enabled, if a record exists in multiple arms, then whenever a user saves a value on a form or survey for the Secondary Unique Field, it would mistakenly set that value for all events in all arms for that record when instead it should only set that value for all events in the current arm.

- Bug fix: When viewing a record on a data entry form that exists on a repeating event and then clicking a PDF download option to download that instrument with saved data, the resulting PDF would mistakenly contain all the repeated instances of the instrument for that record instead of just the current instance being viewed. This issue does not occur for repeating instruments but only for instruments on a repeating event.

- Bug fix: For a matrix of fields displayed in the Online Designer, the matrix headers were not aligning correctly with the radio button/checkbox for the fields. This only occurred when viewing a matrix in the Online Designer.

- Bug fix: When using the date-picker or datetime-picker widget to select a date/time on a form, survey, or other page in REDCap, the field validation alert might get called prematurely, which can cause it to be displayed to the user unnecessarily or may even cause the user to get stuck (because the widget keeps displaying whenever it is closed) and have to reload the whole page. (Ticket #35735)

- Bug fix: When using the Record Status Dashboard in a project with Data Access Groups, if the paging drop-down has a specific page selected and then the user selects a Data Access Group from the DAG drop-down, it could mistakenly try to display a "page" of records that does not exist for the new

resulting data set and thus would display "no records", which could be confusing. In this case, it will now revert back to page 1 if the selected page no longer exists for the new DAG selection. (Ticket #36053)

- Bug fix: When using the Randomization module in a project and attempting to randomize a record on a data entry form in which the @NOW or @TODAY action tag is used *and* piping is also being performed on the same form, then the "Randomize" button would fail to appear if the user was specifically using iOS (Mobile Safari web browser). (Ticket #35998)

- Bug fix: On the Sponsor Dashboard and Browser Users pages, it would mistakenly allow a user to utilize the actions "Reset password", "Set account expiration", and "Extend account expiration" on users that have been suspended. It should not allow those actions on suspended users.

Version 8.3.0

- Improvement: The Survey Invitation Log now contains an extra column on the right-hand side to allow users to delete many scheduled invitations at once (rather than having to delete them one at a time).

- Improvement: The Configuration Check page in the Control Center now checks to see if the REDCap server can communicate with all the various third party websites/services that are used within REDCap. These include Twilio, PROMIS, BioPorai, Bit.ly, and IS.GD.

- Bug fix: When deleting an individual survey invitation or modifying an invitation's send time on the Survey Invitation Log, the logging would mistakenly state that "SYSTEM" performed the action rather than the user's username.

- Bug fix: On the Field Comment Log page in a project, if a user is using the Internet Explorer web browser, clicking the "Apply filters" button would mistakenly cause it to mistakenly search for the keywords "Keyword" and "search" even when the "Keyword search" text box has been left blank. This would often cause it to return no results, which is confusing. (Ticket #36266)

- Bug fix: Projects that use repeating events or repeating instruments will now *always* output the "redcap_repeat_instrument" and "redcap_repeat_instance" fields in a report or data export, as well as the output of REDCap::getData, regardless of whether the report/export contains any repeating data or not. In previous versions, it would mistakenly only output those fields if any data in the report/export was repeating. This means that the number of columns would vary unpredictably based on the filters applied to the report/export (or based on the parameters passed to REDCap::getData), which is confusing and inconsistent with how reports/exports typically behave. (Ticket #36263)

- Bug fix: When a record is deleted in a project (either via the user interface or via API), the logging page would mistakenly display the event name for the logged event, which is confusing because the record as a whole was deleted, not just for a specific event. It now no longer displays the event name for the logged event, and if the project contains multiple arms, it will instead display the number and name of the arm from which the record was deleted. (Ticket #36358)

- Bug fix: When viewing the data entry form of a repeating instrument, in which the "Current instance" drop-down list is displayed at the top of the page, if a user clicks the "+" button inside the drop-down rather than clicking the "Add new" text, it would mistakenly take the user to an incorrect page.

- Bug fix: When viewing/exporting a report or using the REDCap::getData() method in a longitudinal project with multiple arms, in which the user is exporting data from an arm that currently has no records in it (i.e., the data set being returned should be empty because there is no data from that arm to return), then it would mistakenly output a list of all records from other arms but with blank/default values. (Ticket #36470)

- Bug fix: In a longitudinal project with multiple arms, in which a record exists on more than one arm, if a user clicks the "Lock all instruments across all events" on the Record Home page on a certain arm, it would mistakenly lock all the instruments/events on other arms in addition to the current arm. It should only lock the instruments on the current arm. Note: The unlocking process does not appear to be affected by this issue.

- Bug fix: On certain occasions, the Scheduling module might mistakenly crash due to a fatal PHP error when attempting to generate a schedule for a record. This appears to only occur for PHP 5.3. (Ticket #36592)

Version 8.3.1

- Improvement: Sponsor Dashboard requests that are listed on the To-Do List page will now have the selected users' usernames in the To-Do List item's comment so that the administrator may reference this (if needed) while processing the request.

- Change: When using the designated email invitation field (enabled on the Project Setup page), if the field is located on an instrument that gets used on multiple longitudinal events or if it is located on a repeating instrument/event, all occurrences of the field will now be forced to have the same value. This means that if one value is entered for the field, that value will always be the value seen in other events or other repeating instances of the instrument. And if the value is changed on any event or repeated instance, then that value will be updated on all events or repeating instruments/events where the field has a value. This will keep the field's value in sync in all locations since the underlying assumption of the designated email invitation field is that there is really only one single value, which is the email address of the survey participant.

- Bug fix: On the Project Templates page in the Control Center, it would mistakenly display deleted projects in the project drop-down list when choosing a project to enable as a project template. (Ticket #36672)

- Bug fix: When the "Save & Return Later" setting is enabled on a survey and the "Allow respondents to return without needing a return code" option is checked, if a participant's email address is known when they click the "Save & Return Later" button on the survey page, it would mistakenly display some text on the page that implied that they would need a Return Code to return to the survey, which is incorrect. (Ticket #36729)

- Bug fix: In a longitudinal project, when a user clicks the "Delete data for THIS FORM only" button on a data entry form, if data exists on other events for the current record AND the form being deleted is the only form containing data on the current event, then that event would mistakenly still show up in

reports and data exports even though it no longer contains any data and shows gray status icons for all the instruments in the event. (Ticket #35814)

- Bug fix: In a longitudinal project, the Scheduling module might mistakenly crash due to a fatal PHP error when attempting to generate a schedule for a record. This was often due to using either a negative Day Offset value or negative Offset Range value for certain Start Date values. Bug emerged in REDCap 8.2.2. (Ticket #36592)

- Bug fix: REDCap Messenger might throw a JavaScript error after being opened because certain web browsers are beginning to deprecate synchronous AJAX requests in JavaScript. (Ticket #36970)

- Change: When exporting data to SPSS, the resulting SPSS syntax file now defines Text fields as A30000 rather than A500 to allow for Text fields with text longer than 500 characters.

- Bug fix: When using the @NOW action tag for a date field (rather than a datetime field), it mistakenly inserts the full timestamp into the date field, which results in a field validation error. It now instead inserts only today's date as a value into the field, as if @TODAY were used. (Ticket #36969)

- Bug fix: If a slider field on a survey or data entry form is set to display its numerical value, if "100" is selected for the slider, the text field would partially cut off the value being displayed. (Ticket #37048)

- Bug fix: When using "<>", "<", or "<=" in the choice labels for drop-down, radio, or checkbox fields on an instrument, they would not display correctly on the page but instead might omit those operators or instead display nothing as the choice label. (Ticket #37007)

Version 8.3.2

- Improvement: The datepicker widgets and timepicker widgets that are displayed on data entry forms and survey pages now have their language abstracted so that it will display the months, days of the week, and buttons in the language set for the project.

- Bug fix: When using the Data Search feature on the "Add/Edit Records" page, clicking the keyboard's down arrow button mistakenly no longer selects an option returned from the search. (Ticket #37144)

- Bug fix: In a longitudinal project, when a user clicks the "Delete data for THIS FORM only" button on a data entry form, if data exists on other events for the current record AND the form being deleted is the only form containing data on the current event, then that event would mistakenly still show up in reports and data exports even though it no longer contains any data and shows gray status icons for all the instruments in the event. In the previous version, this bug was fixed for most scenarios (traditional longitudinal and repeating instruments) except not for repeating events. This now fixes the issue for repeating events. (Ticket #35814, #37290)

- Bug fix: If a user requests that their project be moved to production by an administrator, in which the administrator does not use the To-Do List nor the link in the request email but instead just goes to the project directly to move it to production, then the original request would mistakenly not get removed from the To-Do List. (Ticket #37159)

- Bug fix: When searching by project title on the Browse Projects page when a username has not been entered in the user search box, it would mistakenly assume that a username named "Search" was entered. This only occurs when using Internet Explorer. This would also cause the user button at the top right of the page to mistakenly say "User does not exist". (Ticket #37497)
- Bug fix: On very rare occasions, creating a new user role in a project might mistakenly result in displaying an error to the user that states that an email could not be sent to the user, which does not make sense because there is no user in this context. (Ticket #37465)
- Change: On the Browse Users page, it will no longer display the "Verified" or "Not yet verified" flag next to a user's email address if the user is a Table-based user. This is because the email verification is only ever utilized for non-Table-based authentication. (Ticket #37474)

Version 8.4.0

- Improvement: Custom Record Labels now use proper piping syntax and can also utilize Smart Variables.
 - Because Custom Record Labels existed long before the concept of piping was created in REDCap, they did not adhere to typical piping concepts – e.g., they could not use prepended event names; they would display the raw value of a multiple choice field whereas piping would instead display the label of a multiple choice field. There also used to be certain limitations Custom Record Labels, in which they could only use data from fields on the very first event (of the current arm). Now that Custom Record Labels can be used like regular piping, they can target fields on any event in a project, and they can also utilize Smart Variables.
 - Note: Any longitudinal projects existing before the upgrade that currently use Custom Record Labels will automatically have all fields in the Custom Record Label prepended with the [first-event-name] Smart Variable in order to maintain the existing behavior from previous versions that could only pull data from the first event of the current arm. So prepending [first-event-name] allows existing longitudinal projects to maintain the way they worked prior to the upgrade to this REDCap version.
- Improvement/change: New method for composing survey invitation text using Smart Variables for survey link
 - When composing a survey invitation, the standard text and survey link are no longer automatically appended to the survey invitation text at the time the email is sent. Instead, users must now specify all the entirety of the text of the email (including the stock text and survey link that used to be appended automatically, if they wish) and therefore must supply [survey-url] and/or [survey-link] in the text if they wish to provide the participant with a link to the survey.
 - If the user forgets to enter the survey URL Smart Variable in the text, REDCap will automatically suggest to them that they should.
 - If using the Twilio telephony module for sending invitations, the standard instructional text will still be appended in the SMS message as in previous versions EXCEPT for the "Email invitation" and "SMS

invitation (contains survey link)” invitation types, which require [survey-url] and/or [survey-link] in the SMS text in order for the participant to receive a survey link.

- Note: All survey invitations that were scheduled prior to this upgrade will still have the standard text and survey link appended to their survey text. Additionally, during the upgrade to this version, all saved configurations for Automated Survey Invitations (ASIs) will have the standard text and survey link automatically appended to the saved ASI email text, thus allowing the ASI behavior to remain exactly the same after the upgrade and allowing it to be backward compatible.

- New feature: New syntax for referencing fields on repeating instances in piping, logic, and calculations

- Fields that exist on a repeating instrument or on a repeating event can be referenced using a new syntax (note: repeating events and instruments are used the exact same way). This is done by appending the “repeat instance” number to the field inside square brackets – e.g., [weight][2], which points to repeating instance #2 for the field “weight”.

- Please note the distinction that unique event names should be *prepended* to variables whereas repeating instance numbers must be *appended* to them. For example, if the field “weight” exists on a form in the event “Visit Data” in a longitudinal project, you might reference instance #2 for that field on that specific event with the following: [visit_data_arm_1][weight][2].

- Smart Variables can be used in place of the repeating instance number, in which there are 5 instance-related Smart Variables: [previous-instance], [next-instance], [current-instance], [first-instance], and [last-instance]. For example, if you wish to use @DEFAULT action tage to carry over data from the previous instance of a repeating instrument, it might be set up as follows: @DEFAULT="[weight][previous-instance]".

- Improvement: Piping can now be used for checkbox fields

- Piping from Checkbox fields is slightly different than with other field types because checkboxes allow for multiple saved values. There are options to display a list of checked choices, unchecked choices, or a specific choice.

- [my_checkbox:checked] - Appending ':checked' will display a comma-delimited list of choice labels that have been checked - e.g., 'Sunday, Tuesday, Thursday'. Note: If neither ':checked' nor ':unchecked' is appended to the variable, then it will default to ':checked'.

- [my_checkbox:unchecked] - Appending ':unchecked' will display a comma-delimited list of choice labels that have NOT been checked - e.g., 'Monday, Wednesday, Friday, Saturday'.

- [my_checkbox(code)] - If a coded value of the checkbox is included inside parentheses after the variable name - e.g., [my_checkbox:(2)] - then it will output the word 'Checked' or 'Unchecked' regarding whether or not that specific choice has been checked off.

- Please note that while the checkbox piping options listed above will return the text labels, you may also append ':value' to the variable to return the raw value instead of the label. For example, [my_checkbox:checked:value] and [my_checkbox:unchecked:value] might return '1, 3, 5' and '2, 4, 6, 7', respectively, and [my_checkbox(2):value] will return 1 or 0 if checked or not checked, respectively.

- Improvement: Multiple choice fields can now have their raw value (as opposed to their choice label) piped by appending “:value” to the variable name – e.g., [my_radio_field:value]. Note: This can also be used for SQL Fields to display the raw value of the SQL Field drop-down.
- Improvement: Multiple choice fields can now have their raw value (as opposed to their choice label) piped inside an @DEFAULT action tag by appending “:value” to the variable name – e.g., @DEFAULT=”[my_radio_field:value]”.
- Bug fix: The "expand" link would mistakenly not work for the "Custom text to display at the top of the Help & FAQ page" textbox field on the General Configuration page in the Control Center.
- Bug fix: When deleting a repeating event instance on the Record Home page, it might mistakenly delete all files uploaded to any File Upload fields on other repeating instances of that event. (Ticket #37988)
- Bug fix: When viewing the Survey Invitation Log in a project using the Twilio telephony services for surveys, it would mistakenly display the "Record" and "Participant Phone" headers for the wrong columns in the table.
- Bug fix: When using the REDCap Mobile App for a project that contains Descriptive fields that have inline images, if the file storage setting has been set to "WebDAV" on the File Upload Settings page in the Control Center, the images would mistakenly not get synced to the mobile app correctly.
- Bug fix: The action tags @NONEOFTHEABOVE and @MAXCHECKED would not work well together and would cause @NONEOFTHEABOVE to malfunction when using both tags on a single checkbox field. (Ticket #38119)
- Bug fix: When using a custom Data Quality rule to find a field with a blank value, in which the field exists on a repeating instrument, it would not always return the correct results. (Ticket #37067)
- Bug fix: The documentation for action tags @TODAY and @NOW mistakenly state that a field using either action tag would be disabled and not editable, which is no longer true but used to be true in older versions. (Ticket #32537)
- Bug fix: When uploading an instrument zip file in the Online Designer, it would mistakenly truncate the form name to 50 characters in length when instead it should be truncating it to 64 characters if the form name was longer than that.
- Bug fix: When using the PDF Auto-Archiver for a survey, if the project has all its data erased via the "Erase all data" button on the Other Functionality page or if the project is moved to production while opting to delete all records, then it mistakenly would not delete all the archived PDF files in the File Repository. (Ticket #38660)
- Bug fix: When clicking the "exclude" or "remove exclusion" link in the discrepancy results in the Data Quality module when using a non-English language for the text of that project, it would mistakenly only show the text in English right after clicking those links. It should instead display them in the project language. (Ticket #38408)
- Bug fix: On very rare occasions, creating a new user role in a project might mistakenly result in displaying an error to the user that states that an email could not be sent to the user, which does not

make sense because there is no user in this context. This was supposedly fixed in the previous version but was not. (Ticket #37465)

- Bug fix: When deleting a form's data using the "Delete data for THIS FORM only" button at the bottom of a data entry page, if it is a repeating instrument, it would mistakenly fail to mention that this action would only delete the current repeating instance of the form, not all repeating instances of that form.

- Change/improvement: Added stats for e-Consent Framework usage on the Control Center's System Statistics page.

- Change/improvement: When using the Copy Project button on the Other Functionality page, it now copies the Record Locking Customization settings for the project.

- Change/improvement: When using the Copy Project button on the Other Functionality page, it now displays an option to the user to copy all custom record status dashboards in the project.

- Bug fix: When an unsuccessful login attempt occurs in REDCap, it now only logs the username value entered if the value is a valid REDCap user's username. If not, it instead logs it as "[not_valid_username]" in the redcap_log_view database table. This fixes a potential security hole in which some users might mistakenly enter their password in the username login field, in which it would log their password in plain text in the redcap_log_view database table and thus could be viewable to anyone with direct access to the backend database.

- Bug fix: When adding a new user in REDCap (in several places throughout the application), if user attempts to create a username containing an ampersand, it would not allow it even though the error message says that ampersands are allowed. This error message text is incorrect because ampersands are not allowed in REDCap usernames. (Ticket #39267)

- Bug fix: When running Data Quality rule H, it might mistakenly not return some discrepancies in very specific cases. This would most often occur when the calculated value has a decimal while the saved value does not contain a decimal (and vice versa). (Ticket #38488)

- Bug fix: When using a Live Filter on the "Stats & Charts" page of a report, in which no results should be displayed for the selected Live Filter, it would mistakenly display all records in the charts and stats tables on the page. (Ticket #39349)

- Bug fix: When using conditional logic, report filters, etc., in which certain text is used inside double quotes or single quotes (i.e., text that is used internally by REDCap as special processing tokens), it would sometimes mistakenly return no results instead of the desired results. (Ticket #32295, #39418)

- Change: The BioPortal biomedical ontology web service is now called through a secure method (SSL/HTTPS) by REDCap. This will not affect how the ontology field search works, but provides more security by encrypting all the requests being sent from REDCap to the data.bioontology.org website. (Ticket #39613)

- Bug fix: Inside the red box that appears at the top of the data entry form when viewing a survey response, it would mistakenly report that other users contributed to the survey response, even though those users may have entered data on another instrument for that record. This issue cannot be fixed for existing responses, but the issue will no longer occur for any new responses created. Additionally, the

text that denotes the users that have contributed after the survey was completed would be incorrect if users may have entered data on another instrument for that record, but this issue (unlike the other one described above) will be fixed retroactively for existing responses and for new responses. Also, both of these issues would mistakenly include calc fields when determining contributors; however, calc fields will no longer be considered because they can be triggered from data being entered elsewhere for a record. (Ticket #38545)

- Bug fix: When exporting data to a stats package for a project that contains repeating instruments, the choices listed for the field "redcap_repeat_instrument" in the stats package's syntax file would mistakenly have the instrument label repeated multiple times for that field if that instrument were set to be repeating on multiple events in the project. (Ticket #38529)

- Bug fix: When viewing the Public Survey Link page of a project containing multiple arms, if the first data collection instrument is not designated for the first event of the current arm, it would mistakenly display the public survey link of another arm (typically the first arm). It now displays a warning on the page to inform the user to fix this issue by designating the first instrument for the first event of that arm. (Ticket #39647)

Version 8.4.1

- Bug fix: In some very rare cases, branching logic, calculations, and various conditional logic would not get parse correctly and would cause errors. (Ticket #39856)

- Bug fix: In certain cases, the @NONEOFTHEABOVE might not work on surveys or forms and might cause the user to get stuck and have to reload the page. (Ticket #40182)

- Bug fix: After running Data Quality rule H, the "Fix calcs now" button would mistakenly not work. (Ticket #40285)

- Bug fix: For longitudinal projects using a public survey on multiple arms, regarding all arms except the first arm, the public survey link would mistakenly be blank on the Public Survey Link page. (Ticket #40311)

- Bug fix: When survey invitations are being scheduled for many participants at once on the Participant List, in which some piping is being performed in the invitation's subject or body, then it might take an abnormally long time to complete the scheduling of all those invitations and might even time out and fail on certain occasions.

- Changed: When viewing the Smart Variables documentation from a project-level context, it will now use the project-level language for the documentation, whereas if viewed outside a project-level context, it will use the system language. It was previously only displaying the documentation in the system language. (Ticket #39949)

- Bug fix: When piping checkbox fields with the "checked" or "unchecked" attribute, in certain cases it might mistakenly not display the correct checked/unchecked choices, respectively. (Ticket #39950)

Version 8.4.2

- Major bug fix: If a slider field with a saved value on a form or survey gets focus (via tabbing into the field or if the field is the first field on a form), then if the user does not change the value of the slider after putting focus on it, then it would mistakenly remove the slider's existing value, thus erasing its value if the user saves the form/survey. (Ticket #40445)
- Change/improvement: Slight performance improvement on "Add/Edit Records" page for longitudinal projects using the Custom Record Label.
- Bug fix: When adding a project as a project template in the Control Center, the popup dialog might fail to display if some projects contain certain special characters in their project title. (Ticket #40283)
- Bug fix: When the Response Limit option has been set for a survey, instead of displaying the custom text on the survey page whenever the limit has been reached, for specific versions of PHP it would mistakenly just display a blank page. (Ticket #39659)

Version 8.4.3

- Major bug fix: When using the designated email invitation field (project-level or survey-level versions of the email field) and saving a value for the email field on a survey or data entry form, when REDCap attempts to synchronize the value across all events/instances where the field is located, it would mistakenly not add the value to events or instances where the email field has never had a value saved. This could result in the email field's value appearing to be lost/deleted in some contexts. (Ticket #40615)
- Bug fix: When uploading a data dictionary containing Smart Variables in either branching logic or calculations, it would mistakenly display an error and prevent the user from completing the upload.
- Bug fix: When piping text that contains a dollar sign followed by a number, it would often mistakenly remove the dollar sign and the number that immediately follows it when displaying that piped text.
- Bug fix: When a record is selected on a project's Logging page, under certain specific conditions it might mistakenly display "Perform instrument-event mappings" logged events.
- Bug fix: When opening the Data History popup for a given field on a data entry form, in certain cases it might mistakenly display the logged events for another field (for the same record) if the other field's variable name exists as the last portion of the current field's variable name (e.g., the field "his_field" would return logged events for the field "this_field" for the same record-event).
- Bug fix: If running REDCap on certain versions/configurations of PHP 5.3, it would not be possible to upgrade or install REDCap. (Ticket #40852)
- Bug fix: There was mistakenly no way to force REDCap to verify the SSL certificate if using SSL/TLS for the database connection, thus it assumed that it should never need to verify it. Since some institutions require SSL certificate verification when using an encrypted database connection, the line "`$db_ssl_verify_server_cert = true;`" should be added to the database.php file in order to force SSL certificate verification for the database connection. Note: The line of code below was added to the

database.php file in the REDCap downloadable install zip file. `$db_ssl_verify_server_cert = false; // Set to TRUE to force the database connection to verify the SSL certificate`

- Change/improvement: On the "Stats & Charts" page, the variable name is now displayed next to the field label for each field displayed on the page.

- Bug fix: When viewing a record on the Record Home Page, on certain occasions if a user clicks on a repeating instrument that has a gray status icon, it might mistakenly create instance 2 as the first instance of that repeating instrument, rather than creating instance 1. This appears to affect only repeating instruments, not repeating events.

- Bug fix: In a longitudinal project that is using the Smart Variables [first-instance] or [last-instance] that are appended to a project variable name in logic, calcs, or piping, it would mistakenly return a blank value if the unique event name is prepended to the variable name.

- Bug fix: When using the randomization module in a project, in which one of the randomization strata fields has a choice that is hidden using the action tag @HIDECHOICE, then when randomizing a record on a data entry form, it would mistakenly display the choices in the randomization popup that should be hidden for the strata field. (Ticket #38987)

- Bug fix: When using a [X-event-name] Smart Variable inside branching logic to reference a field on another event, it would mistakenly display the branching logic error popup.

- Bug fix: When piping data from a matrix checkbox field to a place on the same page, it would mistakenly not pipe it correctly until the page was reloaded. (Ticket #41037)

- Bug fix: When a calc field exists on a repeating instrument or repeating event, and a field on another form/event triggers that calc field, then if no data had ever been entered into the calc field's form, it would mistakenly change the form status icon to red when instead it should stay gray (since only the calc field has data on that form). (Ticket #40940)

Version 8.4.4

- Change: For installations where only administrators can move projects to production, more protection has been added with regard to admins approving requests to move projects to production so that if a user makes a request, then cancels it, and then makes another slightly different request for the same project, it will no longer allow the canceled request to be approved, even if an administrator clicks the link to the request in an email. This provides better protection against a project's data from accidentally getting erased when moving to production. (Ticket #39772)

- Bug fix: When calling the API method "Export Project XML" and setting the parameter "returnMetadataOnly" as FALSE, it would mistakenly not return data but would only ever return just the metadata.

- Bug fix: The Smart Variables [survey-queue-link] and [survey-queue-url] were mistakenly not working when used inside the email subject or email message for an Automated Survey Invitation.

- Bug fix: When piping a project variable inside the email subject for an Automated Survey Invitation, it would mistakenly not successfully pipe the field's data unless that same variable was piped into the email message also.
- Bug fix: When downloading a PDF of an instrument that contains a matrix of fields, the matrix headers might mistakenly overlap the radio buttons or checkboxes of the first field in the matrix under specific circumstances. (Ticket #40969)
- Bug fix: When using record auto-numbering for a data import (via Data Import Tool, API, or Mobile App) that contains data for a repeating instrument or repeating event, then all the data for a given record in the import might be reduced from multiple instances/events of data to a single event/instance of data, thus causing much of the data to mistakenly not get imported. (Ticket #41283)
- Bug fix: When viewing the "Stats & Charts" page, if a field has some missing values, and the user clicks the link to view the record names that have missing values, it might mistakenly return incorrect records-instances. This only occurs in projects having repeating instruments or repeating events. (Ticket #37674)
- Bug fix: When importing data (via Data Import Tool or API) into a longitudinal project and setting true/"yes" for the import option "Allow blank values to overwrite existing saved values?" when importing blank values for checkbox fields into a longitudinal event for which the checkbox's instrument is not designated, it would display the erroneous error that the checkbox field "exists on an instrument that is not designated for the event". (Ticket #37627)
- Bug fix: When adding a new field to an instrument on the Online Designer while in Draft Mode, if the field is being added between a section header and another field, in which the instrument begins with that section header, then the new field would get successfully created but would mistakenly not be visible in the Online Designer on that instrument, thus leaving it in a quasi-orphaned state. (Ticket #41359)

Version 8.5.0

- Improvement: PDF Customization Options – Users may change or remove the “Confidential” text displayed in the header of all PDFs in a project. Also, instead of displaying the REDCap logo and REDCap website URL at the bottom right of all PDF pages, they can instead choose to display the text “Powered by REDCap” in small font. These two settings are project-level, so they will be applied to every page of a PDF for all instruments in a project (for both forms and surveys). These settings can be found in the Additional Customizations popup on the Project Setup page. (Ticket #25326)
- Change/improvement: Protection has been added to help prevent the REDCap database connection's client character set (e.g., latin1, utf8, utf8mb4) from being affected 1) due to changes to the MY.CNF (or MY.INI for Windows) configuration file in MySQL, 2) due to a server upgrade, or 3) due to migrating to a new servers. The current database connection's client character set will be stored in the redcap_config database table, and if the client character set ever changes on its own due to one of the reasons above, REDCap will automatically keep using the existing character set from the redcap_config table in order to maintain the correct encoding to prevent data corruption.

- Change/improvement: New installations of REDCap will utilize utf8mb4 as the default character set for both the database columns (previously set to utf8[mb3]) and client connections (previously set to that of the database server), which is defined in the MY.CNF (or MY.INI for Windows) configuration file in MySQL, or set to latin1 if non-existent. This default has been changed because utf8mb4 encoding can allow for a greater variety of non-Latin characters to be stored in the database. Existing installations will not be able to utilize utf8mb4 encoding but instead will keep using their existing encoding (if other than utf8mb4).
- Bug fix: When installing REDCap, it would mistakenly not auto-set the value of the REDCap Base URL on the install page.
- Bug fix: If using MariaDB 10.2 (or higher) for the REDCap database, the REDCap Control Center would display the erroneous error message "Your REDCap database structure is incorrect!". (Ticket #28083, #32131, #41911)
- Bug fix: When using the "Add/Edit Branching Logic" popup in the Online Designer, if certain Smart Variables are used in the branching logic, and then the user selects a record from the "Test logic with a record" drop-down, it might display an erroneous message saying the the logic is not syntactically correct.
- Bug fix: When performing a data import of radio buttons in a matrix that has ranking enabled, it would sometimes display an erroneous error message if two or more matrixes of questions are being imported at one time, thus preventing the import from completing. (Ticket #39804)
- Bug fix: When using Dynamic Data Pull (either DDP Custom or DDP on FHIR) and the MRN field is being used as the Secondary Unique Field in the project, then if an MRN is entered on a form and the "Duplicate value!" error message popup is displayed, it would mistakenly not be possible to close the popup, thus causing the user to have to reload the page. (Ticket #41879)

Version 8.5.1

- Bug fix: Many project pages would not function at all if using MySQL version 8.0 or higher. (Ticket #42264)
- The outdated training video on Instrument Development was updated.
- Bug fix: When a calc field's value is being piped somewhere on the same form or survey page where the calc field is located, and if a Smart Variable is utilized in the calculation, then the calculated value might not get piped and propagated correctly when the page immediately loads. (Ticket #42687)
- Bug fix: When using WebDAV for file storage and uploading files larger than 2 GB in size, they would mistakenly fail to upload successfully. (Ticket #42416)
- Bug fix: When enabling the aggregate survey results display on a survey, if respondents are allowed to return to the survey without needing a return code, it would mistakenly still ask the respondent for a return code if returning directly to the aggregate survey results page. (Ticket #42568)

- Bug fix: The variable names of fields were mistakenly being displayed next to the field labels of fields on the survey's aggregate survey results page. It should not display the variable names on surveys but only on the "Stats & Charts" page within the project.
- Bug fix: Cross-event branching logic or calculations would mistakenly not evaluate correctly for unchecked checkboxes referenced on other events. (Ticket #42585)
- Bug fix: When a field's value is being piped into the field label of a required field, in which that required field is submitted on a survey or form without a value, the resulting popup error "Some fields are required!" would mistakenly display the pre-piped version of the field labels in the popup rather than performing the piping before displaying the labels. (Ticket #42577)
- Bug fix: When using the Data Search feature on the "Add/Edit Records" page in a longitudinal project, if a value is entered that has a match inside a record name (record ID field), then some of the options returned in the search would often not navigate the user to a data entry page when clicked but would instead mistakenly just reload the "Add/Edit Records" page. (Ticket #42965)
- Bug fix: When using the To-Do List to process a "move to production" request, in which the request has been moved to "low priority" status, it would display the erroneous error message "Error: Request not valid", thus preventing the administrator from processing the request. (Ticket #43036)
- Bug fix: Record names displayed in the Participant List would not wrap to the next line but would mistakenly get truncated, thus preventing users from viewing the full record name in some cases. (Ticket #43059)
- Bug fix: If branching logic or calculations are used for a field on a survey page, in which the logic/calc references the current survey's Form Status field, it would mistakenly assume the Form Status value to always be "" (blank) rather than the true status value of 0, 1, or 2. This does not affect data entry forms but only survey pages.
- Change: When composing a survey invitation and clicking the "Preview" tab, instead of displaying the survey link as "Sample Survey Link" or "SURVEY TITLE", it now displays the actual survey title as the link text. Additionally, when clicking the "Send text email", this same thing now occurs in the email that is received. (Ticket #38955)
- Bug fix: If using custom link text for the Smart Variable [survey-link] when used inside a survey invitation's text, it would mistakenly fail to use the defined custom link text for the Smart Variable and instead would revert to using the survey title as the link text.
- Change: Added "Postal Code (Germany)" as a new field validation type.

Version 8.5.2

- Improvement: The REDCap Mobile App v3.0 and later supports the Repeating Instruments and Events feature in REDCap projects. This version of the mobile app will be released on 6/22/2018 in the Google Play Store, and will also be released in the Apple App Store shortly thereafter (pending approval).
- Change: Added "Postal Code (France)" as a new field validation type.

- Bug fix: When viewing reports, the same SQL query would mistakenly get run many times unnecessarily, thus reducing performance on the report page. (Ticket #42764)
- Bug fix: When clicking the "Fix calcs now" button when viewing the results of Data Quality rule H, if the first instrument of an event is locked for a given record, then any calc fields existing on that same event (even on other instruments) would mistakenly not have their values fixed by DQ rule H. (Ticket #23433)
- Bug fix: Fixed incorrect instructions in an error on the Configuration Check page in the Control Center. (Ticket #43672)
- Bug fix: When exporting a Project XML file that contains multiple choice fields that have choice labels containing a "less than" sign followed immediately by a number or letter, it would mistakenly truncate that choice label in the XML file. (Ticket #43675)

Version 8.6.0

- Improvement: Improved data export for biomedical ontology fields - If fields using the biomedical ontology auto-suggest feature are being exported to a stats package, it will now render those fields as multiple choice fields (rather than as free-form text fields) in the resulting stats package syntax file, in which all the cached choices for those ontologies will be output as separate choices (values and labels) for those fields in the syntax file. Note: Since some ontologies contain thousands of choices, all possible choices will not be output in the syntax file, but instead only the cached choices that have been saved in that REDCap project for those ontologies will be output as choices in the syntax file.
- Change/improvement: A new "Administrator Resources" section was added near the top of the Control Center's left-hand menu. It contains links to the REDCap Community site, the public Project REDCap site, and the REDCap Training Materials site.
- Major bug fix: If an Automated Survey Invitation has conditional logic containing a datediff() function that is explicitly using "now" as a parameter, the cron job that runs several times a day to trigger any datediff+now ASIs would mistakenly fail to schedule invitations for this ASI. Note: The issue does not exist for datediff+today ASIs but only for datediff+now ASIs. (Ticket #43783)
- Bug fix: When clicking the +- options at the top of a survey page to increase or decrease the font size of the survey text, in some cases with particular nested HTML tags, it would mistakenly compound the size changes unnecessarily, thus causing the font size to be too large or too small for some blocks of text.
- Bug fix: When downloading a "compact" PDF containing data, if a multiple choice field contains many choices (e.g., >20) it might mistakenly display only that field on a page by itself.
- Bug fix: When downloading the CSV file of users on the Browse Users page in the Control Center, it would mistakenly have the resulting filename ending with ".csv.csv" instead of just ".csv". (Ticket #43774)
- Bug fix: When referencing a repeating instance number in the conditional logic of an Automated Survey Invitation and then selecting a record using the "Test logic with a record" option, it would mistakenly cause a PHP fatal error. (Ticket #44104)

- Bug fix: When a user has De-identified data export privileges in a project and attempts to export a PDF containing data, in which MDY- or DMY-formatted date/datetime fields are being piped into labels in that PDF, then instead of the piped values being replaced with "[*DATA REMOVED*]" as expected, they would mistakenly be replaced with "00.00.0000 REMOVED*]". (Ticket #44123)
- Bug fix: When using the [survey-queue-link] Smart Variable with custom text to display, in certain situations it may mistakenly cut off the first word of the custom text or not display the custom text at all. (Ticket #44224)
- Bug fix: When setting an account expiration time for a user on the Browse Users page (via "View User List By Criteria"), if the administrator's date format preference is set to Y-M-D on their My Profile page, then the pre-filled expiration time in the Set Account Expiration popup might mistakenly be in Y-M-D H:M:S format when instead it should only be in Y-M-D H:M format, thus throwing a date-formatting error when submitting the action. (Ticket #44228)
- Bug fix: If using MySQL 8.0 or later for REDCap's database, it would erroneously display the "database structure is incorrect" error in the Control Center when nothing is really incorrect about the database tables. (Ticket #42594)
- Bug fix: Minor changes to some database tables, which were mistakenly created with BTREE indexes, which is a type of index that is not compatible with some versions of MySQL or MariaDB.

Version 8.6.1

- Improvement: Smart Variables are now able to be utilized in Data Quality rule logic. Note: In many cases, Smart Variables in the logic may cause Data Quality rules to take much longer to complete, which is due to the fact that the logic has to be re-evaluated for *every* item being processed by the DQ rule, whereas normally the logic only needs to be evaluated just once at the beginning of when the DQ rule is executed.
- Improvement: Data Quality rule H (i.e., "Incorrect values for calculated fields") and auto-calcs (i.e., the process of calc fields being triggered by data imports or cross-form/cross-event calculations) can now handle Smart Variables that are used inside calculated field equations. In previous versions, such calc fields could only successfully run while on a data entry form or survey page.
- Bug fix: When creating/editing an Automated Survey Invitation and in Step 3 setting the option "Send after lapse of time" that would result in a send time occurring in the year 2038 or afterward, it would mistakenly set the send time to be 1/1/1970 or 12/31/1969 instead. (Ticket #44459)
- Improvement: A Data Access Group can no longer be deleted if one or more records are still assigned to it. If a user attempts to delete a DAG that contains records, it will prevent such and display an error message.
- Bug fix: When using the Smart Variables [form-link] and [record-name] inside the email subject or email message of an Automated Survey Invitation, it would mistakenly not pipe the record name into the form link URL for [form-link] and would mistakenly replace [record-name] with " _____ " instead of the real record name. (Ticket #44549, #44550)

- Bug fix: If a slider field exists on an instrument that is currently locked, the user would mistakenly still be able to modify the slider position and value. Note: This would not affect the slider's value at all since the instrument could not be saved until it was unlocked. So at most, this could cause confusion. (Ticket #44608)

- Bug fix: In a calculated field or in branching logic that has cross-event logic while referencing a field that exists on a repeating instrument from another event, it would mistakenly assume instance #1's value to always be blank/null for that field and thus cause the logic or calculation to come to an incorrect result. (Ticket #44474)

- Bug fix: If a suspended user gets unsuspended by an administrator either via the Browser Users page in the Control Center or via a Sponsor Dashboard request, the user would mistakenly get suspended again within the next day if they did not log into REDCap soon after being unsuspended.

- Bug fix: If a sponsor had made a request to an administrator via an action in the Sponsor Dashboard, if the administrator was using a link in the email to process requests (as opposed to using the To-Do List), the administrator might mistakenly try to process the same request twice, which could cause issues. Now if an administrator attempts to process an already-processed request, it will display an error message letting them know that it has already been processed and therefore cannot be processed again.

Version 8.6.2

- Change/improvement: When displaying the filename of an uploaded file on a File Upload field on a form or survey, if the filename is very long (>34 characters in length), it now truncates the filename with an ellipsis closer to the middle of the filename rather than at the end. This allows the file extension to be visible, whereas in previous versions it was impossible to tell what type of file it is without downloading it if the filename was long.

- Change: When viewing a partially completed or fully completed survey response on a data entry form, the text color and background color of the red box near the top of the page have been changed to reflect the state of the response more accurately (i.e., it is no longer displayed as a red box, which often evokes a sense of there being an error). If the response is partially completed, it is displayed as an orange box, whereas if it is fully completed, it is displayed as a green box. The box color is thus consistent with the color instrument status icons used.

- Bug fix: When using the biomedical ontology search for a text field on a form or survey, it was mistakenly including Semantic Types Ontology (STY). It now excludes Semantic Types Ontology from biomedical ontology search unless field validation is STY. (Ticket #44910)

- Bug fix: When a survey has "Save & Return Later" enabled, and a respondent clicks the "Start Over" button upon returning to the survey, the survey page mistakenly does not display the survey instructions at the beginning of the survey. (Ticket #44838)

- Bug fix: The record drop-down list displayed in the Online Designer both in the "Add/Edit Branching Logic" popup and also in the "Add/Edit Field" popup for calc fields would mistakenly not display the Custom Record Label and Secondary Unique Field labels.

- Bug fix: The record drop-down list displayed in the Online Designer both in the "Add/Edit Branching Logic" popup and also in the "Add/Edit Field" popup for calc fields would be too long for projects with large amounts of records, which could cause the page to load very slowly or not load at all. To remedy this, the record drop-down list now only displays the first 200 records.
- Change: When viewing a partially completed or fully completed survey response on a data entry form, the process of displaying the number of contributors to the response in the red box near the top of the page was resulting in very slow page loads in many circumstances. To provide a better user experience for this, it now displays a "View all contributors" link instead, which can be clicked to reveal the users who have contributed to that response.
- Bug fix: The rendering of the Participant List was unnecessarily slow due to some incorrect queries that were pulling information not needed. This fix should make the Participant List load much faster, especially for larger projects with thousands of records.
- Bug fix: In the "Compose Survey Invitations" popup on the Participant List page, the "Previously Sent Email" drop-down list displayed under "Load message box with text from a previous email?" would mistakenly load email text containing static, unique survey links from previously sent invitations (which could cause major issues if used verbatim for new invitations) when instead it should have been loading the invitation text containing the Smart Variable [survey-url] in place of the static survey link.
- Change: Very small wording change to the certification text on the certify page when using the e-Consent Framework on a survey.
- Change: On the "Edit a Project's Settings" page in the Control Center, it now does not display the drop-down list of projects if viewing the settings of a specific project, but instead provides a link to "Select another project", which will then display the drop-down list. This helps the page load faster if there are many (>10,000) projects that exist in the REDCap system.
- Change/improvement: The REDCap Shared Library can now be disabled (if desired) at the project level by an administrator on the "Edit a Project's Settings" page in the Control Center. If disabled for a given project, all Shared Library buttons and all references to the Shared Library will no longer appear in the project.

Version 8.6.3

- Major bug fix: On survey pages, data entry forms, and other pages where conditional logic and calcs are evaluated, those pages may take an exorbitant amount of time to load (and in some cases may never successfully load at all). This appears to only affect certain Windows server environments.

Version 8.6.4

- Bug fix: The upgrade or install pages would fail to load if running PHP 5.3 or 5.4, thus preventing the administrator from upgrading or installing REDCap. This bug emerged in REDCap 8.6.2, and it exists in both 8.6.2 and 8.6.3.

Version 8.6.5

- Major bug fix: When upgrading from a REDCap version lower than 8.4.0 to version 8.4.0 or higher, if any projects used Twilio telephony services for surveys and had an Automated Survey Invitation set to use the "Participant's Preference" for the delivery method, then new invitations scheduled by the ASI might not include a survey link (when needed) upon being scheduled. (Ticket #42868)
- Bug fix: When importing data values for a repeating event via Data Import Tool or via API but not including the form status field in the imported data set for any of the instruments on which the imported fields are located, those repeating instances on the repeating event might get orphaned in some user interfaces, such as in the Record Status Dashboard, and thus do not become visible until the user attempts to create a new instance through the user interface and then saves the form. (Ticket #46285)
- Bug fix: When piping the Smart Variable [event-name] when it is prepended to a variable name, it might mistakenly replace it incorrectly by replacing it with the current event name without square brackets around it. (Ticket #46001)
- Bug fix: In certain cases Smart Variables were not getting evaluated correctly when used inside the conditional logic of Automated Survey Invitations, thus causing invitations not to get scheduled appropriately. (Ticket #44104)
- Bug fix: On the Project Modifications page, when clicking the Compare button to view the differences between old and new choices of a multiple choice field, it would mistakenly always display "0" for the record count for every choice, even if some records do have that choice saved. This issue appears to only occur in specific versions of PHP. (Ticket #25851)
- Bug fix: In a report or via the API, if the user is requesting specific records and also specific events to be returned, if there is no data for those events for those records, then it would mistakenly return empty "ghost" rows as if data does exist on those events, which is confusing. (Ticket #46342)

Version 8.7.0

- Improvement: A "Copy existing choices" link was added to the "Add Matrix of Fields" popup on the Online Designer page (just like the same link in the "Add New Field" popup on that same page) to copy the choices from an existing multiple choices field to that matrix of fields. (Ticket #46680)
- Change/improvement: The JS/CSS front-end libraries jQuery and Bootstrap have been upgraded to jQuery 3 and Bootstrap 4.
- Change: When exporting data in CSV format (raw data or labels) on the "My Reports & Exports" page, it now maintains all double quotes in free-form text, whereas previous versions would replace all double quotes with single quotes in a CSV export. Note: When exporting to stats packages, it will still replace double quotes with single quotes for compatibility purposes.

- Bug fix: When using a logo on a survey and also using the "Save & Return Later" feature, if a respondent chose to return to a survey, then upon loading the survey page to enter their return code, a JavaScript error would occur on the page. (Ticket #46143)
- Change/improvement: Elements on survey pages have been modified to work better for accessibility purposes, such as with screen readers.
- Change: Some language was hard-coded in previous versions. The following things have now had their text abstracted so that they are now translatable: the buttons for uploading/deleting files in the File Repository, the "Generate Schedule" button on the Schedule page, and the "Auto Logout Warning" popup. (Ticket #26708)
- Change: The footer of survey pages now says "Powered by REDCap", whereas previous versions have "REDCap X.X.X - © 20XX Vanderbilt University". For non-survey pages, the footer will remain the same.
- Bug fix: When executing a custom Data Quality rule that contains a single variable in the logic, extra discrepancies might mistakenly be returned in some cases, especially if the project is longitudinal and/or contains repeating instruments/events. (Ticket #45695)
- Bug fix: When piping the Smart Variable [previous-event-name] or [next-event-name] when it is prepended to a variable name, it might mistakenly replace it incorrectly by replacing just the Smart Variable (but not the field variable) with six underscore characters or with nothing (depending on the context). (Ticket #46001)

Version 8.7.1

- Major bug fix: Calculations that exist on a repeating instrument or repeating event might mistakenly not get calculated when importing data via API or Data Import Tool or when executing Data Quality rule H.
- Bug fix: When cross-event branching logic is used on a field in a longitudinal project, in which some events being referenced in the logic do not contain any data for a given record, in some cases the PDF export of an instrument would mistakenly not correctly determine if the field should be hidden or not in the PDF, and thus it might hide the field when it should display it (or vice versa). This bug only affects the PDF. (Ticket #42206)
- Bug fix: The action of creating or modifying a Custom Record Status Dashboard was mistakenly not getting logged on the project Logging page.
- Bug fix: The default browser behavior of navigating back to the previous page after a user clicks their keyboard's Backspace button was mistakenly occurring in "search" input type fields, which are predominate in External Modules and their configuration pages.
- Bug fix: An error message on the Data Import Tool had incorrect text. (Ticket #47040)
- Bug fix: In longitudinal projects in production, the "select all" and "deselect all" links on the "Designate Instruments for My Events" page would mistakenly allow the user to select/deselect already-designated

instruments. Instead it should only allow the user to select/deselect instruments that are not yet designated. (Ticket #47020)

- Bug fix: Small SQL issue caused if upgrading to 8.7.0 from an earlier version. (Ticket #47020)
- Bug fix: In a longitudinal project that has multiple arms and is also using the Double Data Entry module, the Record Status Dashboard would mistakenly not display any form status icons on the page for a user that is Double Data Entry person 1 or 2.
- Bug fix: Minor alignment or placement issues for elements on certain pages (due to introduction of Bootstrap 4), such as the position of the main project window on iPads and also the placement of "Upcoming Calendar Events" table at the bottom of the Project Home page. (Ticket #47074, #47230)

Version 8.7.2

- Improvement: Performance boost – Certain pages in projects with thousands or more records should now load much faster in most cases. This includes the Record Status Dashboard, various pages utilizing Data Access Groups, and certain reports. Reports A and B should especially see significantly faster loading (excluding when viewing “all” pages in report A or B).
- Improvements related to viewing or creating reports
 - New report option that will combine checkbox options into a single column of only the checked-off options. Previously, any checkbox fields in a report would have their choices represented as separate columns in the report, but with this new setting, they can now all be represented as a single column with comma-delimited values and comma-delimited labels. Note: If data is exported to a stats package on a report using this option, checkbox fields will be represented as text fields in the stats package’s syntax file that gets generated by REDCap.
 - Report description – Users may now optionally set a description for a report, in which the description gets displayed as text below the report title on the report page. This allows users to provide instructions or explanatory text for the report. Note: HTML may be used in the description to add links or to style the text.
 - Change: When exporting a report, it now includes the report’s title as part of the resulting export files’ file name. This should make it easier to distinguish different exported data sets if a user is exporting several reports for a given project.
 - Improvement/bug fix: In previous versions it was very difficult (and sometimes impossible) to create reports with lots of fields in projects that contained >1000 total fields. In some cases, it would cause the Create Report page to be very sluggish or even to crash in some cases. This should no longer happen, and users should be able to easily create reports with thousands of fields, if they wish, with no problem.
 - Change: When exporting a data dictionary, it will now automatically prepend the Field Annotation column with a single space character if the value begins with an "@" sign. This is to prevent issues when loading the data dictionary into Microsoft Excel, which uses "@" to denote the beginning of an equation.

When the data dictionary is re-uploaded back into REDCap, the extra space will be subsequently removed to maintain the integrity of the initial value in the data dictionary as it was exported.

- Bug fix: If a record in a project has some survey invitations scheduled, and then the record is renamed, its associated invitations would mistakenly get disassociated from the record, thus causing the invitations not to get delivered. (Ticket #47887)

- Bug fix: If a user placed their cursor into any text input field and clicked their Backspace button on their keyboard, it would cause a JavaScript error. In most cases, this would go unnoticed; however, some browsers might display a popup alerting the user of this error, which could confuse the user.

- Bug fix: Drop-down fields using the auto-complete option would react very slowly when typing text into them if the number of drop-down options was very large (>1000). For larger drop-down fields, it now requires more characters (based on the drop-down size) to be initially typed before it begins performing the auto-complete functionality. For example, if the drop-down contains more than 200 options, it requires at least 1 character to be entered before auto-complete is activated, and if it contains more than 500 options, then requires 2 characters (and so on, up to 4 characters max). Bug emerged in REDCap 8.7.0 (related to jQuery 3).

- Bug fix: The Repeating Instruments tables displayed at the bottom of the Record Home page would mistakenly be displayed vertically rather than horizontally. Bug emerged in REDCap 8.7.0.

- Bug fix: Minor aesthetic styling fixes due to Bootstrap 4 issues. This additionally includes reports not printing correctly in Firefox. (Ticket #47920)

- Bug fix: When viewing the "Copy existing choices" popup when adding/editing a field in the Online Designer, many of the choices might mistakenly overlap each other, thus making some impossible to read.

- Bug fix: The REDCap cron job was mistakenly being counted toward "Page Hits" as displayed on the Control Center's Activity Graphs page. (Ticket #46074)

- Bug fix: When using the e-Consent Framework in a project, in which a record has an e-Consent PDF file associated with it and a user deletes the record, it would mistakenly not delete the record's e-Consent entry. This would cause problems if another record was created later using the same record name, in which it would prevent the saving of that new record's e-Consent file. (Ticket #38660)

- Change: When exporting data to SPSS, date and datetime fields are now represented as A500 and text fields as A1000 in the SPSS syntax file, whereas previously they were all represented as A30000, which could cause very slow processing when loading the data into SPSS. (Ticket #37115)

- Bug fix: When using "Japanese (Shift JIS)" for a project's "character encoding for exported files" setting, and the project's PDF Customization setting has the PDF header text (e.g., Confidential) in Kanji/Japanese, then the PDF header text would mistakenly not display correctly in the PDF. (Ticket #48035)

- Bug fix: When using literal date or datetime values inside a datediff() function in the "Add/Edit Branching Logic" popup in the Online Designer and testing the logic against a record, it might mistakenly state the field should be hidden when instead it should be shown (or vice versa). Related, if using literal

dates inside a datediff() function in the branching logic of a field, and a user goes to export a PDF with saved data of that field's instrument for an existing record, the field might mistakenly be hidden in the PDF when instead it should be shown (or vice versa). (Ticket #47717)

- Bug fix: When using "Japanese (Shift JIS)" for a project's "character encoding for exported files" setting, the Kanji text might not display correctly if the PDF is opened on certain devices. The remedy this, the internal font in the PDF has been changed from Gothic to Kozmin. (Ticket #48035)

- Bug fix: When using a Stop Action on a checkbox on a survey, in which the "Enhanced checkbox and radio button" option is enabled for the survey, then if a participant triggers the Stop Action but chooses to "Continue survey" (rather than ending the survey), it would mistakenly not uncheck the checkbox choice they had selected. (Ticket #48273)

- Bug fix: Using an X-instance Smart Variable that is appended to a variable or Smart Variable containing a parameter with a colon (e.g., [mycheckbox:checked][last-instance]) might mistakenly not be parsed correctly, thus possibly returning an incorrect value. (Ticket #48251)

- Bug fix: When the record ID field in a project has field validation, and the Scheduling page is being used in a longitudinal project to create a new record (assuming record auto-numbering is not enabled), the Scheduling page would mistakenly not employ the field validation if a record name was entered in an incorrect format. This only occurs for certain field validation types. (Ticket #46643)

- Bug fix: When using the Smart Variables "previous-event-name" or "next-event-name" in a calculated field while viewing the first or last event, respectively, it would mistakenly display the error prompt stating that there was an error in the calculation. Instead, it now silently replaces those with a blank value (wrapped in quotes) in the equation to prevent an error from occurring in order to force a blank value to be returned. (Ticket #48631, 48669)

- Bug fix: When using the X-event-name Smart Variables as prepended to a field variable, in which the variable name contains a number, it might not parse the Smart Variable correctly, thus causing it to replace it with a blank value or the value from the wrong event. (Ticket #48576)

- Bug fix: Some data entry forms, especially for records that have repeating instruments with many repeating instances saved (i.e., hundreds or more), would load very slowly, sometimes causing the page to time out and never fully load. They should now load much faster. (Ticket #40634)

Version 8.7.3

- New options for Data Exports

- Improvement: When exporting a report, a new "Data formatting options" section appears in the export dialog to allow users to choose the CSV delimiter character to be used in CSV Raw Data and CSV Labels exports. Options include comma (default), tab, semi-colon, pipe, and caret. This is useful in certain cases when the resulting data file needs to have another delimiter, such as a tab, for example. In addition, the two API methods "Export Records" and "Export Reports" have a new analogous parameter "csvDelimiter" that will set the CSV delimiter character if using "csv" as the format in the API request. See the API documentation for full details. (Ticket #30939)

- Improvement: When exporting a report, a new "Data formatting options" section appears in the export dialog to allow users to optionally force all numbers into a specified decimal format. It will default to "Use fields' native decimal format", but provides the choices "Use period/full stop" and "Use comma" as the decimal character for all numbers. This will allow projects that have fields with period/full stop decimals (calc fields, number validated fields) and those with comma decimals (comma-as-decimal validated fields) to all be exported in the same uniform number format, thus providing greater consistency in the data being exported. In addition, the two API methods "Export Records" and "Export Reports" have a new analogous parameter "decimalCharacter" that will set specified decimal format for all numbers in the API request. See the API documentation for full details. (Ticket #30939, #34597)

- Improvement: New optional parameters added to the API Export Records method to filter data returned based on when a record was created or modified

- dateRangeBegin – To return only records that have been created or modified *after* a given date/time, provide a timestamp in the format YYYY-MM-DD HH:MM:SS (e.g., '2017-01-01 00:00:00' for January 1, 2017 at midnight server time). If not specified, it will assume no begin time.

- dateRangeEnd – To return only records that have been created or modified *before* a given date/time, provide a timestamp in the format YYYY-MM-DD HH:MM:SS (e.g., '2017-01-01 00:00:00' for January 1, 2017 at midnight server time). If not specified, it will use the current server time.

- Improvement: The Record Status Dashboard will now remember the user's last selection for the "page number" drop-down and the "records per page" drop-down, so that when they return to the dashboard in that project in the future, it will already have their last selections pre-selected for those two drop-downs. Note: It already remembers the user's last selection for "dashboard displayed" and "data access group". (Ticket #48913)

- Improvement/change: When a user copies a project via the "Copy the project" button on the Other Functionality page, it now logs the PID (project_id) and project title of the new project in the copied project, and it now also logs the PID and project title of the originating project in the newly created project. So now it should be much easier for users to see if someone copied a project, and if so, determine which project is the one that had been created from the original. (Ticket #47208, #42783)

- Bug fix: After completing a data import in a project with thousands or tens of thousands of records, many project pages would sometimes become unresponsive for quite a while.

- Bug fix: When viewing the To-Do List in the Control Center, some requests might mistakenly still show up in the request counts even though the requester's account has been deleted from the REDCap system. (Ticket #48846)

- Bug fix: Certain database queries that check to make sure that a project's reports are in the correct order were getting run more than necessary, which would sometimes cause certain pages in a project to run slowly.

- Bug fix: For large screens, project pages might mistakenly have an empty column of whitespace on the far right. (Ticket #49155)

- Bug fix: After editing the branching logic of a field in the Online Designer, it would mistakenly chop off the first character in the branching logic when displaying it in red text on the page for the field. (Ticket #49098)
- Bug fix: The To-Do List page in the Control Center would mistakenly display with the action buttons overlapping the previous column in the table. (Ticket #49096)
- Change: When a REDCap administrator enables or disables either the DDP on FHIR module or the DDP Custom module, it now explicitly states this on the Logging page, whereas previous versions merely logged the action generically as "Modify project settings".
- Bug fix: If using MySQL 8.0 as the database, in certain cases the Control Control might erroneously display the "Database structure is incorrect" warning even though nothing is wrong with the database tables. (Ticket #49580)
- Bug fix: If using certain non-English languages as the system language, the login page might mistakenly truncate the "Username:" or "Password:" labels. (Ticket #48547)
- Bug fix: When exporting a project's Project XML file, for certain server configurations, it would cause the XML file to have all linefeeds removed from Section Headers and Field Labels. Note: This fix will not fix any Project XML files that have already been generated but will fix this issue for any XML files generated in the future. (Ticket #48719)
- Bug fix: If there exists piping, calculations, or conditional logic using the Smart Variables first-event-name or last-event-name that happens to be prepended to a checkbox field, in which a checkbox choice is explicitly specified inside parentheses, it would mistakenly return a list of all the checked-off checkbox labels instead of the checked-off status for the specified choice. (Ticket #49378)
- Bug fix: When a user attempts to place a production project into draft mode, it might mistakenly just reload the same page with no changes, thus preventing the project from being put in draft mode. (Ticket #6346)

Version 8.7.4

- Major bug fix: If a user has data export privileges of "De-identified" or "Remove all tagged Identifier fields", and then the user exports a report in which every field in the report gets removed due to their export privileges, then it would mistakenly export data for *all* the fields in the entire project. (Ticket #48976)
- Major bug fix: If a user attempted to put a production project into Draft Mode on the Online Designer page, it would fail and merely reload the page. (Ticket #49866)
- Bug fix: The projects table on the Browse Project page in the Control Center was cut off on the right side. (Ticket #49773)
- Change: Added the HTML tags <map> and <area> to the list of allowed tags that can be used in user-defined text (e.g., field labels, survey instructions). (Ticket #49526)

- Bug fix: If a field was using @DEFAULT, @NOW, or @TODAY action tags, and that field was also being piped into text somewhere on that same page, then the field values would mistakenly not get piped when the page initially loads. (Ticket #49839)

Version 8.8.0

- New feature: PROMIS Batteries – 15 batteries of instruments are now available in the REDCap Shared Library. A battery is a set of instruments that can be downloaded from the Shared Library as a bundle, in which they are meant to all be taken together one after another within a single battery. When downloading from the Shared Library, the survey auto-continue feature will be enabled for these instruments to allow a participant to automatically continue from one to another to simulate the battery functionality.

- Improvement: A project's Record ID field can now be used as a Live Filter in any given report, thus allowing users to easily view the report for a single record.

- Bug fix: When hitting the Enter button while inside a date or datetime field that triggers calculations or branching logic on the same page of a form or survey, it might mistakenly display erroneous error prompts stating that something is syntactically incorrect with the calculation or branching logic, which is not the case.

- Bug fix: When piping a value from a date or datetime field into the @DEFAULT action tag of another date/datetime field that has either MDY or DMY date format, the value would mistakenly get mangled and thus be incorrect when the page initially loads. (Ticket #17157)

- Bug fix: When uploading a file for a File Upload field, under certain conditions it might mistakenly cause multiple rows to be added to the redcap_data database table for that record. (Ticket #50178)

- Bug fix: Fixed issue related to performance boost from REDCap 8.7.2 that caused some very large projects to be extremely slow on certain pages temporarily if multiple users were using the project simultaneously.

- Bug fix: If records exist in an arm in a multi-arm project, and then that arm is deleted, those records in that now-deleted arm might mistakenly appear on certain pages, such as the Record Status Dashboard or Add/Edit Records page. (Ticket #50353)

Version 8.8.1

- Improvement: The "Sponsor Dashboard" and the Control Center's "Browse Users" page now have a new action button: "Re-send account creation email". This new action is only available for REDCap installations with either "Table-based" or "LDAP & Table-based" authentication. Clicking the button will send the user the same email (which includes the link to set their password) that was sent to them when their Table-based account was created. This will often be used in case the user did not receive the original email (for whatever reason).

- Improvement: Under the "PDF Customization Options" section in the Additional Customizations popup on the Project Setup page, a new option has been added: "Display or hide the Secondary Unique Field value (if enabled) at the top right corner of the PDF". This option will be useful, for example, when sending the PDF to a survey participant, in which the Secondary Unique Field value should not be known or viewable to the participant.

- Improvement: When selecting a color for an item under "Custom survey theme options" on the Survey Settings page, the color-picker now allows users to provide the Hex color code (e.g., #0b5394) to choose the color of the item. (Ticket #8321)

- Change/improvement: The option "Announcement text to display at top of Home page and My Projects page" on the "Home Page Configuration" page in the Control Center now has an extra option that says "Additionally display text on login page?", which will give admins the ability to opt out of displaying that text on the login page, which it currently does by default. (Ticket #21796)

- Major bug fix: If importing new records into a project via Data Import Tool or API Import Records, it would mistakenly not update the record count in the project to reflect the new records that were added.

- Major bug fix: If a user in a Data Access Group is creating a new record and uploading a file for a File Upload field on a form or survey prior to clicking the Save button, which would create the record, it will correctly assign that record to the user's DAG, but that record might mistakenly not show up for the users in that DAG when viewing a report, Record Status Dashboard, Add/Edit Records page, or other pages that display a list of records. This issue would usually correct itself after 3 days.

- Bug fix: If a user attempts to create a new record on the Add/Edit Records page, in which the record contains a tab character (via copy-and-pasting the record name from elsewhere), it would mistakenly not inform the user that tab characters are not permitted in record names and would simply remove them when loading the Record Home Page for that new record. (Ticket #50347)

- Bug fix: If a user adds Custom Event Labels for a longitudinal project, and then converts the project to classic/non-longitudinal format, the Custom Event Label for the first event would mistakenly still appear on the Record Home Page. Custom Event Labels should only appear when a project is longitudinal. (Ticket #49885)

- Change: The language has been abstracted to allow for translation for the popup that appears on data entry forms and survey pages when a user leaves spaces at the beginning or end of a text box's value. (Ticket #37401)

- Bug fix: Fixed issue related to performance boost from REDCap 8.7.2 that caused some very large projects to be extremely slow on certain pages temporarily if multiple users were using the project simultaneously.

- Bug fix: In a longitudinal project that is in production, if a user attempts to un-designate an instrument for an event on the "Designate Instruments for My Events" page, specifically using the CSV file upload option, it would mistakenly allow the user to do so, even though only REDCap admins should be able to un-designate instruments for events while in production. (Ticket #48290)

- Bug fix: When using a date or datetime field with DMY or MDY format as the record ID field, it would mistakenly not save the record name correctly when trying to create the record, but instead it would mangle the date format. (Ticket #49373)
- Bug fix: If branching logic or a calculation on a repeating instrument or repeating event utilizes the Smart Variable "current-instance" (e.g., [yesno_var][current-instance]*1), then when viewing the first repeating instance of that instrument/event, it would mistakenly not perform the branching logic or calculation correctly if the value for that field in the logic/calc changes while on that page. (Ticket #50094)
- Change: When viewing the "Add New Field"/"Edit Field" popup in the Online Designer, it will now ask the user to choose the ontology service that they wish to use (it did not do this in previous versions), even though there is just one to choose. After choosing "BioPortal Ontology Service", it will then display all the ontologies available for BioPortal, as it has done in the past. This extra step was added to allow for more custom ontology services to be added in the future. But for now, BioPortal is the only service currently available by default in REDCap.
- Bug fix: When downloading a PROMIS Battery from the REDCap Shared Library, it would mistakenly enable the Survey Auto-Continue option for all instruments in the battery when instead it should enable it for all except for the last one.
- Bug fix: When running Data Quality rule F, in which some fields being evaluated exist on a repeating instrument, it might mistakenly display them in the list of discrepancies when in fact it is a false positive. (Ticket #49640)
- Bug fix: Calculated fields would sometimes hit a precision limit in JavaScript and mistakenly return a blank value for the calc field rather than the correct numerical result, which might need to be displayed in scientific (exponential) notation. (Ticket #50578)

Version 8.8.2

- Change: If a user loads a data entry form without a record in context, in which it displays the Incomplete/Complete Records drop-downs for choosing a record (this page can only be navigated to by clicking the "Show data collection instruments" link on the left-hand project menu and then selecting a form), if the project exceeds 25,000 records, it will truncate the drop-downs so that they only display the last 25,000 records ("last"=those at the end when viewing an ordered list of all records). This is to improve performance by preventing the page from having to output so much HTML to the client.
- Bug fix: If text has been set for the Home Page setting "Announcement text to display at top of Home page and My Projects page" and the setting "Additionally display text on login page?" is set to "No" (which is a new feature in v8.8.1), then it would mistakenly display the custom Home Page text below the login form when a user is logging in, even though it is not supposed to. Bug emerged in REDCap 8.8.1. (Ticket #50889)
- Bug fix: The table listing all the user rights/roles on the User Rights page in a project would mistakenly not display the last column or two of the table. (Ticket #50876)

- Bug fix: If a field exists on a repeating instrument, and a value is being imported for that field (via Data Import Tool or API) in which no value is provided for the redcap_repeat_instrument field for that row of data, it would mistakenly allow the data to be imported without errors, and that data might become orphaned and be inaccessible on certain pages (e.g., Record Home Page, Record Status Dashboard) after the import has completed.
- Bug fix: In certain cases, the left-hand project menu might display the link "View/Edit Records" when instead it should always display the "Add/Edit Records" unless the user does not have "Create Record" privileges.
- Bug fix: When clicking the pencil icon on the Online Designer, it would mistakenly not open the "Add Field"/"Edit Field" dialog if the user was using Internet Explorer. Bug emerged in REDCap 8.8.1 (Standard). (Ticket #51359)
- Bug fix: For certain SFTP server configurations, the system-level feature "e-Consent Framework: PDF External Storage Settings" might mistakenly not save files successfully to the SFTP server.

Version 8.9.0

- New feature: Report Folders - Reports can now be organized into folders in any given project. If a user has "Add/Edit Reports" privileges, they will see an "Organize" link on the left-hand project menu above the project's reports. They will be able to create folders and then assign their reports to a folder, after which the project's reports will be displayed in collapsible groups on the left-hand menu.
- New feature: "Edit Access" for reports - In addition to setting "View Access" when creating or editing a report, users can now set the report's "Edit Access" (under Step 1) to control who in the project can edit, copy, or delete the report. This setting will be very useful if one wishes to prevent certain users from modifying or deleting particular reports.
- New feature: Report search - A new search feature exists on the left-hand menu to allow users to search within the title of that project's reports to help them navigate to a report very quickly.
- Improvement: The Browse Users page in the Control Center now displays a "Can create projects?" column in the user table to indicate if the user has privileges to create or copy a project on their own. This is only available if users in the system are allowed to create/copy projects (as opposed to requesting them be created by an admin).
- Change: Changed the text "Manage Survey Participants" to "Survey Distribution Tools", which more clearly describes the pages in that section.
- Bug fix: Users using certain browsers (e.g., Firefox) on the "Create New Report" or "Edit Existing Report" page would mistakenly be unable to place their mouse cursor into the input fields in Step 2 on that page, thus preventing them from adding new fields to the report using the auto-complete functionality. (Ticket #52055)
- Bug fix: When performing a data import (either via API or via Data Import Tool) in which the first instrument of a record is locked, it would mistakenly prevent the data import from completing, thus resulting in an error, even if the user is not attempting to update values on the first instrument.

- Bug fix: Uploading, editing, or deleting a file in the File Repository of a project would fail if the project's language was set to anything other than the default "English" language. Bug emerged in REDCap 8.7.0. (Ticket #51457)
- Bug fix: The data dictionary import process would fail if any calculated fields in the data dictionary contained Smart Variables in their calculation. (Ticket #51346)
- Bug fix: If using a custom record label in a longitudinal project, in which the custom record label references a field that exists on an event that is not the first event of the current arm, then it might not display the custom record label at all. (Ticket #50733)
- Bug fix: Some cron jobs were mistakenly shifting by a minute or two each day with regard to the time they should be run by the system. They will now be run at the exact minute they are expected to based on their previous run time + their defined frequency to run.
- Bug fix: If a report in a project is created, copied, reordered, or deleted, then on occasion it may mistakenly cause many (or all) of the existing reports to be reordered in a seemingly random fashion. (Ticket #42809)
- Bug fix: When using the Publication Matching module, if REDCap is upgraded to a newer version after an email has been sent to a PI regarding a possible publication match, then the link in the email would not redirect to the correct webpage properly. (Ticket #52023)
- Bug fix: If custom Homepage Announcement text is set for the system and the current user is sponsor of a user, then the custom text would mistakenly not stretch as wide as the My Projects table. (Ticket #51782)
- Bug fix: If a field on a repeating event/form has a specific repeating instance number that is referenced in a calc field or branching logic (e.g., [weight][2] > 150), then even if the specific repeating instance of the event/form exists, it will throw an error on the data entry form or survey page if the field itself does not have a value saved for the repeating instance that is explicitly referenced.
- Bug fix: When using certain non-English languages for the translated text in a project, the title/hover-over text for the repeating survey icon in the Online Designer would mistakenly get truncated. (Ticket #52126)
- Bug fix: When piping data from a repeating event/instrument onto another instrument or event, especially a non-repeating instrument/event, then the PDF download of that instrument with saved data might mistakenly not pipe the data into the labels in the PDF.
- Bug fix: In a multi-arm project using the Scheduling module, opening a record from the Calendar page and then clicking "view schedule" from the calendar popup would load the "View or Edit Schedule" page but might mistakenly not pre-select the record in the record drop-down list on that page.
- Bug fix: When viewing the Browse Projects page in the Control Center, any projects that have been deleted in the past 30 days but have not yet been removed from the system would have a missing status icon on the far right of the projects table. It should instead be displaying a red cross icon for the status.
- Bug fix: If certain Smart Variables (e.g., [survey-queue-link]) are used in the email text of an Automated Survey Invitation, which also uses datediff with "today" or "now" as a datediff parameter, then it would

prevent the ASI+datediff cron job from fully running. Note: This would only affect a small percentage of the total invitations being sent out. (Ticket #51081)

Version 8.9.1

- Improvement: When copying a project, a new checkbox has been added to the Copy Project page to copy "all report folders". In the previous version, it would always copy all reports and report folders if the "all reports" option was checked, but now it allows reports to be copied without copying report folders, if need be.
- Change: Users that do not have "Project Design and Setup" privileges will no longer be able to navigate to or view the Project Setup page in a given project. Since such users cannot effectively perform any actions on the Project Setup page (i.e., everything on the page is disabled), it does not make much sense for them to be able to access it at all. (Ticket #52327)
- Bug fix: When downloading multiple Adaptive or Auto-Scoring instruments from the REDCap Shared Library into the same project, the T-Score field and Std Error field would conflict and thus cause those fields on the subsequent instruments to be renamed, in which it would append random alphanumeric characters to the variable names. This would make it difficult to have the same variable names consistently if all the same instruments were downloaded in different projects.
- Bug fix: If a user enters a value for a datetime field on a form or survey and then immediately removes the value, they would mistakenly be presented with a validation error message, which should not occur. This could cause the user to be stuck in an infinite loop on the page, in which the prompt keeps appearing, thus causing the user to have to reload the page and possibly lose any data entered. (Ticket #52024)
- Bug fix: If using the Data Resolution Workflow in a project, and a user views an open query, it would mistakenly display data values for all fields in the query, even if the user has "No Access" user privileges to that field's data entry form. In this case, it now redacts the data value and instead displays a message stating that the field's value cannot be displayed because the user does not have view access. (Ticket #49956)
- Bug fix: If the REDCap installation has the "Survey Base URL" set on the "General Configuration" page in the Control Center, then if a survey participant is viewing a Survey Queue for a record and then clicks the "Begin Survey" button for a given survey, it would mistakenly send the participant to the the wrong URL, in which it would be using the default "REDCap Base URL" instead of the "Survey Base URL". (Ticket #52502)
- Bug fix: If viewing the Record Status Dashboard in a project where only one arm exists, but the arm is not arm "1" but another number, then clicking the record name link in the dashboard table will mistakenly take the user to the first arm, where the record does not exist. (Ticket #52575)
- Bug fix: If a multi-arm longitudinal project has surveys using Automated Survey Invitations on multiple arms, in which at least one of the ASI's condition logic references a field/event on another arm, then if that ASI condition becomes true for a given record, it would mistakenly schedule the survey invitation

even if the record does not exist on that arm. The record must exist on a given arm before a survey invitation can be scheduled for that arm for that record. (Ticket #52174)

- Bug fix: On the Control Center's System Statistics page, the "Data values pulled from source system via DDP" count for both DDP Custom and DDP on FHIR would mistakenly inflate the true count. This was caused by mistakenly counting temporal values multiple times in longitudinal projects or in projects with repeating instruments/events if the same value was imported into multiple events/instances for a given record. This often depends on the window of time (i.e., day offset) being used, in which a larger day offset value would pull in more duplicate values.

- Change: The alert that is displayed on a survey page or data entry form that notifies the user that an unvalidated text field begins or ends with extra spaces has been disabled so that it no longer notifies users when this occurs. This is due to reports of general annoyance by several users at the feature. This feature may possibly be re-added in the future and modified to be more user friendly, but for now it has been disabled for all projects indefinitely.

- Change/improvement: When importing data via the Data Import Tool, if a CSV data file is re-uploaded on the second page after the initial attempt (e.g., due to errors displayed after the first attempt), it now hides all the error messages on the page after clicking the Upload File button to re-upload the file. Thus it resets the page so that the user does not get confused thinking that the previous errors apply to the current upload if the re-upload process takes a while. (Ticket #52518)

- Change/improvement: When importing data via the Data Import Tool and an error is detected in the data file, the header text of the error message has been changed slightly to prevent confusion so that users more clearly understand that the file was not fully uploaded. (Ticket #52519)

- Bug fix: If a user clicks the "Show plots only" or "Show plots & stats" button on the "Stats & Charts" page in a project, it will mistakenly display the "Download image" button for fields on the page that do not have a graph displayed, in which clicking the button for such fields would cause it to download an unopenable/unviewable PNG file. (Ticket #51565)

- Bug fix: If a field on a repeating event or repeating instrument has branching logic, in which fields in the logic exist on that same repeating event/instrument, then the field might mistakenly not get displayed in the PDF export with saved data.

- Bug fix: If a user's account was suspended due to inactivity and afterward an administrator unsuspending the user using the green "Unsuspend User" button on the Browse Users page under the "View User List By Criteria" tab (as opposed to unsuspending a single user when viewing the user account under the "User Search" tab on that page), then if the cron job that suspends users due to activity gets run before the user logs in to REDCap the next time, the cron job would mistakenly suspend them again. (Ticket #52768)

- Bug fix: Users that do not have "Add/Edit/Organize Reports" privileges in a project would mistakenly see the "Organize" link on the left-hand menu that would allow one to create Report Folders. It should not display the link for users with such user rights. (Ticket #52801)

- Bug fix: If a participant is returning to a multi-page survey that has the "Save & Return Later" option enabled, and the survey exists on a repeating event or is a repeating instrument, then if the current

survey page being opened by the participant is not the first repeating instance of the survey but is a later repeating instance, then it might mistakenly start the participant on the wrong page of the survey to which they are returning. It normally should take them to the page containing the last question having data. (Ticket #50898)

- Change: On the "Add/Edit Records" page for projects in development status, the notice that real data should not be entered into a project while in development has been moved more to the top of the page to make it more prominent as a reminder to users.

Version 8.9.2

- Improvement: A new search utility was added to the top of the "Help & FAQ" page to make finding keywords easier on the page. It allows for multiple word matches and also "exact phrase" matching. When performing the search, all matching questions/answers will be displayed on the page with the keywords being highlighted while non-matching questions/answers will be hidden on the page.

- Improvement: A new "Filter by event" option was added to the Logging page: "Record deleted (only)". This allows users to display only the logged events in which a record was deleted in the project.

- Bug fix: Certain web browsers (e.g., Chrome) would mistakenly be allowed to pre-fill Notes fields on a survey page or data entry form, which might also cause other fields on the page (such as Text fields or Radio button fields) to have values inserted into them as well.

- Bug fix: Under certain conditions when a field on a survey/form is using the @DEFAULT action tag, and the survey/form has already been saved at least once (i.e., does not have gray form status icon), it might mistakenly display the red bar on the right side of the field as if the value has changed even though it has not.

- Change: Upgrading the Font Awesome library to version 5.5

- Bug fix: When downloading certain PROMIS Adaptive or Auto-Scoring instruments from the REDCap Shared Library, viewing a completed survey response on its data entry form might mistakenly display a popup error due to malformed branching logic, specifically for the T-Score field.

- Bug fix: If a user has "De-Identified" or "Remove all tagged Identifier fields" privileges and then exports a PDF of a form with saved data, then any multiple choice fields that are tagged as an Identifier field would still have all their choices displayed, although it would not display which choice was selected, which is confusing because it appears as if the field has a blank value rather than having its value redacted due to user privileges. In this situation, it now no longer displays the field choices but instead says "[*DATA REMOVED*]" so that the user understands that the saved value was removed from the PDF.

- Change: Data Quality rules A and B have always ignored checkbox fields. But since a checkbox field can be set as "required", in which it produces an error message if no checkbox option is checked, then DQ rule A and B appear to be inconsistent with regard to whether a checkbox field can truly be empty/blank. To make these consistent when interpreting the missingness of checkbox fields, DQ rules

A and B will no longer ignore checkboxes but will return discrepancies for a checkbox if it has no options checked. (Ticket #53120)

- Bug fix: When exporting the PDF of saved data (all records) on the Other Export Options tab on the "Data Exports, Reports, and Stats", if any data is being piped into a field note, field label, etc., it would mistakenly pipe the values from the first record into the text of all the subsequent records in the PDF.

- Bug fix: Certain popup alert boxes would mistakenly not get displayed in the proper place on the page. This includes the "Value removed!" alert for matrix ranking, the "Cannot select choice!" alert when using @MAXCHECKED on a checkbox field, and all field auto-suggest boxes that are displayed when typing into a text box for ASI conditional logic, Data Quality rule logic, advanced filters for reports, etc.

Version 8.9.3

- Change/improvement: When composing a survey invitation on the Participants List page or via Survey Options on a data entry form, the "From"/sender drop-down list now displays all the email addresses (primary, secondary, and tertiary) of all users in the project, which is how the setup dialog for Automated Survey Invitations has always behaved. In previous versions, these two places would only allow the user to choose from the current user's email addresses as the "From"/sender address. This provides more flexibility, and establishes greater consistency between all the interfaces for scheduling survey invitations.

- Major bug fix: If a slider field on a data entry form has a value set, and then the user clicks the balloon icon next to any field to open the Field Comment Log popup, it would mistakenly set the slider value to 50, sometimes unbeknownst to the user. This does not occur on survey pages but only data entry forms. (Ticket #53371)

- Improvement: If a REDCap cron job fails to complete (often due to a fatal PHP error), it will now send an email to the REDCap Administrator (using the email address listed on the General Configuration page in the Control Center) to inform them of this error. The email will note which cron job failed and when, as well as the details of the PHP error itself. This should help some folks troubleshoot issues if this ever occurs. (Ticket #19260)

- Bug fix: If a user is viewing a project's Record Status Dashboard in which some records has been assigned to Data Access Groups, then under certain rare conditions (e.g., users bookmarking a link to the RSD after a DAG has been deleted in the project) users might not see all the records on the RSD anymore, which could be confusing. (Ticket #53335)

Version 8.10.10

- Change: Survey responses that were completed using the e-Consent Framework will no longer be editable (this includes no editing on data entry forms, surveys, Data Import Tool, API, and Mobile App). In previous versions, completed e-consent surveys were editable.

- Bug fix: After adding fields to a report via the "Quick Add" dialog popup on the "Data Exports, Reports, and Stats" page, those new fields would mistakenly not be draggable afterward if the user wishes to move a field to another position in the report.
- Bug fix: For certain server configurations related to PHP's decoding of HTML entities, the Survey Settings page might not be able to properly store or display the survey instructions text or the survey completion text if they contain certain non-Latin characters.
- Bug fix: Users would mistakenly be allowed to use the @DEFAULT action tag for Signature fields and File Upload fields. This can cause synchronicity issues of a single file being associated with multiple fields, and thus should not be allowed. It will now ignore the @DEFAULT action tag if used for such fields.
- Bug fix: When viewing the Draft Mode production changes page in a project, if the project had been initialized in the REDCap Mobile App, then it would mistakenly give the warning "Please note that they *may* be affected by these changes and may not be able to successfully imported their data from the app afterward..." even though no current users have Mobile App user privileges anymore. It should only be displaying the warning if at least one person in the project still has Mobile App privileges and has initialized the project in the app at some point in the past.
- Bug fix: When exporting data via the "Export Records" API method with type="eav" and providing Filter Logic as a parameter in the API request in which no records should be returned based on that filter logic, it would mistakenly return all records instead.
- Change: When granting a user access to a project via the User Rights page, in which the "notify user via email" checkbox is checked, it now includes a link directly to the project in the resulting email to the user, whereas previous versions only included a link to the main REDCap home page.

Version 8.10.11

- Improvement: New options added to Secondary Unique Field functionality - In the "Additional Customizations" popup on the Project Setup page, users may now choose to optionally display the Secondary Unique Field's value in conjunction to displaying a record name on various project pages (in previous versions it was always displayed regardless). If left unchecked, the uniqueness of the value will still be checked during data entry or import, but the Secondary Unique Field's value will not be displayed next to the record name anywhere (e.g., in record lists, record status dashboards, reports). A second option has also been added that dictates whether or not the field label of the Secondary Unique Field will be displayed next to the value (if the value is set to be displayed next to a record name).
- Change/improvement: The "Help & FAQ" page was updated with new content.
- Change/improvement: Super API Tokens can now be used for the "Export REDCap Version" API method. In previous versions, only project-level API tokens could be used for this method. This will allow users to be able to obtain the REDCap version number outside the context of a project.
- Change: Dashes/hyphens can now be used as the raw coded value for multiple choice fields.

- Bug fix: When clicking the "Close Survey" button after completing a survey, in certain cases REDCap will not be able to close the tab, and certain browsers might mistakenly redirect the user to the page where survey access codes are typically entered. (Ticket #54305)
- Bug fix: The "Test URL" buttons have been removed from the "DDP on FHIR" page in the Control Center because they did not work most of the time, thus giving administrators the impression that the URL entered was incorrect.
- Bug fix: When the system is performing the back-end process of caching a record list in a project, if a record name contained a special character, it might cause the record list caching process to silently fail. This would go unnoticed, with the exception of viewing a specific Data Access Group's records, in which it would mistakenly display all records in the project rather than just the records assigned to that DAG.
- Bug fix: When an administrator is viewing the "API Tokens" page in the Control Center or the "Manage All Project Tokens" tab on a project's API page, the "Last Used" column for a given user might mistakenly display "Never" instead of the last time the user made an API request for the project. This appears to occur due to a case sensitivity issue with the username, in which the case of the user seen on the Browse Users page in the Control center does not exactly match the case of the username with which the user logged in or with which the user is listed on the project's User Rights page. (Ticket #54748)
- Bug fix: The auto-logout warning displayed to the user after a period of inactivity on a page would mistakenly display the wrong text after their session has officially expired. Once expired, it would mistakenly say "You will be automatically logged out of REDCap in 30 SECONDS due to inactivity..." when instead it should say "Due to inactivity, your REDCap session has expired...". It was displaying the 30-second warning twice. (Ticket #54746)
- Bug fix: When using the "Preview" and "Test email" functionality when composing a survey invitation in a multi-arm project, if any fields are being piped into the email, in which the field being piped is prepended with the unique event name of an event from an arm other than specifically Arm 1, then it mistakenly would not replace the field with the text "PIPED DATA" as expected but would instead replace it with "_____". (Ticket #54559)
- Bug fix: When creating a new record in a non-longitudinal/classic project that only contains one data collection instrument, if the user clicks the Cancel button on the data entry form before saving/creating the record, it would mistakenly just reload that form rather than redirecting the user back to the "Add/Edit Records" page. (Ticket #54752)
- Bug fix: When calling the API Method "Export Project XML", it might mistakenly not include all files from File Upload and Signature fields even though the exportFiles parameter had been set to TRUE (assuming that returnMetadataOnly=FALSE). (Ticket #54301)
- Bug fix: When calling the API Method "Importing Repeating Instruments and Events" for a classic/non-longitudinal project, it would mistakenly return an error stating that the event name was not included in the request. The event name is actually not required when using this method for classic/non-longitudinal projects.
- Bug fix: When viewing a record on a data entry form in a project that contains one or more repeating instruments, it would mistakenly only display the number of repeating instances of a form on the left-

hand instrument menu if the user was currently viewing any form that had been set as a repeating instrument. It should always display the number of repeating instances next to each repeating instrument on the left-hand menu for a given record. (Ticket #54846)

- Bug fix: When viewing a record on a data entry form in a project that contains one or more repeating instruments, for all repeating instruments displayed on the left-hand instrument menu, it would mistakenly display the form status stack icon representing the status color of the first instance of the repeating instrument rather than displaying an icon representing all the instances (e.g., red stack icon representing all instances having "complete" status, blue stack icon representing mixed status types). This excludes the icon displayed for the currently selected form/instance, which was correctly displaying the form status icon of the currently viewed repeating instance. (Ticket #54846)

- Bug fix: When using the data search feature on the "Add/Edit Records" page in a project, in which no results are returned from a given search, in some cases the "Searching..." text might mistakenly still be displayed afterward (instead of the text being hidden), thus incorrectly implying that the search has not yet finished. This could be confusing and mislead the user. (Ticket #54818)

- Bug fix: When using an SQL field that contains a comma in the results for the data values that are returned from the SQL query, after selecting and saving an option with a data value that contains a comma, it will save the value correctly but in certain cases may mistakenly cause the value to not get pre-selected when a user returns later to the form, which could cause a blank value to mistakenly overwrite the saved value unbeknownst to the user if the form is saved again. (Ticket #54988)

- Bug fix: If a project's metadata is exported via the Project XML file, in which a multiple choice field contains an HTML break tag (
) in its choice option label, then if a new project is created from the XML file, it might mistakenly add extra choices to that field if any text exists after the HTML break tag for a given choice. (Ticket #55122)

- Bug fix: The "record" column in the table on the Survey Invitation Log page would mistakenly not wrap the record name and thus would truncate longer record names displayed in that column.

Version 8.11.0

- New feature: The "Survey Link Lookup" external module was integrated into REDCap

- This feature allows administrators to take a survey URL and find and navigate to the corresponding project, survey, record and data entry form. The Survey Link Lookup page is located under the "Projects" section on the left-hand menu in the Control Center.

- If this external module was already enabled on the REDCap installation, it will automatically be disabled during the upgrade process to prevent any possible conflicts.

- New feature: The "Sticky Matrix Header" external module was integrated into REDCap. This feature will cause matrix headers to float and stick to the top of a page on either a survey or data entry form so that the matrix headers are always visible, which is helpful for matrices with many rows. If this external module was already enabled on the REDCap installation, it will automatically be disabled during the upgrade process to prevent any possible conflicts.

- New feature: The "Codebook Concertina" external module was integrated into REDCap. This feature will display Expand and Collapse buttons for each instrument listed on the Codebook page in a project. If this external module was already enabled on the REDCap installation, it will automatically be disabled during the upgrade process to prevent any possible conflicts.
- Improvement: When enabling an instrument as a survey or editing an existing survey's survey settings, it now displays a "Save Changes" button at the top of the page (next to the Cancel button) so that the user does not necessarily have to scroll all the way to the bottom to submit the page.
- Change: PHP 5.5 is now the minimum required PHP version. In previous versions, the minimum required PHP version was PHP 5.3.
- Change/improvement: When viewing a survey response on a data entry form that had been completed using the E-consent Framework, users with Record Locking privileges will now be able to Lock and E-sign the instrument. Previously in all versions of REDCap version 8.10.X, the entire instrument was read-only, including the Locking and E-signature options. (Ticket #54874)
- Change/improvement: The Custom Record Label and Secondary Unique Field values are now displayed with the record name in the table on the "PDF Survey Archive" tab in the File Repository if the "PDF Auto-Archiver" is enabled for one or more surveys in a project. In previous versions, it did not display them next to the record name.
- Change: For projects in production, the settings on the Record Locking Customization page can now be edited by any user that has "Record Locking Customization" privileges in the project. In previous versions, only REDCap administrators could modify this page's settings while in production. This change will alleviate the burden of administrators for many production projects needing to make changes on this page.
- Bug fix: When viewing an individual user on the Browse Users page in the Control Center, if the user is a Table-based authentication user and their secondary or tertiary email address has not yet been verified, then it would mistakenly not display the buttons to auto-verify the address or re-send the verification email to the user. This only occurs if the user is a Table-based user.
- Bug fix: When a form or survey is submitted, in which there do not exist any fields on the instrument that are used in a calculated field anywhere in the project, then it would mistakenly trigger the calculation of all calc fields in the project. It should instead only trigger calculations if a field being submitted is used in a calculation. (Ticket #55192)
- Bug fix: The "Export Survey Participants" API method would mistakenly not include some participants in the resulting API response if those participants had not first been viewed by a user either on the Participant List page or on the data entry form for the survey instrument that was passed as a parameter in the API request. Once a user had viewed the data entry form or Participant List for that instrument, the participants would then appear in the API export. (Ticket #55517)
- Bug fix: When creating a project and selecting the option to upload a REDCap Project XML file, if the user fails to upload an XML file and then clicks the "Create Project" button, it would mistakenly create an empty project. It should instead give a warning to the user to upload an XML file and prevent the user from submitting the page. (Ticket #55731)

- Bug fix: When a user makes a request to an administrator that a project be copied, it would mistakenly not check off some of the checkboxes on the Copy Project page when the administrator loads the page via the link in the email or via the To-Do List. This includes the following options: All report folders, All data quality rules, All project bookmarks, and All custom record status dashboards. (Ticket #55751)
- Bug fix: When attempting to rename a record to "0" on the Record Home Page, it would fail and return an error message to a user. (Ticket #55723)
- Bug fix: When using the Smart Variables form-link, form-url, survey-link, or survey-url to create links/URLs either to or from a repeating instrument or repeating event, it might mistakenly add the instance number of the current context to the URL when instead it should evaluate whether or not the instance number makes sense to be added to the target URL. (Ticket #54776)
- Change: The System Statistics page in the Control Center would load very slowly for large installations, especially if they had DDP Custom or DDP on FHIR enabled. The page has been reconfigured to fetch all DDP-related stats asynchronously.
- Bug fix: When adding/editing/deleting a Report Folder or assigning/unassigning a report to a Report Folder and then closing and re-opening the Report Folder popup, the user would mistakenly no longer be able to perform any actions inside that popup (as if its elements were locked). (Ticket #55878)
- Bug fix: When creating/editing a record on a data entry form, in which the record name contains a forward slash or back slash, it may cause a Data Quality rule with Real Time Execution not to get triggered correctly or cause the Required Field popup alert not to display correctly. (Ticket #56093)
- Bug fix: If a participant partially completes a survey using the "Save & Return Later" feature, in which there is no email address associated with that participant (either via the participant list or via the designated survey email invitation field), then the page that gets displayed immediately after clicking the "Save & Return Later" button might mistakenly display the text "You have just been sent an email containing a link for continuing the survey" for a moment and then suddenly disappear, which could be confusing.
- Bug fix: When inline images are used for Descriptive fields on a survey or form, then if the user is viewing the page on a mobile device and the image's native width is smaller than the width of the page, it would mistakenly not resize it correctly and would make it too small on the page. It now makes the image wider on the page for better viewing of it.
- Bug fix: When printing a page in the Control Center, the left-hand menu would mistakenly not be removed from the print-out when using Firefox. (Ticket #56340)
- Bug fix: The "Announcement text to display at top of Home page and My Projects page" would mistakenly not get displayed at the top on the REDCap Home Page if the "Additionally display text on login page?" option is set to "No". (Ticket #56618)
- Bug fix: If the biomedical ontology auto-suggest functionality is disabled as the system level, it would mistakenly prevent users on the Online Designer from setting a min or max limit for a Text field in the "Add Field"/"Edit Field" popup. (Ticket #56499)

- Bug fix: When entering a number- or integer-validated text field on a form or survey on an Android device, it would mistakenly open the full keyboard when typing in the field rather than displaying a more appropriate number-centric keyboard. (Ticket #56447)
- Bug fix: When entering a number-validated text field on a form or survey on an iOS device, it would mistakenly open the full keyboard when typing in the field rather than displaying a more appropriate number-centric keyboard.
- Bug fix: "event_id" was mistakenly not listed as a reserved field name to prevent users from using it as a field's variable name. (Ticket #56627)
- Bug fix: When an administrator is approving a "Move project to production" request on the To-Do List page, the To-Do List popup would mistakenly not automatically close after the request was approved or if the admin clicked Cancel to close the request. (Ticket #56457)
- Bug fix: When using the @MAXCHECKED action tag for a checkbox field, if a user clicked on the checkbox's label (rather than on the checkbox itself), it would appear to keep the checkbox unchecked if the @MAXCHECKED limit has been reached, but it would mistakenly save the checkbox as checked. (Ticket #56658)
- Bug fix: For specific screen widths, the nav items at the top of the page on the Home page, My Projects page, etc. would mistakenly not be visible.
- Bug fix: When performing a data import in projects with repeating instruments or repeating events, the "redcap_repeat_instance" field could mistakenly be imported with a value of "0", which should never be allowed because it must always be an integer larger than "0". (Ticket #28842)
- Bug fix: If a required field is changed to be a Descriptive field, it would still mistakenly display the "must provide value" text below the Descriptive field's label on a survey page or data entry form. (Ticket #56719)
- Bug fix: After selecting the "Export Reports" API method in the API Playground, the "Report ID" drop-down list would mistakenly not get rendered correctly, thus preventing users from utilizing it on that page. (Ticket #56707)
- Bug fix: When using the survey-link or survey-url Smart Variable in the email message for an Automated Survey Invitation, in which the instrument name is appended to the Smart Variable (e.g. [survey-link:survey_2]), then if the appended instrument name is different from the survey instrument for the current ASI, it would mistakenly replace the Smart Variable with the link to the current ASI survey rather than with the explicitly specified one. (Ticket #55400)
- Bug fix: When using the first-event-name or last-event-name Smart Variable in branching logic or in a calculated field, in certain cases it might not get interpreted correctly, thus mistakenly resulting in a branching logic error message on a survey page or data entry form. (Ticket #56583)
- Bug fix: When setting the conditional logic for an Automated Survey Invitation in a longitudinal project, if any fields are prepended with the Smart Variable [event-name], it would cause the ASI not to send the invitation if step 2 had the "Ensure logic is still true before sending invitation?" option selected while Step 3 was set to "Send immediately". (Ticket #55919)

- Bug fix: When setting the conditional logic for an Automated Survey Invitation in a longitudinal project, if any fields are prepended with the Smart Variable [event-name] and the user selected a record from the "Test logic with a record" drop-down, it would mistakenly return "False" even when the condition is actually True.

- Bug fix: When setting the branching logic for a field in the "Add/Edit Branching Logic" popup on the Online Designer, if a user selected a record from the "Test logic with a record" drop-down, it would mistakenly return "False" even when the condition is actually True. (Ticket #56623)

- Bug fix: When a repeating instrument is being used as a survey and is being displayed in the Survey Queue, then it may mistakenly display the text "All surveys in your queue have been completed" on the Survey Queue if only 6 surveys have been completed in the queue (including all instances of the repeating survey), which could be confusing to respondents who might want to keep taking the repeating survey. Since a repeating survey is by definition open-ended and can be taken over and over again without end, the Survey Queue should never state "All surveys in your queue have been completed" if the queue contains at least one repeating survey. (Ticket #56540)

Version 8.11.11

- Bug fix: If running REDCap on PHP 5.5, the Online Designer page would mistakenly not load. Bug emerged in REDCap 8.11.0. (Ticket #56859)

Version 8.11.2

- Major bug fix: When a project is using a public survey that has "Save & Return Later" enabled with "Allow respondents to return without needing a return code" enabled, then if a participant clicks the "Save & Return Later" button on the public survey and leaves the survey open on the "Your survey responses were saved!" page while another participant partially or fully completes the survey, and then if the original participant clicks the "Continue Survey Now" button on the "Your survey responses were saved!" page, then the original participant will mistakenly have the other participant's response loaded for them on the survey page.

- Change/improvement: When using the e-Consent Framework, a new option was added to the Survey Settings page: "Allow e-Consent responses to be edited by users?". If left unchecked (default), then users will not be able to edit a completed e-Consent response (although it can be locked or e-signed by a user with locking/e-signature privileges). If the setting is checked, then users will be able to modify the survey response so long as they have "Edit survey responses" privileges for that survey instrument. Note: If the e-Consent survey response is modified after being completed, this will not affect the e-Consent PDF file that was stored in the File Repository.

- Change/improvement: In the popup dialog for moving a project to production, it now displays the number of records in the project to help the user decide if they wish to keep all data or have all records deleted when moving to production.

- Bug fix: When a user selects to display "ALL" records on the Record Status Dashboard in a project containing a large amount of records, if the page ends up crashing due to too many records being displayed, then the user would mistakenly never be able to view the Record Status Dashboard again without it crashing (because it remembers to show all records the next time the page is visited). (Ticket #56662)

- Bug fix: If a calc field utilizes Smart Variables in its calculation, and a user performs a data import or executes Data Quality rule H, then other calculated fields in the project might have their value mistakenly set as the calculated result of the other calc field, thus overwriting the correct value of that other calc field. This is rare but can occur in specific situations depending on the structure of the project and the order of the calc fields involved. (Ticket #56731)

- Bug fix: If the Data Resolution Workflow is enabled in a project, then incorrect language is displayed inside the "Data Quality rules were violated!" popup on a data entry form whenever a Data Quality rule has "real time execution" enabled.

- Bug fix: When viewing the Field Comment Log popup on a data entry form, if the username in the User column is very long, it would mistakenly not wrap in the table but instead would overflow into the next column.

- Bug fix: When a user attempts to access a REDCap project that has been set to "Offline" on the "Edit a Project's Settings" page by an administrator, it would mistakenly display the default system-offline message rather than the project-offline message. (Ticket #56938)

- Bug fix: Certain project pages might not display correctly on tablets (causing the main right-hand window to display below the left-hand menu), especially if the project's language is set to a non-English language. (Ticket #56872)

Version 8.11.3

- Improvement: When copying a project, there are now separate options for copying users and/or user roles. In previous versions, these were combined as a single choice "Copy users and roles", but now users may decide to copy one or the other. (Ticket #36687)

- Bug fix: If an individual project was set to "Offline" status by an administrator, any survey invitations in that project that had been scheduled to send would mistakenly still send. Invitations should not be sent out unless the project is in "Online" status. (Ticket #57045)

- Change: If the current date or current timestamp is used in the REDCap upgrade script with regard to storing the date of the upgrade and when setting the send-time of system notifications via Messenger, it will now use the database's date and time at the time of the SQL script execution instead of the hard-coded values generated by the web server on the Upgrade page. (Ticket #57079)

- Bug fix: If upgrading from 8.11.0 or 8.11.1 to 8.11.2, it would mistakenly provide some SQL to fix database errors after completing the upgrade. (Ticket #57103)

- Bug fix: Many API requests would mistakenly return a "503" HTTP status code error on certain errors when it should instead return a "400" error.

- Bug fix: When downloading a PROMIS Battery from the REDCap Shared Library, it would mistakenly not display the battery survey pages according to the PROMIS guidelines, in which the battery title should be displayed on every page (not the title of each individual assessment) and that the survey instructions are only seen on the first assessment of the battery. This will only affect batteries that will be downloaded in the future from the Shared Library. Also, although these particular title and instructions settings will be set when a battery is downloaded, it will always be possible for a user to modify the title and/or instructions afterward, if they wish (though it is not preferred).
- Bug fix: When a participant completes a PROMIS adaptive survey or PROMIS auto-scoring survey that finishes after only one question, it might mistakenly not save the survey completion time of the survey response.
- Change: Added a link to the Codebook page on the Data Import Tool instructions to allow users to more easily find the raw coded values for multiple choices fields that they wish to import.
- Bug fix: The last column in the Participant List table might not be displayed fully. (Ticket #57184)
- Bug fix: When selecting to view Report B on the "Data Exports, Reports, and Stats" page for a longitudinal project, if the report is displayed as a multi-page report and specific events have been selected as a filter by the user, then if the user selects another report page to view using the page drop-down selector, it would mistakenly lose the event filter for the report (because the "events" parameter would not get included in the URL) and thus would display rows from every event on the page. (Ticket #57254)
- Change: The "Survey Settings" page in the Online Designer now gives slightly more emphasis to the "e-Consent Framework" feature to make it easier for users to find it on the page.
- Bug fix: If a Custom Record Status Dashboard has filter logic that references fields from a repeating instrument, it might mistakenly return an empty set, thus resulting in a dashboard with no records displayed, when it is known that some records should be displayed. Bug emerged in REDCap 8.11.2 (Standard). (Ticket #57234)
- Change: When a user clicks the "Help & FAQ" link on a project's left-hand menu, it will now load the "Help & FAQ" page in a new window to prevent the user from losing their current page context in the project as they view the "Help & FAQ" page.
- Bug fix: When editing the project title, purpose, etc. in the Modify Project Settings popup on a project's Project Setup page, if Research is selected for Purpose, then the fields for entering the Name of the P.I. would mistakenly not wrap together, thus leaving the last name field on a row by itself. (Ticket #57417)
- Bug fix: When exporting Report B (i.e., without creating a new report from the selections of Report B) on the "Data Exports, Reports, and Stats" page, if a specific instrument is not selected but "All instruments" are left selected, it might mistakenly not list any fields in the resulting stats package syntax file (for R, SAS, Stata, SPSS), thus preventing the exported data from loading properly in the stats package.

- Bug fix: After the initial schedule is generated for a record on the Scheduling page, if the user modifies one of the dates in the schedule so that it is the same as the maximum date or minimum date (if a min/max is set for an event), then on certain occasions it would mistakenly display a popup saying that the new date is out of range when in fact it is not.
- Bug fix: When there exist a lot of branching logic and several matrices of fields together on a survey page or data entry form, the page will inevitably get slower and slower as more and more branching logic gets triggered on the page during data entry. This could eventually cause the page to ultimately become unresponsive in certain situations. Bug emerged in REDCap 8.11.0. (Ticket #58019)
- Bug fix: Several project pages might appear too narrow for specific screen sizes. Bug emerged in REDCap 8.11.2.
- Bug fix: Updated an outdated item on the Help & FAQ page regarding how often the ASI cron job runs (Ticket #58205).
- Bug fix: When using the @DEFAULT action tag to have a date/datetime field reference itself from a previous repeating instance on a repeating instrument, it would mistakenly not pipe in the value correctly on the first instance of that instrument, thus mangling it with a value of "[]" or "00-00-0000" or other non-sensical value. (Ticket #17157)
- Bug fix: When using the Data Resolution Workflow in a project and opening a data query on a field on a data entry form, the floating Save button that appears next to the field when the field is selected was mistakenly not being displayed in the correct location on the page. (Ticket #57905)
- Bug fix: For specific server configurations and project sizes, the project Logging page might take an exorbitant amount of time to load when initially loading the page. (Ticket #58251)
- Bug fix: When importing data where the field "redcap_repeat_instance" has a numerical value but the current event/form in the data (i.e., CSV row) does not exist on a repeating instrument or repeating event, it would mistakenly allow the data to be imported, but the imported data would immediately be orphaned since that data would not be accessible in the user interface. It now gives an error for this situation. (Ticket #57699)
- Bug fix: When calling the API method "Export Survey Participants" while utilizing the designated survey email field in the project, it would mistakenly omit the values for the participant's email address or record name in the API response. (Ticket #58349)
- Bug fix: When calling the API Method "Export Records" with the "format" parameter set to "odm", it would mistakenly not include all files from File Upload and Signature fields, which are expected to be base64-encoded inside the ItemDataBase64Binary tags in the resulting XML. (Ticket #54301)
- Bug fix: On the To-Do List page in the Control Center, if an administrator clicks the icon to add a comment to a To-Do List item, the "Submit" button in the resulting popup displayed would not be sized or positioned correctly. (Ticket #54301)

- Bug fix: When there exist a lot of branching logic and several matrices of fields together on a survey page or data entry form, the page will scroll very slowly for the user. Bug emerged in REDCap 8.11.0. This issue was improved upon in the previous version but still existed for instruments with many hundred fields or more. (Ticket #58443)
- Bug fix: When downloading the CSV file of Automated Survey Invitations on the Online Designer, the file's filename might mistakenly begin and end with an apostrophe, thus preventing it from being opened correctly on the user's computer. (Ticket #58445)
- Bug fix: If a matrix of fields exists on a data entry form, then the matrix's floating headers might mistakenly get partially obscured by the floating box of Save buttons that appear at the top right of the page. (Ticket #58484)
- Bug fix: When importing data where the field "redcap_repeat_instance" has a numerical value but the current event/form in the data (i.e., CSV row) does not exist on a repeating instrument or repeating event, it would mistakenly allow the data to be imported, but the imported data would immediately be orphaned since that data would not be accessible in the user interface. It now gives an error for this situation. This issue was supposedly fixed in the previous version, but mistakenly in the previous version it would sometimes display a false positive for this issue and return the error under legitimate circumstances. (Ticket #57699)
- Bug fix: The example Java code generated by the API Playground for the "Export Records" API method contained an error. (Ticket #58488)
- Bug fix: Some specific PROMIS assessments that are downloading from the REDCap Shared Library as part of a battery might be mistakenly labeled as "Auto-scoring" or "Adaptive" in the Online Designer after being downloaded when such instruments are actually neither "Auto-scoring" nor "Adaptive". (Ticket #58488)
- Bug fix: If using the Survey Auto-Continue feature to continue to a survey that is a repeating survey instrument, if any repeating instances have already been created for that repeating survey, then after completing the first survey, it would mistakenly say that the repeating survey has already been completed. It should instead advance the respondent to the next available repeating instance of the repeating survey so that a new repeating instance can be added via survey. (Ticket #58624)
- Bug fix: When exporting an Project XML file containing data from a project, if any text field values contain ASCII control codes, it would mistakenly prevent the data from being restored completely in the new REDCap project being created. (Ticket #34968)
- Bug fix: When downloading the Project XML file (metadata only) for a project, it might mistakenly begin and end the XML filename with an apostrophe.

Version 8.11.6

- Bug fix: Incorrect text was displayed in the Edit User popup on the User Rights page that mistakenly referenced "Clinical Data Pull" instead of "DDP" in projects with DDP Custom enabled.

- Bug fix: If a survey that has Survey Auto-Continue enabled is a repeating instrument and is then followed by another survey that is a repeating instrument, then if respondent completes the first survey, it will mistakenly take them to repeating instance #2 of the following survey, thus skipping over instance #1.
- Bug fix: When using the Data Resolution Workflow, the Resolve Issues page might mistakenly display negative counts for certain data query statuses.
- Bug fix: When importing data where the field "redcap_repeat_instance" has a numerical value but the current event/form in the data (i.e., CSV row) does not exist on a repeating instrument or repeating event, it would mistakenly allow the data to be imported, but the imported data would immediately be orphaned since that data would not be accessible in the user interface. It now gives an error for this situation. This issue was supposedly fixed in the previous version (and the version before that), but mistakenly it would sometimes display a false positive for this issue and return the error under legitimate circumstances, specifically when only checkbox fields were being imported (not including the record ID field, event name, or repeat fields). (Ticket #57699)
- Bug fix: When using the Data Resolution Workflow in a project and opening a data query on a field on a data entry form, the floating Save button that appears next to the field when the field is selected was mistakenly not being displayed in the correct location on the page if the field, specifically when navigating from a link on the Resolve Issues page for a radio button field. (Ticket #59373)
- Bug fix: When using the "Test logic with a record" feature when setting up an Automated Survey Invitation, on certain occasions it might return an incorrect response. (Ticket #59030).
- Bug fix: The HTML character code " " might mistakenly get displayed in the text of PDFs downloaded for an instrument but only if downloading the blank PDF (without data). (Ticket #58790)
- Bug fix: When using the Randomization module with strata fields, in which one or more strata fields exist as part of a matrix of fields, it would mistakenly cause a JavaScript error to occur on the data entry form where the strata fields are located, thus preventing the form from being saved successfully. (Ticket #59639)
- Bug fix: The field count for projects on the My Projects page was mistakenly not including Descriptive fields. This could be confusing for users. It now includes all fields in the field count now. (Ticket #60004)
- Bug fix: When performing piping of a field with the Smart Variable [next-event-name], [previous-event-name], or [event-name] prepended to the field variable, it would sometimes mistakenly not perform the piping at all. (Ticket #44559)

Version 8.11.7

- Bug fix: Some data exports were not getting correctly logged as "Data Export" on the project logging page, specifically when downloading PDFs with data and downloading an "exported data file" or an "exported syntax file". It now lists "Data Export" as the proper Action for these events and also displays them when filtering the logging page by event="Data Export". (Ticket #59278)

- Bug fix: When updating the value of the Secondary Unique Field or the designated survey email field for a project that is either longitudinal or has repeating events/forms, it would mistakenly not log the value change across all events/instances as it should since a new value for those fields gets propagated to every event/instance in the project to keep them all in sync. They now all get logged as separate logged events, which allows the value to always appear in the Data History widget on the data entry page. (Ticket #59586)

- Bug fix: When performing piping of a field with the Smart Variable [X-instance] appended to the field variable, it would sometimes mistakenly not perform the piping at all. (Ticket #59671)

- Bug fix: When performing piping of the Smart Variable survey-time-completed or survey-date-completed with the parameter ":value" appended to the end of it, it would mistakenly throw an error on a survey or data entry form if it was being used in branching logic or in a calculated field. (Ticket #59885)

Version 8.11.8

- Major bug fix: When using Smart Variables in the conditional logic of an Automated Survey Invitation, in which the logic also contains a datediff function using "today" or "now" as a parameter in the function, it would often cause the ASI cron job to not correctly parse the logic and thus not schedule the invitations at the correct time, or it might mistakenly cause the cron job to crash unexpectedly without finishing scheduling all other ASIs for other surveys.

- Bug fix: When using branching logic or a calculation that contains a X-event-name or X-instance Smart Variable connected, in which it references an event or instance that does not exist (e.g., [previous-event-name] while on the first event), it would not fail gracefully but would mistakenly display an error message saying that the logic/calculation is incorrect.

- Bug fix: When completing an Adaptive survey or Auto Scoring survey from the REDCap Shared Library, the "redcap_survey_complete" hook would mistakenly not pass a value for the "record" and "response_id" parameters in the hook. (Ticket #60668)

- Bug fix: If a multi-page survey contains a matrix of fields, in which those fields are used in branching logic or in a calculation on another page on that survey, it would mistakenly display the matrix fields on the survey page containing the fields that reference them in their logic/calc. (Ticket #61134)

- Bug fix: If a multi-page survey contains a page in which every field on the page is a Descriptive field and also has branching logic, it would mistakenly always skip the page regardless of whether all the fields were hidden by branching logic.

- Bug fix: When the redcap_survey_identifier field is displayed in a report or data export, it would mistakenly only display the participant identifier value on the first event of a given record and would not display it if the first instrument was a repeating instrument. It now always displays the participant identifier value in the redcap_survey_identifier column of a report/export for every row/item for a given record. (Ticket #59811)

- Bug fix: The code for generating the Survey Queue setup table was mistakenly referencing variables that had not been defined. However, this did not affect anything. (Ticket #61030)

- Bug fix: If the setting "Auto-suspend users after period of inactivity" is enabled, and some users who are suspended have not had any activity within the designated period of inactivity, then if the user has a sponsor and the user's sponsor puts in a request to have them unsususpended, the user would mistakenly get re-suspended within a day. (Ticket #58909)
- Bug fix: If a normal user is copying a project and is also in a User Role, it would mistakenly not give them their current role's privileges in the new project but instead would give them the privileges that they had before being put into a role in the copied project. (Note: The user will always be removed from the user role in the new project and will always be given User Rights and Project Setup/Design Privileges.) (Ticket #55767)
- Bug fix: If an administrator is viewing the table of users on the Browse Users page, if they check the checkbox next to a user and then click the "Fetch for selected" link (under "Time of latest password reset"), it would display an erroneous error message about no users being selected if all the selected users are suspended. It should instead work for all table-based users regardless of whether the users are suspended or not. (Ticket #60625)
- Change: The form status field on a data entry form has a blank drop-down option which serves no purpose. The blank option has been removed. (Ticket #60849)
- Bug fix: When exporting an Project XML file containing data from a project, if any multiple choice option labels contain ASCII control codes, it would mistakenly prevent the data from being restored completely in the new REDCap project being created. (Ticket #34968)
- Change: The Configuration Check page in the Control Center now ensures that the REDCap server can communicate with the Google reCAPTCHA API service, if enabled. (Ticket #60764)
- Bug fix: Fixed a page layout issue that occurred at specific page widths. (Ticket #60317)

Version 8.11.9

- Major bug fix: The DateDiff+Today/Now cron job would sometimes crash due to a fatal PHP error caused when processing the [survey-link] Smart Variable in the message of an Automated Survey Invitation. This would occur only under very specific conditions, and it would result in many projects/records not having their ASI datediff logic being processed, thus the ASI's survey invitations would not get successfully scheduled in these cases and might cause invitations from other unrelated projects not to get scheduled either. (Ticket #61346, #61213)
- Major bug fix: When a project is using a public survey that has "Save & Return Later" enabled with "Allow respondents to return without needing a return code" enabled, then if a participant clicks the "Save & Return Later" button on the public survey and leaves the survey open on the "Your survey responses were saved!" page while another participant partially or fully completes the survey, and then if the original participant clicks the "Continue Survey Now" button on the "Your survey responses were saved!" page, then the original participant will mistakenly create a brand new record/response whenever they submit survey page again after returning. (Ticket #61764)

- Improvement: Added links to "select all" or "deselect all" for the checkbox options on the "Copy Project" page.
- Bug fix: When viewing the Field Comment Log popup on a data entry form, if the username in the User column is very long, it would mistakenly not wrap in the table but instead would overflow into the next column. Note: This was only partially fixed in a previous version. (Ticket #60923)
- Bug fix: The page footer on project pages would sometimes not be displayed at the very bottom of the page if the left-hand menu was taller than the right side of the page.
- Bug fix: In a project that has sent many survey invitations (e.g., >50,000), it could cause both the Public Survey Link page and the Participant List page to load very slowly and in some cases never fully load at all.
- Bug fix: For some pages in REDCap, the PHP constant "PAGE" might mistakenly get set as "/index.php" rather than "index.php", which could cause problems for existing External Modules or hooks that must utilize the value of PAGE to determine the current location. This has now been changed so that any slashes at the beginning of PAGE will be trimmed off before it gets defined. (Ticket #61776)
- Bug fix: When exporting data in CSV Labels format for projects whose language is set to a language other than the default English, it would mistakenly always display *all* the choice labels for checkbox fields in the export file, rather than outputting the choice labels for only the checkbox options that had been selected for that field. (Ticket #60620)
- Change: Added note about e-Consent feature on the REDCap Home Page.
- Change: More explanatory info was added on the Survey Settings page for Question Numbering, Question Display Format, and Response Limit.
- Bug fix: The DateDiff+Today/Now cron job would mistakenly get run for projects that had been deleted in the past 30 days. It now ignores any projects that have been deleted by a user.
- Bug fix: When using the e-Consent Framework for a survey, the resulting PDF of the consent survey would mistakenly not obey the project-level PDF Customization setting to show or hide the REDCap logo/URL under specific conditions. This would vary depending on if certain settings were set for the e-Consent Framework, such as having first/last name fields defined or consent version. (Ticket #58221)
- Bug fix: When using the e-Consent Framework for a survey, if custom PDF header text is set under the project-level PDF Customization settings, it would mistakenly not get displayed on the resulting PDF of the consent survey.

Version 8.11.10

- Change: The Data History Widget on data entry pages now displays the "seconds" component of the "Date/Time of Change" timestamp for when the data value was added/modified. This allows users to view the logging items with greater granularity for when data changes are made in narrow windows of time.

- Bug fix: On the Online Designer, when using the "Test logic with a record" feature for the Advanced Branching Logic Syntax in the "Add/Edit Branching Logic" popup or the "Test calculation with a record" for a Calculation in the "Add/Edit New Field" popup, it would mistakenly say that there was an error in the syntax every time if the project is longitudinal. (Ticket #54822)
- Bug fix: On the Survey Settings page, if a survey has the e-Consent Framework enabled, and then an administrator disables the e-Consent Framework for all projects in the system (via the Modules/Services Configuration page in the Control Center), then the Survey Settings page would mistakenly still display the e-Consent Framework options. (Ticket #62075)
- Bug fix: When the Double Data Entry module is enabled in a project, and the current user is DDE person #1 or #2, it would not display the form status icons with the correct color on the Record Status Dashboard but would instead mistakenly always display them as gray status icons. This bug emerged in the previous version. (Ticket #62212)

Version 8.11.11

- Bug fix: If hyperlinks exist inside multiple choice labels on a survey that has Enhanced Choices enabled, the hyperlinks might mistakenly not be displayed in the correct color (depending on the survey design settings) and thus might not be readable.
- Bug fix: For multi-page surveys having fields with branching logic, in very specific situations some pages of the survey might mistakenly get skipped over. (Ticket #62299)
- Bug fix: When importing data for a repeating instrument or event (via API or Data Import Tool), it would mistakenly be possible to import a non-integer number value (e.g., 2.1, 5.44) for the redcap_repeat_instance field.
- Bug fix: The Action Tag @NONEOFTHEABOVE fails to work if it references a choice not wrapped in quotes and is also followed by other text in the Field Annotation - e.g., ""@NONEOFTHEABOVE=0 @INSTANCETABLE_HIDE". (Ticket #61939)