

Version 11.4.4 (released on 2021-11-12)

CHANGES IN THIS VERSION:

- **Improvement:** New parameter "repeat_instance" was added to the API method "Export PDF file of Data Collection Instruments" to allow users to export a PDF of an instrument for a specific repeating instance of a repeating instrument/event. (Ticket #117182)
- **Change/improvement:** When a survey participant partially completes a survey that has the Save & Return Later feature enabled, and an email is then sent to the participant to remind them to finish their survey later, instead of sending that email from the system-level "Email Address of REDCap Administrator" (as in previous versions), the "From" email address of the "Survey partially completed" email will be set to the sender's address from the most recent survey invitation received by the participant. This will create more consistency and will reduce confusion for participants when attempting to reply back to the email, as has been a problem in the past.
- Bug fix: For certain server configurations, the REDCap cron job might mistakenly crash due to a floating point precision issue when creating a timestamp. This occurrence is fairly rare. (Ticket #117186)
- Bug fix: The x-axis of a [scatter-plot] Smart Chart would mistakenly not display in the correct sorted fashion. (Ticket #117202)
- Bug fix: If a user has many conversations (e.g., hundreds or more) listed in their REDCap Messenger window, every page of REDCap would load slowly for them, even if Messenger is closed when the page loads.
- Bug fix: If the setting "Allow survey respondents to view aggregate survey results?" has been disabled at the system level in the Control Center, then a user entering a URL into the "Redirect to a URL" option on the Survey Settings page in a project would cause an unrelated error message to mistakenly appear and would prevent the user from adding/modifying the "Redirect to a URL" option. (Ticket #117399)
- Bug fix: If a calculation, branching logic, or conditional logic contains exponents in which the base number's value is negative, it might mistakenly not return any value at all - e.g., $([\text{number1}]^{1/3})$ where the value of "number1" is "-8". (Ticket #117456)
- Bug fix: In calculations or branching logic, the special function isinteger() would mistakenly only return True if the value came from an integer- or number-validated Textbox field. (Ticket #117447)
- Bug fix: When saving some custom text for the settings "Custom text to display at top of Project Home page in project" or "Custom text to display at top of all Data Entry pages in project" on the "Edit A Project's Settings" page in the Control Center, it would mistakenly display a lot of extra line breaks on the project page where the custom text would be rendered. (Ticket #117403)

- Bug fix: Upgraded the JavaScript libraries Backbone.js and Underscore to their latest version since they were both outdated. (Ticket #117462)
- Bug fix: When using Azure AD authentication, the logout process in REDCap would mistakenly not take the user to the Azure AD logout page, thus not actually logging out the user fully. (Ticket #117166)
- Bug fix: When initializing a project in the REDCap Mobile App in which the project contains an SQL field, if the query for the SQL returns only one column (rather than two columns), the drop-down would mistakenly not display correctly on the data entry form in the REDCap Mobile App. (Ticket #107409b)
- Change: The explanation text for the "Re-evaluate Automated Invitations" process was modified to improve clarity with regard to how the re-evaluation process works. (Ticket #116807)
- Bug fix: When performing the Import Records API method with the data format set as "csv" in which the data being imported was obtained from a data export via the user interface (not via the API) in CSV Raw format, the API would return a field validation error message or might save the imported value with an extra space prepended to it if the original value that was exported for that field began with a specific CSV Injection character, such as -, @, +, or =. The data import API process now removes the extra space character at the beginning of the value when this specific scenario is detected in order to preserve the original value of the field. (Ticket #117546)

Version 11.4.3 (released on 2021-11-05)

CHANGES IN THIS VERSION:

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in various places.
- Change/improvement: A button to open the Codebook page as a floating popup window was added inside the Logic Editor popup to allow users to easily find and reference fields they want to use in their logic while in the editor.
- Improvement/change: The underlying business logic of REDCap's cron job processing methods have been changed so that long-running cron jobs will not block other jobs from running at their scheduled time.
- Bug fix: Typo in "SFTP/WebDAV-only settings"
- Bug fix: Fixed issues with regard to users adding a secondary/tertiary email address on their Profile page. (Ticket #116375)
- Bug fix: When viewing the Survey Queue page when it is displaying repeating surveys for a record, if some instances of the repeating survey are missing or were deleted, it would mistakenly display them in the queue with a "Begin Survey" button next to them. It should instead only display a button to create a new instance after the last current instance for the survey. (Ticket #116534)

- Bug fix: Some files that were uploaded to a REDCap Messenger conversation might mistakenly not download correctly and might appear corrupt when opened after being downloaded.
- Bug fix: If a project is in production and collecting data via surveys, and then it is moved to Draft Mode, after which a user downloads an Instrument Zip file in the Online Designer for one of the project's survey and then re-uploads the same Instrument Zip file, all existing survey responses would get disconnected from the original survey, thus losing all their survey completion timestamps and changing all the survey links for the existing records in the project. Bug emerged in REDCap 11.2.0. (Ticket #116940)
- Bug fix: PHP compatibility issue with PHP 8 on the Online Designer might cause the page to crash with a fatal error. (Ticket #117020)
- Bug fix: When creating a new conversation in REDCap Messenger, it would mistakenly fail to open the new conversation in the user interface immediately after being created.
- Bug fix: When using the Data Resolution Workflow and entering data on a data entry form, the floating button that says "Save and then open data resolution pop-up" would mistakenly be displayed next to every embedded field inside a block of embedded fields when the cursor is placed in the field, even when the embedded field does not have a data query opened for it. The button should only appear next to fields that have an open query. (Ticket #116987)
- Bug fix: Smart Charts (e.g. bar-chart, pie-chart, donut-chart) that display multiple choice labels that contain multibyte characters, in which the labels are 13 or more characters in length, might have those multibyte characters mistakenly get garbled and thus not appear correctly in the chart. (Ticket #117103)

Version 11.4.2 (released on 2021-10-29)

CHANGES IN THIS VERSION:

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in various places.
- **Minor security fix:** To improve the overall security of the application, the SameSite attribute of all cookies created by REDCap now has a value of "Lax", whereas in previous versions it was set to "None".
- **Minor security fix:** To prevent a Session Fixation attack, session IDs are now regenerated upon every successful login by a user.
- **New feature:** A new Cron History table was added to the bottom of the Cron Jobs page in the Control Center to allow administrators to have more visibility regarding when certain cron jobs are run and for how long, including cron jobs for external modules. The table includes a date field to easily adjust the window of time by date.

- **Improvement:** If using Amazon S3 or Azure Blob Storage for the system-level File Storage Method, the same file storage method may also be used for the following system-level settings: 1) 'File Upload' field enhancement: Password verification & automatic external file storage, 2) Record-level Locking Enhancement: PDF confirmation & automatic external file storage, and 3) e-Consent Framework: PDF External Storage Settings (for all projects). These three settings will each utilize a different bucket/container than the system-level file storage method where all other REDCap files are stored (as a means of keeping them separate from the other files). These settings are often utilized for compliance with 21 CFR Part 11 and similar regulations. The addition of the S3/Azure options will be helpful when already running REDCap on AWS/Azure. The bucket/container where the files will be stored for these three options may be set for each near the bottom of the Modules/Services Configuration page in the Control Center.
- Bug fix: The optional settings for the Protected Email Mode feature would mistakenly not get copied to a new project when using the Copy Project page. Additionally, those settings would also not get added to a Project XML file if the project were exported and then re-created in REDCap via Project XML.
- Bug fix: When instruments are added from the REDCap Shared Library to a production project in Draft Mode, after the changes have been approved, all users would mistakenly have full "View/Edit" Data Viewing privileges to the new instrument. By default, users should initially have "No Access (Hidden)" privileges to newly added instruments.
- Change: The email that users receive from an administrator that has just approved their production changes now reminds them that the default Data Viewing Rights for any newly added instruments will be 'No Access (Hidden)'.
- Bug fix: When an administrator processes and commits a user's draft mode changes for their production project, the "Project Changes were Approved" email confirmation sent back to the user would mistakenly have its From address as the admin's email when it should instead be the general "Email Address of REDCap Administrator". (Ticket #116368)
- Bug fix: When calling the "Export Records" API method with parameters type=eav and format=csv, the API might mistakenly output survey fields incorrectly if exportSurveyFields=true in the API request. Additionally, it might mistakenly output the "redcap_event_name" and "redcap_repeat_instance" CSV columns in certain cases when those columns are not relevant and should not be output. (Ticket #115862)
- Bug fix: Fixed a compatibility issue for logged IP addresses in some server environments in which some load balancers/proxies/WAFs would unexpectedly add the port number to the HTTP_X_FORWARDED_FOR header that ultimately gets used as the client's IP address. (Ticket #116486)
- Bug fix: The Online Designer might mistakenly display a comma after some action tags listed in pink below a given field that has action tags.

- Bug fix: The page on a survey that is displayed after a participant has clicked the "Save & Return Later" button would display text and contents that mistakenly did not completely conform to the survey theme of the current survey. (Ticket #116613)
- Bug fix: Using the ":record-name" parameter in the [stats-table] Smart Variable would mistakenly not limit the descriptive stats displayed in the table to the currently viewed record but would instead display the stats for all records in the project. (Ticket #116546)
- Bug fix: Using the @IF action tag on a field in which @IF is nested more than twice would mistakenly cause it not to get parsed correctly and thus might cause the wrong action tags to be implemented for the field. (Ticket #116535)

Version 11.4.1 (released on 2021-10-22)

CHANGES IN THIS VERSION:

- **New feature: Auto-adjudication for Clinical Data Pull (CDP) projects** - As an extension of the existing "Instant Adjudication" feature for CDP projects, any projects with Instant Adjudication enabled can optionally enable the Auto-adjudication feature on the CDP Setup page in a project. Once enabled, if any records in the project have data that has already been pulled from the EHR and are awaiting adjudication, they will be adjudicated automatically by a cron job process that checks every 5 minutes. This allows the data to follow into the project automatically and prevents the need for a user to manually adjudicate data or to click the Instant Adjudicate button. Similar to the Instant Adjudication setting, only users with CDP Setup/Mapping privileges can enable the Auto-adjudication setting.
- **New feature: Admins can set or change a user's sponsor** on the "View User List By Criteria" tab on the Browser Users page in the Control Center. An administrator can click the "Set or change user's sponsor" button on the page and then select another user in the system to become their new sponsor. This feature works for any users that currently have a sponsor or that do not have a sponsor.
- **Improvement:** "Google Cloud Storage using API Service Account" as new file storage option - To store REDCap's edoc files via Google Cloud Storage, this option can be selected in the File Upload Settings page in the Control Center. An additional option exists to organize files by REDCap project ID when storing them in Google Cloud. (Thanks to Andy Martin and his team for this contribution.)
- **Improvement:** New CDIS setting - Admins now have the option to use the CA bundle from REDCap or the verification provided by the webserver for HTTPS connections.
- **Improvement:** New option for Protected Email Mode - Users may now upload a custom logo that they wish to be displayed on the webpage and in emails utilizing the Protected Email Mode. This feature is supplementary to the existing custom text option for Protected Email Mode. This option is located in the Protected Email Mode section of the Additional Customizations popup on the Project Setup page.

- **Minor security fix:** When displaying a fatal PHP error to REDCap administrators, the full file path of the PHP file is no longer exposed and output on the page, but instead it only outputs the local path from the REDCap webroot in the PHP error message. This prevents inadvertently exposing some of the file/folder structure of the web server.
- Bug fix: The "Returning?" popup that appears near the top right of a survey page would display text and contents that mistakenly did not conform to the survey theme of the current survey. (Ticket #115314)
- Bug fix: Fixed issue with database issue detection script regarding a key for the redcap_user_roles table. (Ticket #115587)
- Fixed typo in @IF documentation
- Bug fix: Some explanatory text not displayed for the "Allow normal users to edit their primary email address on their Profile page" setting on the User Settings page.
- Bug fix: The @IF action tag might not work correctly when the currently viewed record has not been saved/created yet.
- Bug fix: The @IF action tag might not work correctly when the True or False part of the IF has two single or double quotes. (Ticket #115731)
- Bug fix: The smart variable [line-chart] might mistakenly display plain text data on the x-axis if a Textbox or Notesbox field is used as the x-axis field. (Ticket #115818)
- Bug fix: In some very specific cases when using PHP 8, the upgrade module might mistakenly not load due to a fatal PHP error. (Ticket #115680)
- Change/improvement: The HTML tags "video" and "source" can now be used in user-defined labels throughout REDCap. (Ticket #16057)
- Bug fix: Returning 'false' from the redcap_email hook method in an external module would mistakenly not prevent emails from being sent.
- Change: When viewing an individual email on the Email Logging page, it now logs the record name, event_id, and instrument name (when applicable) in the redcap_log_view database table.
- Bug fix: When a repeating instrument has data entered on multiple repeating instances, and then afterward the instrument is made to no longer be repeatable, the Data History popup would mistakenly display the history for all repeating instances for that field (including the ones that have now been orphaned), rather than for only the first instance. (Ticket #115308b)
- Bug fix: The jSignature JavaScript library used for "signature" field types was mistakenly reverted to an earlier version of the library that was sometimes not compatible with a stylus. (Ticket #115607)
- Bug fix: When using the Twilio telephony services in a project and utilizing the "Designate a phone number field" setting, in certain situations it might fail to display the record name of the participant in the Survey Invitation Log. (Ticket #115206)
- Bug fix: When appending the Smart Variable [current-instance] to a field variable in branching logic or a calculation on an instrument that is not a repeating instrument and not on a repeating event in the current context, it might mistakenly not evaluate

the branching logic/calculation correctly on the data entry form or survey page. (Ticket #115585)

- Bug fix: When viewing a survey via a private/unique survey link (i.e., not via a public survey link), in which the survey is set to "offline" and has field variables piped into its custom offline message, it would mistakenly not pipe the data successfully in the offline message. (Ticket #116092)
- Bug fix: When exporting a PDF of an instrument containing data, if a drop-down or radio field in the PDF has a choice coded as "0" in which the field's saved value is not currently "0", the resulting PDF might mistakenly show both the "0" choice and the saved choice as being selected. This appears to only occur in certain versions of PHP 7. (Ticket #115505)
- Bug fix: When the enhanced checkbox option has been enabled on a survey in which a checkbox on the survey utilizes the @NONEOFTHEABOVE action tag, if the checkbox is embedded in another field on the page, the enhanced buttons would mistakenly not behave/display correctly for the checkbox when selecting the "None of the Above" choice or if another option is clicked while the "None of the Above" choice is already selected. Note: This does not affect the data being saved correctly for the checkbox but affects only the displaying of the enhanced buttons; thus it could be confusing for the survey participant. (Ticket #115891)
- Bug fix: When using the [survey-link] or [survey-url] Smart Variables in a project in which a literal instance number is appended to it (e.g., [survey-link:my_survey][2]), it might mistakenly return the link/URL of the first instance instead of the correct repeating instance.
- Bug fix: When using a Smart Chart, Smart Table, or Smart Function that has a unique report name appended to it, anytime a REDCap page would display the output of the chart/table/function, it would mistakenly log an individual "Data export" event on the Logging page for every chart/table/function having a unique report name.

Version 11.4.0 (released on 2021-10-11)

CHANGES IN THIS VERSION:

- **New action tag: @IF** - Allows various action tags to be set based on conditional logic provided inside an @IF() function - e.g., @IF(CONDITION, ACTION TAGS if condition is TRUE, ACTION TAGS if condition is FALSE). Simply provide a condition using normal logic syntax (similar to branching logic), and it will implement one set of action tags or another based on whether that condition is true or false. For example, you can have @IF([yes_no] = '1', @HIDDEN, @HIDE-CHOICE='3' @READ-ONLY), in which it will implement @HIDDEN if the 'yes_no' field's value is '1', otherwise, it will implement the two action tags @HIDE-CHOICE='3' and @READ-ONLY. If you wish not to output any action tags for a certain condition, set it with a pair of apostrophes/quotes as a placeholder - e.g., @IF([my_radio]='1', @READONLY, ""). You may have multiple instances of @IF for a single field. You may also have

multiple nested instances of @IF() inside each other. Both field variables and Smart Variables may be used inside the @IF condition. The @IF action tag is also evaluated for a given field when downloading the PDF of an instrument/survey, in case there are any PDF-specific action tags used inside of @IF(). Note: The conditional logic will be evaluated only when the survey page or data entry form initially loads; thus the action tag conditions will not be evaluated in real time as data is entered on the page.

- **New feature: Protected Email Mode**
 - Users can enable the Protected Email Mode on any project on the Project Setup via the Additional Customization dialog. This setting prevents identifying data (PHI/PII) from being sent in outgoing emails for alerts, survey invitations, and survey confirmation emails.
 - If enabled, either A) all alerts, survey invitations, and survey confirmation emails or B) those whose email body is attempting to pipe data from Identifier fields will be affected, in which it will not send the full email text to the recipient but will instead send a surrogate email containing a link that leads them to a secure REDCap page to view their original email. If someone is accessing an email in the Protected Email Mode for the first time (or for the first time in the past 30 days), it will send a security code to their inbox that will allow the recipient to view any protected emails for up to 30 days on that same device. The Protected Email Mode is similar to Microsoft Outlook's "sensitivity label" feature.
 - When enabled in a project, user's may specify custom text/HTML to display at top of the sent email and web page where the original email is viewed. This will allow users to also display logos/images pertaining to their project or institution.
 - This feature can be disabled in all projects via a global setting on the Modules/Services Configuration page in the Control Center.
- **New feature: Email Logging page**
 - This is a new project page that contains a search interface to allow users with User Rights privileges to search and view ALL outgoing emails for that project (also includes searching and viewing of SMS messages if using Twilio services).
 - This feature can be disabled in all projects via a global setting on the Modules/Services Configuration page in the Control Center.
 - "Re-send email" feature - When viewing an individual email after performing a search on the page, a "Re-send email" button will be displayed in the dialog to allow users to re-send the email. Note: If the original email contained email attachments, the attachments will not be included in the email that is re-sent.
 - Only users with User Rights privileges in the project may access the page, and additionally they must opt-in and agree to a disclaimer before being able to view the page. The following text will be presented to the user

before accessing the page: "Before viewing and accessing this page, you must first agree that you understand the following important information and conditions. This page is only accessible by users having User Rights privileges in this project. The Email Logging feature allows users to search and view *all* outgoing emails related to this project, and this includes being able to view all aspects of any given email (i.e., the recipient(s), sender, subject, message body, attachment names). If you are using anonymous surveys in this project, keep in mind that viewing this page and the emails displayed therein might inadvertently cause anonymous survey responses to be identifiable/de-anonymized. Additionally, if the project is using Data Access Groups, you will be able to view the emails related to all DAGs in this project (and thus possibly any data piped into the body of those emails). If you understand and agree to these conditions, click the button below. Please note the act agreeing to this disclaimer will be documented on the project Logging page."

- **Improvement: New "Banned IP Addresses" page** in the Control Center allows administrators with "Manage User Accounts" privileges to add or remove IP addresses to/from the blacklist of banned IP addresses for the REDCap installation. The IP addresses listed on that page are IPv4 or IPv6 addresses that have been blocked manually using that page or have been banned automatically via the Rate Limiter feature (enabled on the General Configuration page in the Control Center).
- **Improvement:** When using the "Reason for Change" feature in a project, a new button is displayed underneath each "reason for change" textbox on the Data Import Tool summary page. Users can simply click the button to copy the text to all other "reason for change" textboxes on the page, thus saving lots of time of having to add text to each individually. This feature is the integration of Luke Steven's "Copy Change Reason" external module, which will be automatically disabled at the system-level when upgrading to (or past) REDCap 11.4.0 to prevent any conflicts.
- **Improve: New data export option - Export blank values for gray instrument status**
 - All instrument complete status fields having a gray icon can be exported either as a blank value or as "0"/"Incomplete". In previous versions, they could only be exported as "0". By default, they are now exported with a value of "0", but this option can be changed via a drop-down option in the "Advanced data formatting options" section of the data export dialog.
 - When exporting the Project XML file with both metadata & data, the option to export gray instrument status as a blank value will be preselected by default, whereas in other data export contexts (e.g. My Reports & Exports page), the option to export them as "0" will be preselected by default.
 - The API method "Export Records" has a new optional parameter "exportBlankForGrayFormStatus" that can accept a boolean (true/false)

with default value = false, and it functions the same as its equivalent data export option in the user interface.

- Note: Exporting gray instrument statuses as blank values is recommended if the data will be re-imported into REDCap. For example, when users export a Project XML file for a project and then create a new project with it, all the gray instrument status icons will be preserved in the new project, whereas in previous versions they were all converted into red status icons.
- **Improvement:** New option "Allow normal users to edit their primary email address on their Profile page" on the User Settings page in the Control Center. This setting will be enabled by default, but an admin can disable it if they wish to prevent any users from modifying their primary email address for their user account.
- **Improvement:** The developer methods `REDCap::getSurveyLink()` and `REDCap::getSurveyQueueLink()` now have an optional parameter "project_id" that (when provided) allows one to call the method outside of that target project's context. If project_id is not explicitly provided, then the methods must still be called within their target project's context.
- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text on the Project Setup page.
- **Major bug fix:** When a repeating instrument has data entered on multiple repeating instances, and then afterward the instrument is made to no longer be repeatable, then any new data entered on that data entry form for fields that already have data on other instance might mistakenly get stored in the wrong repeating instance (i.e., get orphaned in the "redcap_data" database table) and thus would fail to be seen when reloading the form again. (Ticket #115308)
- Improvement/change: New LOINC codes were added for CDIS-related functionality.
- Change: All CDIS-related features and functionality now utilize a centralized set of assets in the code, rather than each feature having only their own private set of assets. This change reduces the entire size of the REDCap code by half, thus saving lots of space on the REDCap web server.
- Various updates and fixes for the External Module Framework, such as the following: PID parameter safety improvements, Documentation updates, Prevented unnecessary errors from the Portable UTF-8 library's auto-redirection, Increased the setting lock timeout, and Fixed a `getSafePath()` case with absolute paths.
- Bug fix: When a user creates a new alert, the "Email From" address is now validated on the server side to ensure it is valid and belongs to a user in the project (or belongs to an administrator, if the current user is an admin that is not a user in the project).
- Bug fix: The green label "Field is embedded elsewhere on page" mistakenly doesn't show up for SQL fields on the Online Designer (Ticket #114889).

- Bug fix: For some REDCap installations, the redcap_new_record_cache database table might have an incorrect table collation.
- Bug fix: When clicking any of the "All..." buttons at the top of the Data Quality page to execute multiple data quality rules, some rules might randomly return an error message by mistake. Bug emerged in REDCap 11.3.4 Standard. (Ticket #102636)
- Bug fix: For surveys that have a "Size of survey text" setting set to "Large" or "Very Large", any slider fields on the survey page that display their number value to the right might mistakenly display the value textbox as too narrow in certain situations. (Ticket #114920)
- Bug fix: When using the @CALCDATE action tag with certain values entered for the date/datetime field used in the calculation, it might cause the page to unexpectedly crash with a fatal PHP error when running PHP 8. (Ticket #114831)
- Bug fix: The API Tokens page in the Control Center would mistakenly not display the "Last Used" timestamp for some users displayed in the tables on the page. Also, some AJAX calls that load the drop-down lists on the page might fail in certain cases. Additionally, the "Manage API tokens by Project" drop-down would mistakenly not display its full list of options when the page initially loads but only fully loads after an option is selected from it. (Ticket #114834)
- Bug fix: When uploading a CSV file of Automated Survey Invitations in the Online Designer, any datetimes set for the "Send on exact date/time" setting (including reminders) might mistakenly not get saved correctly. (Ticket #115024)
- Bug fix: Page-view information for plugins and external modules were mistakenly not getting stored in the redcap_log_view table and thus such information was not being displayed on the MySQL Dashboard page in the Control Center.
- Bug fix: The feature that detects database structure issues might mistakenly create false negatives in specific cases where a database table's collation isn't correct, thus allowing the issue to go unnoticed.
- Bug fix: The "Manage All Project Tokens" tab on the API page in a project might mistakenly fail to load the table of users.
- Bug fix: When using [aggregate-X] Smart Functions in branching logic or calculations, an error message might mistakenly display on the page saying that errors exist if any of the [aggregate-X] functions return a blank value. (Ticket #115235)

Version 11.3.4 (released on 2021-09-23)

CHANGES IN THIS VERSION:

- **Improvement:** When executing many data quality rules at once, the total time to finish all the rules occurs 3X faster. Instead of running only one rule at a time in a serial fashion, REDCap now executes three rules simultaneously when clicking the "All", "All except A&B", and "All custom" buttons at the top of the Data Quality page.
- **Improvement:** SQL fields can now be used in the following Smart Charts: bar-chart, pie-chart, and donut-chart. (Ticket #107115)

- **Improvement:** SQL fields can now be used as Live Filters in reports. (Ticket #8791)
- Bug fix: When using a Text Box field with date, time, datetime, or datetime w/ seconds validation as the x-axis field for a [scatter-plot] Smart Chart, the chart would mistakenly not display the data correctly. (Ticket #107721)
- Change: Added the "Microsoft Authenticator" mobile app as a two-factor authentication method that is equivalent to using the "Google Authenticator" mobile app.
- Change: When viewing a report while using a mobile device, it will no longer enable the floating table headers or floating first column automatically for the report table. This was changed because the floating headers/column made it difficult to view parts of a report while on a mobile device with a small screen.
- Bug fix: Slider fields that have HTML inside the slider labels might mistakenly not display correctly in a downloaded PDF of an instrument.
- Bug fix: When using the @DOWNLOAD-COUNT action tag on fields displayed on a report, if the download trigger field exists on that same report, then attempting to download the file would cause a JavaScript error on the page.
- Bug fix: If a field is used as a Live Filter in a report, in which some values for that field contain spaces or other characters that might get URL-encoded, it would mistakenly cause the Live Filter not to return any values in the report.
- Bug fix: The real-time logic validator in the Logic Editor popup might mistakenly fail and would return a false positive saying that the logic is invalid if the logic contains certain Smart Variables, such as [record-name].
- Bug fix: When using the API Playground and selecting certain drop-downs, such as the Forms drop-down list, they might mistakenly result in an error from the API. This only affects the API Playground and does not affect the API in general. (Ticket #114563)
- Bug fix: When a user has been assigned to multiple Data Access Groups via the DAG Switcher, the User Rights page would mistakenly not correctly display how many DAGs to which they are assigned if the user's username contained a capital letter when they were added to the project. (Ticket #114550)

Version 11.3.3 (released on 2021-09-17)

CHANGES IN THIS VERSION:

- **New API method "Rename record" and new developer method REDCap::renameRecord()** allows users/developers to rename a record in a project. For multi-arm longitudinal projects where a record might exist on multiple arms, the \$arm number can be specified to rename the record only on the specified arm, otherwise by default it will rename the record in all arms in which it exists.
- Change: Renamed the "My Profile" page to "Profile".

- Change/improvement: Added "ICD-10 Australian Modification" to the list of parsed coding systems in the Condition resource for Clinical Data Interoperability Services (both CDP and Data Mart).
- Bug fix: Clicking the download link for a File Upload field that is utilized in another field's @DOWNLOAD-COUNT action tag would mistakenly not trigger calculations or branching logic on the page.
- Bug fix: When performing cross-form/cross-event calculations (via data entry forms and surveys) or auto-calculations (via data import) - including both calc fields and @CALCTEXT fields - in a longitudinal project, in some cases the calculated value would mistakenly be saved in events that currently have no data. Calculated fields should only operate and save a value in events that already contain data. (Ticket #113972)
- Bug fix: When using the eConsent Framework for one or more surveys in a project, the PDF Survey Archive tab in the File Repository might mistakenly not display the "Download All" button unless at least two records exist in the project. Additionally, the drop-down filter to view "only eConsent files" would mistakenly display zero records after being selected if fewer than three records exist in the project. (Ticket #114091)
- Bug fix: When using the Double Data Entry module, instead of seeing the correct colored form status icons, a user that is DDE person 1 or 2 would mistakenly see all gray status icons for instruments on the Record Status Dashboard and on the left-hand menu while viewing a record. (Ticket #114068)
- Bug fix: Conditional logic used for a survey in the Survey Queue might mistakenly not evaluate correctly in specific cases, such as when using certain Smart Variables (e.g., [record-dag-name]). (Ticket #114181)
- Bug fix: When using the [survey-link] or [survey-url] Smart Variables in a longitudinal project in which a literal instance number is appended to it (e.g., [event_1_arm_1][survey-link:my_survey][2]), it would mistakenly always return the link/URL of the first instance instead of the correct repeating instance.
- Bug fix: When piping a datetime- or time-validated Text Box field on the same page as where the field itself is located while using the ":ampm" piping parameter, it might mistakenly pipe the value as-is instead of converting it to the AM/PM format. Additionally, it might mistakenly pipe the literal text "undefined:NaNam" if the field's value is set as blank/null in real time while on the page. (Ticket #114247)
- Bug fix: The Custom Application Links page in the Control Center might crash due to a PHP compatibility error when using PHP 8.0. This might also occur when downloading the User-DAG Assignments CSV file on the User Rights page. (Ticket #114292)
- Bug fix: Downloading the User-DAG Assignments CSV file on the User Rights page might produce an incorrectly structured CSV file. (Ticket #114292)

Version 11.3.2 (released on 2021-09-10)

CHANGES IN THIS VERSION:

- **Improvement:** The Project Revision History page now displays icons next to each production revision and snapshots, and after being clicked, will display options to compare that revision/snapshot with any other revision/snapshot in the project. (This feature represents the integration of the "Data Dictionary Revisions" external module created by Ashley Lee at BC Children's Hospital Research Institute).
- **Improvement:** When using the eConsent Framework in a project, the "PDF Survey Archive" tab on the File Repository page now displays a "Download all" button that will download all PDF files displayed on the page in a single zip file. Additionally, there is a record filter drop-down list and a "file type" drop-down list, which distinguishes between general "PDF Auto-Archiver" PDFs and "eConsent Framework" PDFs. Note: If a user is in a Data Access Group, they will only be able to download and filter on records in their DAG.
- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in various places.
- Bug fix: Fix for PHP 8 compatibility issue when entering data on a repeating instrument in specific cases. (Ticket #113507)
- Bug fix: When creating a new instrument via the Online Designer, the "Close" button in the success dialog would mistakenly say "Close2" instead. (Ticket #113587)
- Bug fix: The discrepancy result for Data Quality rules A and B would mistakenly display fields that exist on instruments for which the current does not have Data Viewing Rights. (Ticket #113589)
- Bug fix: If a checkbox field contains an invalid/stale value (i.e., not a currently existing choice) in the database backend, and then a Missing Data Code is saved for the field via a data entry form, both the invalid/stale value and the missing data code value will stay stored in the backend, and the data entry view mistakenly will not show that a missing data code has been saved for the field. (Ticket #113763)

Version 11.3.1 (released on 2021-09-03)

CHANGES IN THIS VERSION:

- **New feature:** "DAG Switcher" API method - When using the DAG Switcher functionality in a project, this method allows users to move themselves in and out of a Data Access Group at will using the API just as they would do the same thing in the user interface (assuming they have been assigned to multiple DAGs on the DAG Switcher page).
- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL for the project Logging page.

- Change: All cookies created on the client side (JavaScript) will now have the same "SameSite" and "Secure" attributes as cookies created on the server side (PHP). This helps improve general security.
- Bug fix: When using the Clinical Data Interoperability Services, specifically the CDP Field Mapping page, some translated mappable fields might not display correctly on the page and would mistakenly be garbled.
- Bug fix: If the user clicks the "Piping" or "Smart Variables" help buttons inside the "Add new alert" dialog on the Alerts & Notifications page, and then the user hits their ESC key on their keyboard, it would mistakenly close the "Add new alert" dialog (i.e., the dialog on the bottom) rather than the dialog on the top. (Ticket #112745)
- Bug fix: When using the "Save a PDF of completed survey response to a File Upload field" feature, the resulting PDF that gets saved to the File Upload field would mistakenly hide (not display) any fields in the PDF containing the @HIDDEN or @HIDDEN-SURVEY action tag. In that particular PDF export, only fields with @HIDDEN-PDF should be hidden (not displayed) in the PDF. (Ticket #113197)
- Bug fix: For projects with Data Access Groups, users that are not currently assigned to a DAG would mistakenly not see the DAG filter drop-down displayed on the Logging page. That drop-down should normally be displayed for users not assigned to a DAG. (Ticket #113188)
- Bug fix: When using Duo as a Two Factor Authentication option, it would mistakenly initiate the Duo 2FA process before the user even selects the Duo option from the list of choices to use when logging in. (Ticket #113193)
- Bug fix: When deleting an instance of a repeating event on the Record Status Dashboard, it might still cause that empty event instance to be displayed in reports and data exports. (Ticket #17859b)
- Bug fix: Due to a fatal PHP error when using certain versions of PHP, attempting to upload a signature on a survey or data entry form would mistakenly fail. (Ticket #113234)
- Change: Any multi-select drop-downs that are enhanced using the Select2 JavaScript library (e.g., the "Email To" field when creating/editing an alert) now display a down arrow on their right edge to better indicate that they are a clickable drop-down list.
- Bug fix: Real-time piping (i.e., performed via JavaScript after the page has already loaded) might mistakenly truncate the piped text in certain cases where a "<" character is used in the piped field's value. (Ticket #113237)
- Change: The REDCap Install page now returns a notice to anyone who accesses it that the page is no longer functional or available if it detects that REDCap has already been fully installed.
- Bug fix: If the File Version History feature was disabled at the system level but was still enabled for an individual project (according to the value of that setting in the redcap_projects database table), the feature might mistakenly function in some capacity in the user interface within the project but might cause issues for other features on the page. If this feature is disabled at the system level, it should by default also be disabled in all projects. (Ticket #113131)

- Change: In all outgoing emails, the "font-size" attribute for the "body" tag is no longer explicitly defined in the HTML of the email. This should have little (if any) effect on the appearance of emails sent from REDCap.
- Bug fix: On the Alerts & Notifications page, some alert settings might mistakenly not get saved when changed on an existing alert. (Ticket #113363)
- Bug fix: When editing a user's privileges on the User Rights page, the expiration date text box might mistakenly not display the full date because the text box is too narrow. (Ticket #113357)
- Bug fix: When the Table-based authentication setting "Force users to change their password after a specified number of days" has been enabled while also using Two Factor Authentication, it might mistakenly display the "Password will expire soon" popup warning on top of the 2-step login, in which clicking the "Change my password" button might cause issues with the 2-step login process for the user. It now still displays the popup dialog, but it functions now more as an information-only warning to let users know that they need to change their password as soon as they finish the login process. (Ticket #113393)
- Bug fix: When deleting a file for a Signature field or File Upload field on a data entry form or survey page, it was mistakenly deleting the file in the backend database when the user clicked the "Remove file" link when it should instead only be deleting the file after they click "Remove file" *and also* then save the page via a Save button. This fix makes it consistent with how files are saved when uploaded, in which the add/delete action is finalized only when the Save button is clicked on the page. (Ticket #113058)
- Bug fix: The email test on the Configuration Check page might mistakenly fail and display a false negative for certain email server configurations despite the fact that emails are able to be sent successfully out of REDCap in all other places in the application.
- Bug fix: When the "URL shortening service" setting is disabled on the Modules/Services Configuration page in the Control Center, it would still mistakenly display the option to create a custom/short URL for public reports and public project dashboards. It should not be displayed as an option in those places when disabled at the system level. (Ticket #112895)
- Bug fix: When viewing the draft mode changes for a production project, any field with branching logic that is being modified might mistakenly get truncated or display incorrectly on the page if the branching logic contains "<>". (Ticket #113237b)
- Bug fix: When navigating in a project on a mobile device, in which the user has been assigned to multiple Data Access Groups via the DAG Switcher, the blue toolbar at the top of the page for switching DAGs would mistakenly not be visible. (Ticket #113459)
- Bug fix: In a longitudinal project, Data Quality rules A and B might mistakenly not return a discrepancy when a field is missing a value in which the field's branching logic contains a Smart Variable and also does not have a unique event name or X-

event-name prepended to all the field variables used in the rule logic. (Ticket #111474)

Version 11.3.0 (released on 2021-08-27)

CHANGES IN THIS VERSION:

- **New action tag: @RICHTEXT** - Adds the rich text editor toolbar to a Notes field to allow users/participants to control the appearance (via styling and formatting) of the text they are entering into the field.
- **New API methods**
 - Delete User - Remove a specified user from a project.
 - Export User Roles - Returns a list of user roles, including their role name, unique role name, and privileges, from a project.
 - Import User Roles - Allows one to create new roles (specifying their role name and privileges) or edit the role name and privileges of existing roles.
 - Delete User Role - Deletes a specified user role from a project.
 - Export User-Role Assignment - Returns a list of project users and what user role to which they are assigned.
 - Import User-Role Assignment - Allows one to assign, reassign, or unassign one or more users to/from a user role in a project.
- **New features:** New drop-down options on the User Rights page to allow users to perform the tasks listed below using a CSV file in the user interface.
 - Upload users and their privileges
 - Download users and their privileges
 - Upload user roles and their privileges
 - Download user roles and their privileges
 - Upload user role assignments
 - Download user role assignments
- **New developer method: REDCap::deleteRecord()** - Plugin/hook/module developers may utilize this new method to delete entire records from a project or to delete the data from a specified instrument, event, or repeating instrument/event for specific records.
- **Improvement:** More options/parameters for the API Delete Record method - Users can now specify instrument, event, and/or repeat_instance to delete the data from a specified instrument, event, or repeating instrument/event for the records specified in the API request. In previous versions, the only option was to delete the entire record.
- **Change/improvement:** When an administrator is reviewing a user's submitted production changes for Draft Mode on the "Project Modification Module" page and then clicks the "Compose confirmation email" button in the blue "Administrator Actions" box, the email template displayed in the dialog now contains clearer

wording to help users better understand how to respond. This helps make the production change process faster and more efficient.

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way as user-defined text in REDCap Messenger.
- **Change:** If new instruments are created in a project while in production status, all users and user roles will no longer automatically get full "View & Edit" rights to that instrument for their Data Viewing Rights but instead will receive "No Access (Hidden)" rights by default for new instruments. When in development status, the instrument-level rights still defaults to "View & Edit" for new instruments. This change helps improve security when a project is in production to ensure that users do not accidentally gain access to data that they should not see if new instruments are still being added to the project. (Ticket #54096)
- **Change/improvement:** When viewing the Record Status Dashboard in which one or more repeating instrument tables are displayed at the bottom of the page, if any of the tables were collapsed on a previous visit of the page, the page will load much faster, especially for records containing hundreds or more repeating instances.
- **Bug fix:** Some email addresses that are entered into the value of a Text or Notes field might mistakenly not get converted into a clickable "mailto" link when viewed on a report.
- **Bug fix:** When exporting and importing a Project XML file, the Survey Queue setting "Keep the Survey Queue hidden from participants?" (if enabled) would mistakenly not get enabled in the new project created from the XML file.
- **Bug fix:** When calling the Export Records API method and providing the "fields" parameter, in which the parameter's value only contains the variable names of one or more Descriptive fields in the project, it would mistakenly return data for all fields instead.
- **Bug fix:** When using the DDP Custom feature, required parameters (i.e., user, project_id, redcap_url) were mistakenly not being sent to the custom metadata web service.
- **Bug fix:** Fields with the @DEFAULT action tag might mistakenly not get prefilled with the default value on the page if any fields on that same instrument contain saved data and have the @CALCDATE or @CALCTEXT action tag. (Ticket #110331)
- **Bug fix:** If the "Save & Return Later" feature is enabled for a survey in a project that also has the "Survey Login" feature enabled, if a participant clicked the "Save & Return Later" button on a public survey, it would mistakenly display information about a Return Code, which is actually not needed and is confusing because it is inaccurate.
- **Bug fix:** If a user is requesting that an administrator generate an API token for them, it would mistakenly not log the admin's action of generating the token. Technically, the action was being logged but was just not available on the Logging page in the project for which it was requested.

- Bug fix: When using multiple action tags together on a single field, in which the action tags have values inside single quotes or double quotes (e.g., @NONEOFTHEABOVE='1,2,3' @HIDECHOICE='4'), the action tags might mistakenly not get parsed correctly, thus causing them not to function correctly in some cases. (Ticket #113018)
- Bug fix: When the project-level setting "Prevent branching logic from hiding fields that have values" is enabled, it might cause an error popup to appear on survey pages when a field with a value is trying to be hidden by branching logic. (Ticket #113054)

Version 11.2.6 (released on 2021-08-20)

CHANGES IN THIS VERSION:

- **Improvement:** On the External Modules page in a project, users with appropriate privileges may now import and export the configuration settings for any module that is enabled in the project. This feature functions as a convenience by allowing users to easily migrate the configuration settings of one or more modules to another project that has the same module(s) enabled.
- **Improvement:** If a user is not assigned to a Data Access Group in a project, the user will now see a new "[No assignment]" option in the "Displaying Data Access Group" drop-down list on the Record Status Dashboard, in which selecting that option will display only records that have not been assigned to any DAG.
- **Change/improvement:** "Previous instrument" and "Next instrument" buttons were added at the top right of the Online Designer field-view page to allow easier navigation between instruments. (Ticket #101057)
- **Minor security improvement:** Removed the usage of the PHP function "mt_rand" in the source code, and replaced it with the more cryptographically secure PHP function "random_int".
- Bug fix: When copying a project, it mistakenly does not copy the Data Entry Trigger URL into the new project. (Ticket #112269)
- Bug fix: When a project has the setting "Delete a record's logging activity when deleting the record?" enabled on the Edit A Project's Settings page, it would mistakenly not display the checkbox option to allow users to additionally delete a record's logging when deleting the record itself via the Record Home Page. (Ticket #112239)
- Bug fix: When downloading a CSV export of various things in REDCap (e.g., Notification Log export, Data Access Groups export), it might fail to add a BOM (Byte Order Mark) to the CSV file if the file contained UTF-8 characters. The Byte Order Mark is required to open UTF-8 encoded CSV files correctly in certain spreadsheet applications, such as Microsoft Excel. (Ticket #112239)
- Bug fix: If all the discrepancies of any Data Quality rule have been excluded, it would mistakenly not display the "view" link next to the rule (even though it returns "0")

results) after the rule had finished running. It is necessary to still display the "view" link so that users can click it in order to view the exclusions inside the dialog. (Ticket #112294)

- Bug fix: When clicking "Cancel" inside the Logic Editor dialog, it might mistakenly revert the value of the text box being modified to the value of another text box that was previously edited via the Logic Editor while on that same page. (Ticket #101200b)
- Bug fix: When exporting and then importing an instrument via the Instrument Zip file in the Online Designer, in which the instrument is enabled as a survey, it might fail to import the instrument in the zip file successfully. (Ticket #112346)
- Bug fix: Any generated zip files would mistakenly fail upon creation and thus return an empty zip file when using Google Cloud Storage as the File Storage Method (as defined on the File Upload Settings page in the Control Center).
- Bug fix: The developer method REDCap::getSurveyQueueLink() would mistakenly always return NULL.
- Bug fix: Multiple blank rows in the table displayed on the survey queue page might mistakenly take up too much room on the page. (Ticket #110914)
- Bug fix: When a survey is set to "Auto-continue to next survey" in the Survey Termination Options on the Survey Settings page while the other survey setting "Prevent survey responses from being saved if the survey ends via Stop Action?" is set to "Do NOT save the survey response...", the survey would mistakenly continue to the next survey if the participant triggered the survey to end via a Stop Action.
- Bug fix: When viewing the data entry form for a survey-enabled instrument, if the Compose Survey Invitation dialog is opened on the page, then closed, and then opened again without refreshing the page, the rich text editor in the dialog would mistakenly not be initiated anymore. (Ticket #96574)
- Bug fix: Custom Application Links (which are to be displayed on the left-hand project menu) were mistakenly only visible to users with User Rights privileges in the project. (Bug #112651)

Version 11.2.5 (released on 2021-08-13)

CHANGES IN THIS VERSION:

- **Improvement/change:** Any HTML used in the value of a Text field or Notes field will no longer be escaped on a report (i.e., displayed as-is) but instead the HTML will be interpreted on the report to allow for the styling of text on the page. This means that while previous versions would have displayed the text value "Word" literally as "Word" (without quotes) on a report, it now instead displays "Word" as bolded text on a report. Note: This does not affect data exports or any pages other than reports.

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

records that have a value for a specific choice for the multiple choice field. For example, if a grouping field has choices "One", "Two", and "Three", in which no records in the project have "Two" selected, then the resulting bar chart might mislabel all the "Three"s as "Two".

Version 11.2.4 (released on 2021-08-06)

CHANGES IN THIS VERSION:

- Bug fix: When downloading a Descriptive field attachment while on a survey page, it might mistakenly return an error message and prevent the participant from downloading the file.
- Bug fix: When downloading a file for a File Upload field or an attachment for a Descriptive field, in which that file is being counted via the @DOWNLOAD-COUNT action tag on another field, the download count would not get successfully incremented for the @DOWNLOAD-COUNT field when the file is downloaded on a survey page (as opposed to on a report or data entry form).
- Bug fix: When downloading a file for a File Upload field or an attachment for a Descriptive field, in which that file is being counted via the @DOWNLOAD-COUNT action tag on another field, it might mistakenly attempt to save the incremented value to a non-existent record (as seen in the logging) when the file is downloaded on a public survey that has not been saved yet (i.e., the record does not yet exist).

Version 11.2.3 (released on 2021-08-06)

CHANGES IN THIS VERSION:

- **New action tag: @DOWNLOAD-COUNT** - The @DOWNLOAD-COUNT action tag provides a way to automatically count the number of downloads for a File Upload field or a Descriptive field attachment. It can be used on a Text field or Notes field so that its value will be incremented by '1' whenever someone downloads the file for either a File Upload field or a Descriptive field attachment. The variable name of the File Upload field or Descriptive field whose downloads are to be counted should be provided inside the @DOWNLOAD-COUNT() function. For example, the Text field 'my_download_count' might have its action tag defined as @DOWNLOAD-COUNT(my_upload_field), in which 'my_upload_field' is the variable of a File Upload field. Whenever the file is downloaded on a data entry form, survey page, or report, the value of the field with this action tag will be incremented by '1'. If that field has no value or has a non-integer value, its value will be set to '1'. NOTE: The download count field must be in the same context as the File Upload field or a Descriptive field. This means that in a longitudinal project the two fields must be on the same event, and in a repeating instrument context, they must be on the same repeating instrument.

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into a field's value on a data entry form or survey page.
- **Change/improvement:** The Configuration Check page now checks to ensure that the "Email Address of REDCap Administrator" on the General Configuration page has a valid email entered. Without an email entered there, some features might not work correctly.
- **Change:** Updated setup instructions zip file for Clinical Data Interoperability Services by including a new CDIS Manual (PDF) in the zip file.
- **Bug fix:** When a PDF of a survey response is sent in a confirmation email after completing a survey, saved via the survey setting "Save a PDF of completed survey response to a File Upload field", or saved via the e-Consent Framework in the File Repository, it would mistakenly not store the survey version of the PDF (containing the survey title and instructions) but instead would store the data entry form version of the PDF.
- **Bug fix:** When editing the value of the Secondary Unique Field in a longitudinal or repeating instance context, it might mistakenly log the change extra times unnecessarily. (Ticket #110740)
- **Bug fix:** Making a call to the Import Records API method when importing zero records might cause an Out of Memory error. (Ticket #110761)
- **Bug fix:** When using Internet Explorer 11, clicking on a slider field or matrix of fields might mistakenly cause the screen to scroll to the top of the page. (Ticket #111202)
- **Bug fix:** When using Internet Explorer 11, trying to expand/collapse a project folder on the My Projects page would fail to work due to a JavaScript issue. (Ticket #111553)
- **Bug fix:** The REDCap cron job named "AlertsNotificationsSender" might unexpectedly crash for PHP 8 in certain circumstances. (Ticket #110702)
- **Bug fix:** Since Twilio limits SMS messages to 1600 characters, to prevent errors from being returned from a failed request to Twilio for very long text messages, REDCap now automatically breaks an SMS into multiple parts if it exceeds the 1600 character limit. (Ticket #110440)
- **Bug fix:** When making API data imports without any data being imported (i.e., blank or missing value for the "data" API parameter), it might behave erratically and cause a PHP error. It now correctly returns the error message "No data was provided". (Ticket #110761)
- **Bug fix:** After copying a user role, a text box would mistakenly appear on the User Rights page below the instruction text.
- **Bug fix:** When exporting a PDF of an instrument with the character encoding set as Japanese (SJIS), for certain server configurations or PHP versions it might crash with a fatal PHP error. (Ticket #111593)

- Bug fix: When editing a user role in a project that contains Data Access Groups, it would mistakenly display the "Assign To DAG" drop-down list in the dialog, which should not be displayed when editing roles.
- Bug fix: When a project contains repeating events in which a report has filter logic to filter out specific repeating instances (e.g., [current-instance] <> "" and [current-instance] = [first-instance]), the report might mistakenly display no results or incorrect results when there is actually data to display. This does not affect repeating instruments but only repeating events. (Ticket #110896)
- Change: Added clarifying text regarding the behavior of a non-active Automated Survey Invitations in the ASI dialog in the Online Designer. (Ticket #111182)
- Bug fix: In a project using Twilio telephony services, any Automated Survey Invitations or manually-scheduled invitations that utilize the "Use participant's preference" option for the Invitation Type might mistakenly append the survey link to the message of the survey invitation, even when that is not desired. It now no longer appends the survey link automatically but instead sends the invitation using only the literal text defined by the user. (Ticket #111484)
- Bug fix: When a user's account expires after the account expiration time has passed, the email sent to the user to notify them of this might be slightly incorrect and might mention user sponsors even if the user does not have a sponsor. The user sponsor related language was removed in that case.
- Bug fix: The offline survey message that is defined on the Survey Settings page would mistakenly not perform any piping when being displayed on an inactive survey. (Ticket #111707)
- Bug fix: Fields with the @HIDDEN-PDF action tag would mistakenly be displayed in the PDF download of the instrument when using the PDF download option "Send to printer: select 'Save as PDF' for Printer/Destination". (Ticket #111718)
- Bug fix: If a calculated field in a longitudinal project has a cross-event calculation that contains an [X-event-name] Smart Variable, the calculation might mistakenly not get triggered when entering data on a form, survey, or via a data import.
- Bug fix: When using Twilio SMS or Voice Call services on a survey that has only one field that is a Descriptive field, it would mistakenly ask the Form Status complete question at the end of the survey. (Ticket #111799)
- Bug fix: When calling the surveyLink API method in which a space exists (not necessarily intentionally) at the beginning or end of the "record" parameter passed in the API request, it might cause the space(s) to mistakenly get stored in some parts of the database where the record name is stored, thus causing the Survey Login feature not to work for that particular record anymore. (Ticket #111002)

Version 11.2.2 (released on 2021-07-16)

CHANGES IN THIS VERSION:

- **Improvement:** New piping parameter “:ampm” - When piping a time, datetime, or datetimes w/ seconds Text field, appending “:ampm” to the variable name (e.g., [visit_time:ampm]) will display the time in am/pm format (e.g., 4:45pm, 10:35am) instead of military time.
- **Improvement:** Ability for admins to configure the required password length and password complexity for user accounts when using Table-based authentication. These settings will default to requiring a 9-character password that must contain lowercase letters, uppercase letters, and numbers (but does not require any special characters. The following new controls have been added to the “Additional Table-based Authentication Settings” section of the Security & Authentication page in the Control Center.
 - Password Minimum Length - any length between 6 and 99 characters
 - Password Complexity options
 1. Requires both letters and numbers
 2. Requires lowercase and uppercase letters and numbers
 3. Requires lowercase and uppercase letters with either numbers or special characters
 4. Requires lowercase and uppercase letters, numbers, and special characters
- Bug fix: When making a report "public" and when viewing the report via its public link afterward, the check that ensures Identifier fields do not exist in the report would sometimes mistakenly fail to detect Identifier fields in the report.
- Bug fix: After making a report "public", if the report was made to be no longer public, it would mistakenly still display the report when viewing it via the public link. Instead it should display only an error message on that page (until the report has been made public again).
- Bug fix: If a public report contains the record ID field while the Custom Record Label or Secondary Unique Field is enabled in the project, REDCap would fail to prevent the report from being shown via the public link if any of the fields used in the Custom Record Label or Secondary Unique Field are Identifier fields. (Ticket #110288)
- Bug fix: The "Download metadata & data (XML)" button on the Other Functionality page would fail to work correctly due to a JavaScript error.
- Bug fix: When exporting a PDF of an instrument with data, any slider fields that have a custom range defined (i.e., anything other than 0-100) would mistakenly not be displayed correctly in the PDF and might appear as if the slider has a different value. (Ticket #110391)
- Bug fix: When a user is assigned to a Data Access Group while using record auto-numbering in a project, if the user attempts to schedule a record via the Scheduling page, it would mistakenly not generate the new record name correctly (i.e., with the DAG ID number appended to the end) when creating the new record.
- Bug fix: Download links for File Upload fields on surveys might mistakenly still be active and might allow participants to download the file if they still have the

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

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

Version 11.2.1 (released on 2021-07-09)

CHANGES IN THIS VERSION:

- Major bug fix: If using the AWS S3 file storage option, a fatal PHP error would occur when uploading or downloading documents, including on the Configuration Check page. (Ticket #110210)

Version 11.2.0 (released on 2021-07-09)

CHANGES IN THIS VERSION:

- **New feature: Ability to make reports accessible at a public link**
 - Summary: When editing a report, users can now set a report as "public" and can obtain a public link to the report if they have User Rights privileges in the project. When a report is public, this means that all data in the report will be fully accessible (with no authentication required) to anyone with the public link to the report.
 - In order to make a report public, all the following must be true:
 - The user must have User Rights privileges in the project or be a REDCap administrator.

- The report cannot have any Identifier fields in it.
 - The user is required to view the report during their current REDCap session.
 - The user must agree to and check off the following statements: 1) I understand that making this report "public" means that all data in the report will be fully accessible to anyone with the public link to the report, and 2) I understand that I am responsible if any private, sensitive, or identifying data in the report is exposed to persons who should not have access to such data.
- The behavior of how reports are made public can be controlled at the system level near the bottom of the User Settings page in the Control Center using the setting "Allow reports to be made 'public?'". Admins may completely disallow reports to be made public (although admins will still have this ability to do so). But if enabled, they may choose to allow users to make reports public on their own or enable the To-Do List approval process by which an admin will need to approve their request to make a given report public (similar to the same system level approval process for Project Dashboards being made public).
- Once a report has been made public, its configuration cannot be modified while it is public (users cannot add new fields, modify filter logic, etc.). In order to modify a public report, the user will need to make it no longer public, then make their changes, and then make it public again.
- **New Smart Variables**
 - [event-id] - (longitudinal only) The event id number of the current event.
 - [survey-access-code:instrument] - The Survey Access Code of the specified survey for a given record/event/instance. The format must be [survey-access-code] or [survey-access-code:instrument], in which 'instrument' is the unique form name of the desired instrument. This can be used simply as [survey-access-code] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument.
 - [survey-return-code:instrument] - The Survey Return Code of the specified survey for a given record/event/instance in order to allow a participant to return to a completed or partially completed survey response when using the 'Save & Return Later' survey feature. The format must be [survey-return-code] or [survey-return-code:instrument], in which 'instrument' is the unique form name of the desired instrument. This can be used simply as [survey-return-code] inside the content of a survey invitation, in which 'instrument' is assumed to be the current survey instrument.

- [user-role-id] - The Role ID of the user role to which the current user is assigned (blank if not assigned to any user role). This value is auto-generated for each user role. NOTE: This value is not just unique for all roles within the project but is also unique across all REDCap projects. Thus, if the project and its user roles are copied, the Role IDs of the user roles in the resulting copy will be different from the ones in the original project.
- [user-role-name] - The unique role name of the user role to which the current user is assigned (blank if not assigned to any user role). This value is auto-generated for each user role. NOTE: This value is only unique for roles within the project. Thus, if the project and its roles are copied, the new project will retain the same unique role names, which allows you to utilize the unique role names in conditional logic, calculations, branching logic, etc. that will not break when the project is copied.
- [user-role-label] - The name/label of the user role to which the current user is assigned (blank if not assigned to any user role). This value is defined by the user that creates the user role.
- **New Action Tag: @MAXCHOICE-SURVEY-COMPLETE** - Similar to @MAXCHOICE but only counts choices on completed survey responses (does not count data entered as data entry only or on partial responses). 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 completed survey responses only.
- **New feature: Tableau Data Export**- Extract all records into Tableau via the REDCap API.
 - This feature enables Tableau (v10.0+) users to connect Tableau to a REDCap project using an API token. Project data can be exported on demand and be available for use within Tableau to produce summaries and visualizations. The Other Export Option page in any given project has instructions to export project data into Tableau.
 - NOTICE: It is required for a user to have an API token generated for the project in order to use this feature.
- **New feature: MailGun Email API Integration**
 - As an alternative for sending outgoing emails from REDCap (rather than using the standard settings in PHP.INI to send them natively from the web server), you may use [MailGun](#), which is a third-party paid service that can send emails on behalf of REDCap.
 - The option can be configured on the General Configuration page in the Control Center. You merely have to provide the API key and domain name for your MailGun account, and it will begin using the MailGun Web API to send **all** emails going out of REDCap.

- **New feature: Project-level setting “Prevent branching logic from hiding fields that have values”**
 - This setting can be enabled by any project user with Project Setup/Design privileges in the Additional Customizations popup on the Project Setup page.
 - This setting affects both data entry forms and surveys. If it is not enabled (default), then whenever a field is to be hidden by branching logic on a data entry form, it will always ask the user if they wish to hide the field and erase its value, whereas on survey pages it will automatically erase the value of the field being hidden without displaying the confirmation prompt, which has always been the default behavior for surveys. If this setting is enabled, the branching logic behavior will change so that fields with values will not cause the 'Erase the Value of the Field?' confirmation prompt to ask the user if they wish to keep the value or hide the field, and instead fields with values will not be hidden by branching logic and will stay visible. Thus they will be exempt from branching logic. This will prevent data from being erased as it normally does if fields are hidden by branching logic.
 - When a field should be hidden by branching logic but is not hidden because it has a value, an icon will be displayed on the field to indicate this to the user.
 - This project-level setting is included in the API Export Project Info method as “bypass_branching_erase_field_prompt”. The REDCap Mobile App will soon have this same functionality, but it will only work if the REDCap server is on REDCap 11.2.0 or higher.
 - The name of Data Quality rule F has been slightly changed when this setting is enabled from “Hidden fields that contain values” to “Fields that contain values that should be hidden”.
- **Improvements for report display and/or data exports-** When creating/editing a report, the “Additional report options” section in Step 2 now contains the new options below:
 - For projects that have repeating instruments and/or repeating events, the repeating fields that are automatically added (e.g., redcap_repeat_instrument and redcap_repeat_instance) can now be excluded from the report and data export. These fields are displayed by default in reports/exports.
 - Users may choose to display the field label, variable name, or both (default) in the header of a report. Note: This is only used when viewing reports and thus is not applicable for exports since there already exist options for choosing raw vs label format in data exports.
 - Users may choose to display the field label, raw data value, or both (default) for multiple choice fields in the data displayed in a report. Note: This is only used when viewing reports and thus is not applicable for

exports since there already exist options for choosing raw vs label format in data exports.

- **Improvement:** If the value of a Text field or Notes field contains a URL or email address, the URL or email address will be converted into clickable link and mailto link, respectively, when viewing the data in a report.
- **Improvement:** More detailed logging descriptions on the Logging page for report-related logged events, such as mentioning the report name and report ID.
- **Improvement:** When users download an Instrument ZIP file for a given instrument in the Online Designer, the zip file now includes all survey settings for the instrument if the instrument has been enabled as a survey, including various files (e.g., survey logo, confirmation email attachment). The downloaded Instrument ZIP can then be uploaded into any project to transfer both the fields and all the survey settings.
- **Improvement:** In the Online Designer, the "Custom text to display at top of survey queue" now utilizes the rich text editor to make it easier to style the custom text.
- **Change:** PHP 7.2.5 is now the new minimum PHP version that is required for running REDCap. Note: All versions of PHP 8 are currently supported.
- **Major bug fix:** Fields embedded inside radio button and checkbox choices would fail to appear on data entry forms and survey pages. (Ticket #109836)
- **Bug fix:** When uploading a CSV file of events on the Define My Events page for a longitudinal project that has the Scheduling module enabled, it would mistakenly not add the events in the order in which they appear in the CSV file. (Ticket #108552)
- **Bug fix:** When clicking a table header on the My Projects page, the projects inside any collapsed Project Folders would disappear on the page until the page was reloaded. (Ticket #107547)
- **Bug fix:** When clicking on a collapsed Project Folder on the My Projects page, it might mistakenly open multiple Project Folders. (Ticket #108579)
- **Bug fix:** HTML styling on radio button and checkbox choices would mistakenly get removed on a survey page or data entry form.
- **Bug fix:** Using the Smart Variable [aggregate-count] for checkboxes would mistakenly not return any value. It now returns the number of total checkboxes that have at least one checkbox option checked for the field, which is consistent with how [stats-table] behaves for checkboxes.
- **Bug fix:** Referencing the record ID field in the Smart Variable [stats-table] would not return any values for that row in the table.
- **Bug fix:** The cron job that sends email notifications for REDCap Messenger might mistakenly send multiple emails repeatedly to users. (Ticket #97084)
- **Bug fix:** When importing alerts via a CSV file on the Alerts & Notifications page, the "Ensure logic is still true" setting would mistakenly not get set correctly during the upload if it was already disabled/unchecked for an existing alert and then was being enabled/checked in the CSV upload.

- Bug fix: Depending on a user's number format preference as defined on their My Profile page, certain Smart Functions (e.g., [aggregate-sum:field]) might fail to work successfully in calculations and branching logic. (Ticket #109994)
- Bug fix: The survey setting "Save a PDF of completed survey response to a File Upload field" would mistakenly display Signature fields in the drop-down list when it should exclude those. (Ticket #110071)
- Bug fix: The [bar-chart] Smart Variable would fail to display any data in the chart when used with a checkbox field. (Ticket #109370)
- Change: Added a dark gray line above the Custom Application Links section (if used) on the project left-hand menu to help differentiate the Custom Application Links from REDCap's built-in application page links.
- Bug fix: When the Secondary Unique Field is enabled in a project in which a data import is being performed with values for that field, it would mistakenly allow duplicate values to be imported for the Secondary Unique Field if the same value exists multiple times within the data file being imported. (Ticket #109791)

Version 11.1.4 (released on 2021-06-30)

CHANGES IN THIS VERSION:

- Bug fix: If a field's value is being piped on the same data entry form or survey page where the field itself is located, if that field is being hidden by branching logic, in which the user clicks "Okay" to the "Erase value" prompt to hide the field and erase its value, the piped value seen on the page would mistakenly not get changed/reset during this process but would instead retain the previous value of the field. (Ticket #108756)
- Bug fix: When viewing Report A or B, the built-in Live Filter for the Record ID field would display a list of all records in the project, which might crash the user's browser if tens of thousands or more records exist. To prevent this, it now only displays the first ten thousand record names in the Live Filter drop-down, similar to how the Data Quality page behaves.
- Bug fix: A fatal PHP error might occur on some pages related to CDP or Data Mart for certain versions of PHP. (Ticket #108971)
- Various fixes and improvements for the External Module Framework
- Bug fix: If the headers of a matrix of fields are displayed as floating/sticky on a data entry form or survey page, the floating headers would mistakenly disappear (at least until the user scrolls the page again) whenever branching logic gets triggered or if the "Reset" link for radio buttons are clicked. (Ticket #109434)
- Bug fix: The video link for Smart Charts/Functions/Tables in the Smart Variables dialog mistakenly pointed to the Project Dashboard video.
- Bug fix: When exporting data to a stats package (e.g., SAS) in which some multiple choice fields contain "<" in a choice label, the resulting syntax file might be mangled,

truncated, and/or incorrect. Also, that choice label with "<" may not display correctly on the Data Dictionary Codebook page. (Ticket #109571)

- Bug fix: When importing data in standard XML format via the API, some fields that have a blank value in the XML file might cause the data import to fail. (Ticket #109293)
- Bug fix: When using the Scheduling module for a project that has record auto-numbering disabled, it is possible that a record could mistakenly be created twice if one user creates the record via data entry at the same time that another user creates the record via the Scheduling module. (Ticket #109287)

Version 11.1.3 (released on 2021-06-18)

CHANGES IN THIS VERSION:

- **Improvement:** Reports A and B now have built-in Live Filters: 1) the record ID field, 2) a list of all events (if the project is longitudinal), and 3) a list of all Data Access Groups (if the project contains DAGs and the current user is not assigned to a DAG).
- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL of a specific endpoint.
- New videos: Added two new videos for Project Dashboards and Smart Charts/Functions/Tables on the Training Video page, Project Dashboards page, and Smart Variable popup documentation.
- Change: Small change to add clarity to the text of Step 1A when creating/editing an alert on the Alerts & Notifications page.
- Bug fix: A PHP error would mistakenly occur in the [redcap_connect.php](#) file if the `binlog_format` setting for MySQL/MariaDB has been enabled on the General Configuration page in the Control Center. (Ticket #108667)
- Bug fix: When exporting data to SAS in which the export contains some Ontology Text fields that have a dash in the raw value for some records in the export, it would prevent the data from being successfully loaded into SAS. Now when creating SAS formats for character variables in the resulting SAS syntax file, the values will be wrapped in single quotes for greater compatibility (unless all the values/options are numerical for the field).
- Bug fix: Calendar events that had no time set (i.e., only had the date set) but were scheduled or attached to a record would mistakenly not be ordered by record name when displaying the events of a given day on the Calendar page. (Ticket #108688)
- Bug fix: If a "bar-chart" Smart Chart utilizes multiple fields and also references a report via its unique report name, if the order of the fields defined in the Smart Chart is different than the order of the fields as they appear in the report, the bar chart would mistakenly not display correctly. (Ticket #108709)
- Bug fix: When a project is in draft mode, the Online Designer would mistakenly allow users to modify the variable name of matrix fields that exist live in production (i.e.,

not just in draft mode), which should not be allowed because it could inadvertently cause fields to be deleted via renaming. (Ticket #108705)

- Bug fix: Smart Charts and Smart Tables would mistakenly display HTML tags inside the chart/table if any HTML tags exist in the choice labels or field labels for the fields being utilized in the chart/table.
- Bug fix: Smart Charts with long field labels or long choice labels might cause text to overlap on themselves or might show only the label ending and not the beginning, which is due to a limitation in the ChartJS library used to generate the charts. Such labels are now truncated to fit better in the chart by using an ellipsis in the middle of the label for optimal display.
- Bug fix: When using the background fetch method for fetching EHR data via the Clinical Data Mart service, it no longer sends the user an email when the process has finished but instead sends a message via REDCap Messenger. This has been changed because it could be possible that any error messages sent inside the email might contain Medical Record Numbers. So sending the notification via Messenger is more secure.
- Bug fix: When a REDCap server uses the HTTP_X_FORWARDED_FOR header for a user's IP address, in which the IP actually contains multiple IPs delimited with commas (often because a load balancer is being utilized), it now instead just uses the first IP address in the list rather than the whole value, which was causing a blank IP address to be recorded in REDCap's logging for users in this particular case.
- Bug fix: In very specific cases where data has been imported into an instrument (but not for the form status complete field) and no user has entered data for that instrument via the data entry form or survey page yet, the form status icon might mistakenly display as a gray color instead of as red on the Record Home page or Record Status Dashboard. (Ticket #108183)
- Bug fix: If using "LDAP" or "LDAP & Table-based" authentication, any user containing an apostrophe in their LDAP username would cause JavaScript issues to occur for an administrator on the Browse Users page when performing certain actions, such as changing their 2FA code expire time, suspending/unsuspending the user, or deleting the user account from the system. (Ticket #79647d)

Version 11.1.2 (released on 2021-06-11)

CHANGES IN THIS VERSION:

- Improvement: New alternative PDF print option in the "Download PDF" drop-down at the top of data entry forms, in which there is a new PDF export choice: "This data entry form with saved data (send to printer: select "Save as PDF" for Printer/Destination)". This will produce a much improved browser-based print option to print/save the webpage as a PDF that serves as a suitable alternative to the existing server-side PDF rendering options, which can sometimes be very limited

and inaccurate (e.g., when representing field embedding). Note: This "Print to PDF" does correctly hide fields that have the @HIDDEN-PDF action tag.

- Change: Due to concerns about sending identifying information from REDCap in outgoing emails, Survey Notification emails will no longer include the Participant Identifier in the email body (if a Participant Identifier was entered in the Participant List for a given participant).
- Bug fix: Smart Charts, Tables, and Functions that have a unique report name or "user-dag-name" as a parameter were mistakenly not using the impersonated user's username and DAG when an administrator uses the "View project as user" tool, thus mistakenly utilizing all data in the project for the Smart Chart/Table/Function instead of just the data from that user's DAG. (Ticket #108017)
- Bug fix: Some FHIR metadata fields were mistakenly not being displayed in Clinical Data Pull (CDP) mapping page if using FHIR v2 (DSTU2).
- Bug fix: When a user or admin is clicking the "Yes, move to production status" button in the Move To Production dialog in a development project, it would mistakenly not disable the button after being clicked, which might cause confusing pop-up messages to appear if the button was clicked again before it finished processing. (Ticket #108321)
- Bug fix: When using the Data Resolution Workflow and assigning a user to a data query, the Messenger notification would mistakenly fail if the user chose to notify the other user of their assignment via Messenger. Thus they would not be notified. (Ticket #108335)
- Change: When setting the 2-step login controls for a given project on the "Edit a Project's Settings" page, it now displays a popup warning if an admin attempts to set both settings to "Yes" (because they are not compatible). (Ticket #108326)
- Bug fix: When importing or deleting a file via the API Import File or Delete File methods, it would mistakenly allow users to import files even when the entire record is locked or when the record/event/instrument/instance is locked for that file upload field. (Ticket #108399)
- Bug fix: When an alert has an email address set for the setting "Email to send email-failure errors", in certain situations (such as when running the "Re-evaluate Alerts" process) it would mistakenly send the email failure notification for *all* alerts in the project instead of just the ones that have an email address defined for the "Email to send email-failure errors" setting. This could result in some users receiving many more emails than expected when an alert fails to send successfully. (Ticket #85030)
- Bug fix: Fields that are embedded inside other embedded fields might not fully have their data piped in the field's label when viewed in a downloaded PDF of an instrument but might still display some field variables inside braces/curly brackets. (Ticket #108310)
- Bug fix: In certain cases where a backslash (\) is used in a data value that gets piped (e.g., text that contains "p\0.0233"), it might cause the data to get piped recursively many times and mistakenly output a mangle mess of text. (Ticket #108451)

- Bug fix: When selecting the Export Records method in the API Playground, if one or more values were selected for the Fields, Forms, or Records parameter, and then they were deselected to have no selections for them, the API request would return an error after clicking the Execute Request button on the page. (Ticket #108526)
- Bug fix: When clicking the "Delete data for THIS FORM only" button at the bottom of a data entry form, if the record currently exists in multiple arms and the form data being deleted is the only data in the current arm for the record, it would mistakenly delete the record from the arm in addition to removing the form data (although the record would still exist in other arms). This would not cause any data loss, technically, but the user would have to recreate the record in that arm again.

Version 11.1.1 (released on 2021-06-04)

CHANGES IN THIS VERSION:

- **Improvement:** The Easy Upgrade process should now take much less time to complete due to the implementation of a faster unzipping method used when extracting the source code files on the server from the REDCap upgrade zip file that was downloaded. (Note: This faster Easy Upgrade process may not be seen in this upgrade but in the upgrade after this one.)
- **Security Improvement for the External Module Framework**
 - Cross-site Request Forgery (CSRF) protection is now available for module pages/endpoints in framework version 8. If a module has a "framework-version" value of "8" or higher in the module's config.json file, then a valid redcap_csrf_token parameter will now be required on all POST requests (unless manually set as exempt), but will be automatically added behind the scenes in many cases.
 - **NOTE: If a module is on a framework version lower than 8 (or if the framework-version is not defined in config.json), then that module does not have CSRF protection.** So every module currently available in the REDCap Repo or otherwise will have to be updated in order to gain this CSRF protection feature. Thus, action is required by the module creator to add this security protection.
 - Many module pages where the REDCap page headers are included will not require any changes because the redcap_csrf_token parameter will automatically be added to static forms and jQuery post() method calls. In this case, updating "framework-version" to "8" in config.json is all that is required for adding CSRF protection.
 - The redcap_csrf_token POST parameter will need to be added to dynamically generated forms, jQuery ajax() calls, non-jQuery javascript requests, and POST requests on pages where the REDCap headers are not included. In those cases, the \$module->getCSRFToken() method should be used to set the value of the redcap_csrf_token POST

parameter. All POST requests made by module code should be tested before releasing a module update for this framework version.

- For the very small number of pages where CSRF tokens should not be required (like custom APIs), pages can be omitted from CSRF checking by adding them to config.json as follows (similar fashion to no-auth-pages). See the Configuration Example module for an example. Do NOT abuse this feature by using it in cases where you should be using CSRF tokens: {
"no-csrf-pages": ["some-page"] }
- Bug fix: When importing a file via the File Import API method in which the file exceeds the maximum allowed file size, it would return an error message that mistakenly referenced the max upload size of the server instead of the max upload size that is manually set for File Upload fields for the project, which might be a different value than the server maximum.
- Bug fix: If an error popup for a calculation or branching logic appears immediately when a survey page or data entry form initially loads (due to syntax errors in the branching/calculation), the stock language in the error message itself would mistakenly say "undefined" instead of actual text. However, this would not occur if the error message was displayed later on after the page had already loaded.
- Bug fix: Certain example plugins that are included in an initial installation of REDCap would mistakenly display PHP errors if they are accessed without a "pid" parameter in their URL. (Ticket #107782)
- Bug fix: Fixed error that prevented data from being saved in DDP Custom projects
- Bug fix: When using the "Select instruments/events" option for a custom record status dashboard, it would mistakenly not limit the dashboard to those instruments/events. (Ticket #107785)
- Bug fix: The "Preview Message by Record" feature on the Alerts & Notifications page would mistakenly not work when selecting a record from the drop-down list.
- Bug fix: The horizontal line on which users/participants write their signature was mistakenly not displaying in the "add signature" dialog on forms/surveys.
- Bug fix: The "Export Records" and "Export Reports" API method would mistakenly use the system-level default CSV delimiter (set on the User Settings page) when performing an API CSV export in "flat" format instead of correctly outputting a comma as the default CSV delimiter whenever the "csvDelimiter" parameter has not been defined in the API request. (Ticket #108082)
- Bug fix: When copying a project or creating a new project using a project template, it would mistakenly not copy over the project-level settings below (Ticket #108151):
 - Delete a record's logging activity when deleting the record?
 - Auto-delete all Data Export Files in the File Repository that were created more than X days ago?
 - Exempt the project from 2-step login?
 - Always force 2-step login in this project for EVERY login session?
 - Double Data Entry module
 - Date Shifting De-Identification Option: Date Shift Range

- Enable/disable the Shared Library for this project?

Version 11.1.0 (released on 2021-05-28)

CHANGES IN THIS VERSION:

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

- **New feature: Import/export alerts via CSV file on Alerts & Notifications page** - Users may export and import alerts to the same project or another project using a CSV file. If updating an existing alert, the unique alert ID must be included in the CSV file to identify the alert that the user wishes to modify. If the unique alert ID is left blank in the CSV file being uploaded, it is assumed that the user wishes to create a new alert.
- **New feature: Reorder alerts on Alerts & Notifications page** - In the options menu for any given alert, a user can select an alert to be moved to another position on the Alerts & Notifications page. When this is done, it notifies the user that moving the alert will in most cases cause the alert numbers to be renumbered for many existing alerts (since they are numbered based on their order). However, their alert title and unique alert ID will not change during this process.
- **Improvement:** If using Twilio for SMS/Voice Call verification for Two Factor Authentication, there is now a new alternative phone number field on the Security & Authentication page for providing a number only to be used for the Voice Call option for 2FA. This is useful if you are in a country where a single phone number cannot be used for both voice calls and SMS. If the new field is left blank, then the existing number will be used for both SMS and voice calls, but if this new field is utilized, its value will be used for the 2FA voice call option while the first number will only be used for the 2FA SMS option. (Ticket #99563)
- **Major bug fix:** If a project has randomization enabled and is using strata fields, if one or more strata fields exist on a survey instrument, and the survey containing the strata field(s) is opened after the record has been randomized, the strata fields would mistakenly not be disabled/readonly on the survey page but could be edited, which can cause major issues with a randomized project. It is expected that the strata fields should be disabled/readonly (whether on the data entry form or survey page) after the record has been randomized.
- **Change/improvement:** The To-Do List page now contains a "PID" column to display the project ID of the project for which the user request belongs.
- **Change:** For certain processes in which administrators perform an action that causes an email to be sent to a user (e.g., creating new Table-based users, rejecting/resetting a user's draft mode changes, and various requests from user sponsors via the Sponsor Dashboard), the email to the user would come from the admin processing the request or performing the work. Whereas many other similar tasks would send an email with the From address as the "Email Address of REDCap Administrator" value instead (which might be different from the current user). To make things more consistent now among these admin-related tasks, in all cases these emails will have their From address be the "Email Address of REDCap Administrator". (Ticket #88651)
- **Change/improvement:** If the REDCap database connection needs to use a specific value for the MySQL/MariaDB "binlog_format" setting that is different from the value set in the MySQL configuration file, it can now be set on the General Configuration page to MIXED, STATEMENT, ROW, or "Use system default setting" (default). It is

recommended to leave this with the default setting unless you absolutely know you need to change this and are intentional about it. This will provide greater compatibility with MySQL clusters, etc. (Ticket #107202b)

- Change: Updates and new content for the Help & FAQ page.
- Bug fix: When copying a project dashboard, the popup dialog might mistakenly display the name of the wrong dashboard.
- Bug fix: When accessing an invalid link for a public project dashboard, it would mistakenly not display any error message.
- Bug fix: When creating a custom link for a public project dashboard, it might mistakenly show a success message even when the custom link returns an error because it has already been taken.
- Bug fix: When a project has a very large number of arms, it may prevent the Record Status Dashboard from displaying data properly, and might also prevent the background "record list cache" process from completing successfully. (Ticket #107502)
- Bug fix: In server environments with PHP error reporting enabled, it would display a deprecation notice regarding the constructor of the PEAR Log class. (Ticket #55557b)
- Bug fix: When unlocking an instrument using the Unlock button at the bottom of a form, any fields with the @READONLY or @READONLY-FORM action tag would mistakenly become editable. (Ticket #107549)
- Bug fix: The <caption> HTML tag was mistakenly not allowed in field labels, survey instructions, and all places that display user-defined text on a webpage. (Ticket #107664)

Version 11.0.5 (released on 2021-05-24)

CHANGES IN THIS VERSION:

- **Major bug fix:** Reverted the following change from REDCap 11.0.4 (Standard) because it cause major parts of REDCap not to work anymore for some server configurations: "REDCap now sets "SESSION binlog_format=MIXED" for every connection in MySQL to provide greater compatibility with MySQL clusters (Ticket #107202)". (Ticket #107335)
- Bug fix: When a project is in Analysis/Cleanup mode, and a user wishes to set the project data to be read-only/locked, the popup dialog for doing this mistakenly has the wrong text for the dialog buttons.
- Bug fix: Most of the stock language used for displaying errors for calculations and branching logic were mistakenly not abstracted and therefore were not translatable into a non-English language for a project. (Ticket #106976)
- Bug fix: When using a Project XML file to create a project, it would mistakenly display an error that the record ID field could not be found in the XML file, which is not true. Bug emerged in REDCap 11.0.4.

Version 11.0.4 (released on 2021-05-21)

CHANGES IN THIS VERSION:

- Change: If the setting "Allow normal users to add or modify events and arms on the Define My Events page for longitudinal projects while in production status?" on the User Settings page is set to "Yes", then in any longitudinal projects that are in production status, normal users will no longer be able to modify the name of an existing arm or event. Since renaming an event or arm can have drastic downstream consequences, such as if the unique event/arm name is used in any calculations, branching logic, report filters, or other conditional logic throughout the project, users are now prevented from renaming events and arms in this case as an extra safety net. If a user attempts to rename an event or arm, it will now display an informational message letting them know that they should contact an administrator to complete that task for them.
- Bug fix: When using the Survey Queue in a longitudinal project, there are some scenarios where the queue might mistakenly not process the conditional logic correctly for a survey in the queue, thus causing it to return an empty queue or omit some surveys from being displayed in the queue. (Ticket #106801)
- Bug fix: PHP 8 compatibility error when viewing some custom record status dashboards. (Ticket #107055)
- Bug fix: When using the Data Resolution Workflow in which a normal user is attempting to delete a file attachment that has been uploaded to an opened data query, it would mistakenly display an error message every time. Instead it should display a message letting them know that only administrators are allowed to delete files attached to data queries. (Ticket #106984)
- Bug fix: PHP 8 compatibility error when using Two Factor Authentication. (Ticket #103721)
- Change: REDCap now sets "SESSION binlog_format=MIXED" for every connection in MySQL to provide greater compatibility with MySQL clusters. (Ticket #107202)
- Bug fix: PHP 8 compatibility error when using the DAG Switcher. (Ticket #107209)
- Bug fix: PHP 8 compatibility error that occurs in some specific cases when viewing the Record Status Dashboard. (Ticket #107225)
- Bug fix: When a project contains repeating events in which a report has filter logic to filter out specific repeating instances (e.g., [current-instance] <> "" and [current-instance] = [first-instance]), the report might mistakenly display no results or incorrect results when there is actually data to display. This does not affect repeating instruments but only repeating events.
- Bug fix: When a radio button field that is part of a matrix is embedded on a data entry form or survey page, the radio button's "reset" link would mistakenly not get embedded along with its associated field. Thus there would be no way to reset a matrix radio field that is embedded. Now the "reset" link appropriately gets moved to be immediately below its associated embedded radio field.

- Bug fix: To prevent Microsoft Outlook Safe Links from submitting surveys and junk data on its own, REDCap survey pages now block all POST requests that originate via the IP address range 52.147.217.*, in which it immediately returns an error message. This is in addition to a recent fix that protected surveys from Safe Links coming from another IP range (40.94.*.*).
- Bug fix: When REDCap is sending a large amount of email notifications from REDCap Messenger, such as when there is a General Notification or System Notification, if the cron job process for sending the emails takes too long, it may mistakenly get run several times, resulting in users receiving the same email notification several times. (Ticket #107208)

Version 11.0.3 (released on 2021-05-14)

CHANGES IN THIS VERSION:

- **Major bug fix:** When using an Adaptive or Auto-Scoring instrument downloaded from the REDCap Shared Library, in which that survey was set to use "Enhanced radios and checkboxes" via the Survey Settings page, the survey would not function and would not allow participants to submit their responses unless the survey was reverted to no longer using "Enhanced radios and checkboxes".
- Bug fix: The Survey Link Lookup page in the Control Center would fail when using a new survey link that has a 16 character length hash. (Ticket #106907)
- Bug fix: When a survey participant is taking a specific Adaptive or Auto-Scoring instrument (such as "NIH TB Hearing Handicap Age 65+") downloaded from the REDCap Shared Library that contains an initial descriptive text field (i.e., it has no choices to choose from), the survey would not function and would not allow participants to submit their responses. Note: This only affects 3 or 4 total Adaptive or Auto-Scoring instruments in the entire REDCap Shared Library.
- Bug fix: If a report contains filter logic containing around 900 or more field variables, the report might mistakenly return 0 results instead of the appropriate results. REDCap cannot parse more than 900 or so field variables in logic due to a limitation in PHP. If more than 900 field variables are used in a report's filter logic and it causes PHP to crash, REDCap will provide a helpful error message in this case to inform the user that there is either a syntax error in the filter logic or that it is too long and needs to be shortened. (Ticket #106834)

Version 11.0.2 (released on 2021-05-14)

CHANGES IN THIS VERSION:

- Change/improvement: A new database configuration check was added to the Configuration Check page that looks at the value of the optimizer_switch's "rowid_filter" setting to make sure that it is set to OFF in the MySQL configuration

file. Having that setting turned on can cause certain issues when running REDCap. (Ticket #103092)

- Change/improvement: Added four new redcap_log_event database tables for new projects to improve server performance when REDCap is querying logging data for a project. Note: This will not improve performance when querying the logging records of existing projects but only applies to projects created after upgrading to v11.0.2 or higher.
- Change: The alphanumeric hash that exists in all survey links has been increased in length from 10 to 16. Any new survey links created will have a 16 character length hash.
- Bug fix: If a data export takes a long time and the user is away from the computer so long that the auto-logout dialog displays on the page, the auto-logout dialog would mistakenly be displayed underneath the "Exporting data" popup, thus preventing the user from seeing it and preventing the auto-logout process from occurring. (Ticket #106545)
- Bug fix: When not using record auto-numbering in a project while viewing the Add/Edit Records page or Record Status Dashboard, if a record name is hand-entered in a different case than in which it was saved (e.g. "abc" vs "ABC"), it might cause issues on the Record Home page, such as not displaying Custom Labels for Repeating Instruments. (Ticket #106559)
- Bug fix: When viewing a custom Record Status Dashboard in a project that has Double Data Entry enabled, the custom dashboard's "sort by" setting (if utilized) would mistakenly not sort the dashboard's records correctly for any user that has the DDE #1 or #2 designation. (Ticket #105030)
- Bug fix: When REDCap is reporting its general stats to the consortium, it would mistakenly fail to send them in some cases where the URL ended up being more than 2000 characters long.
- Bug fix: A survey theme's background color might mistakenly not get applied to a radio/checkbox matrix on the survey page, thus displaying part of the matrix in the wrong color. Bug emerged in the previous version. (Ticket #106712)
- Bug fix: If the system-level setting for setting Project Dashboards as "public" is set to "Yes, but an administrator must approve the request", that feature would not work correctly and would mistakenly allow normal users to set their dashboards as public without the approval process. (Ticket #106813)
- Bug fix: If the system-level setting for setting Project Dashboards as "public" is set to "Yes, but an administrator must approve the request", if a normal user clicks the "Copy" button to copy a dashboard that has been set as public, it would mistakenly set the newly created dashboard as public also. In this situation, it should set it not to be public, and a user would need to edit the newly created dashboard and click the "Set as public" setting to put in a new request for an admin to approve this new dashboard to be public. (Ticket #106813b)
- Bug fix: Clicking the "Enable color-blind accessibility" on public Project Dashboards would fail to work. (Ticket #106901)

- Bug fix: The chart legend was mistakenly not being displayed for the Smart Charts scatter-plot, line-chart, and bar-chart when using a grouping field for them. (Ticket #106543)
- Bug fix: The setting "Designate an email field for communications (including survey invitations and alerts)" on the Project Setup page would mistakenly be disabled and not usable unless the project has the setting "use surveys in this project?" enabled, which is not correct since the designated email setting can be used for more than just surveys.

Version 11.0.1 (released on 2021-05-07)

CHANGES IN THIS VERSION:

- **Improvement:** The Smart Charts [pie-chart] and [donut-chart] now display the percentage value on top of each colored slice in the chart.
- **Improvement:** On the Calendar page when viewing the "View/Edit Calendar Event" popup for a calendar event that is attached to a record, the popup now displays a "View Record Home Page" link next to the record name to allow the user to easily navigate to the record.
- **Major bug fix:** Alerts & Notifications that are set to be sent via SMS or Voice Call would mistakenly not get sent whenever the alert is triggered. Bug emerged in REDCap 10.6.18 LTS and 11.0.0 Standard. (Ticket #106260)
- Bug fix: When viewing the public URL of a project dashboard, the dashboard's project_id would mistakenly not get passed to the redcap_every_page_before_render hook.
- Bug fix: The wrong language is mistakenly used in the Smart Variable documentation for the ":no-export-link" Smart Table parameter. (Ticket #106023)
- Bug fix: When using the wizard on the Project Dashboard creation page, it might mistakenly insert the unique report name for the wrong report into Step 4 when selecting an option in the report drop-down in Step 3. (Ticket #106013)
- Bug fix: Smart Charts that are "bar-chart" type with the ":bar-vertical" parameter would mistakenly have the field label displayed on the Y-axis when instead it should be located on the X-axis for vertical display. (Ticket #106017)
- Bug fix: On surveys that have Enhanced Radio & Checkboxes enabled, in which radio fields are embedded inside checkbox labels or checkboxes are embedded inside radio labels (or other variations of these), some of the options might mistakenly not be selected after clicking on them. (Ticket #105880)
- Bug fix: When using the ":inline" piping parameter on a File Upload field that has a PDF file uploaded to it, the PDF would fail to successfully embed on the page and would mistakenly display a bunch of HTML in its place. (Ticket #105462)
- Bug fix: The External Service Check for the NML Field Bank service was mistakenly missing on the Configuration Check page. (Ticket #106086)

- Bug fix: When using the Designated Phone Field with the Twilio telephony services for surveys, the participant's record ID might mistakenly not be displayed on the Survey Invitation Log in certain cases. (Ticket #49955)
- Bug fix: When creating a new Table-based authentication user on the "Create single user" page in the Control Center, it is possible to create a user without entering a value for their username. That should not be allowed. (Ticket #106103)
- Bug fix: Smart Charts that are "bar-chart" type and use a second field for grouping might mistakenly display the wrong counts in the chart if there exist any blank values for the grouping field, or it might mismatch the counts for the wrong grouping category in certain scenarios. (Ticket #106017)
- Bug fix: When using the "Move to Production status" public survey for "Custom Surveys for Project Status Transitions" when users are not allowed to move projects to production on their own but must request an administrator do so on their behalf, if the user failed to select the radio button asking "Keep existing data or delete?" in the dialog pop-up and then they completed the public survey afterward, the "Working..." progress message would appear and never go away, thus preventing the request from being submitted correctly. (Ticket #106173)
- Bug fix: When the datediff cron job is running for Alerts & Notifications that contain datediff+today/now in their conditional logic, the cron job might mistakenly take a long time to complete (or might time out) because the record list cache has not been created yet for the projects for which the cron job is processing. To prevent the cron job from taking too long and possibly timing out, it will attempt to build the record list cache in real time for each project it is processing. This may mean that initial attempts of the cron job may still take a long time, but later instances of the cron should be much faster.
- Bug fix: When the datediff cron job is running for Automated Survey Invitations that contain datediff+today/now in their conditional logic, the cron job might mistakenly take a long time to complete (or might time out) because the record list cache has not been created yet for the projects for which the cron job is processing. To prevent the cron job from taking too long and possibly timing out, it will attempt to build the record list cache in real time for each project it is processing. This may mean that initial attempts of the cron job may still take a long time, but later instances of the cron should be much faster.
- Change: The REDCap cron job now automatically resets a project's record list cache if the project has had some activity in the past week and if its cache is more than 5 days old. In previous versions, it would only reset the cache if the project had some activity in the past week when its cache was more than 3 days old. This was changed because the cache is more stable in recent versions and doesn't require being reset quite as often.
- Bug fix: When using the survey setting "Time Limit for Survey Completion" in which a user clicks the clock icon for a participant in the Participant List in order to modify their Link Expiration time, clicking the "Expire it now" button in the dialog would mistakenly fail to do anything because of a JavaScript error. (Ticket #106167)

- Bug fix: When a text field is embedded inside a checkbox field, clicking inside the text box mistakenly causes its parent checkbox to become unchecked. (Ticket #105001b)
- Bug fix: When launching the Clinical Data Pull embedded window inside an EHR user interface, it might mistakenly say that the current web browser is not compatible.
- Bug fix: In some cases, upgrading to REDCap 11.0.0 mistakenly did not load the new project template that illustrates Project Dashboards, etc. If that project template is missing, it will automatically be added when upgrading to 11.0.1. (Ticket #105976)
- Bug fix: If a field is using the @CALCDATE action tag that references a field variable as the second parameter, if that second parameter field has a blank value, the @CALCDATE calculation might return an incorrect value when instead it should be returning a blank value. This only occurs on the server-side (PHP) processing of @CALCDATE when a form/survey is being saved, and does not occur with the client-side (JavaScript) version of the function. This means that while the value looks blank when viewing a data entry form or survey page, the incorrect value would be seen on reports, data exports, or wherever the @CALCDATE field is being piped. (Ticket #106243)
- Bug fix: If using a survey-level designated email field, in certain cases the Participant Email displayed in the Survey Invitation Log might mistakenly be blank or might display the project-level designated email field instead. Bug emerged in REDCap 10.6.18 LTS and 11.0.0 Standard.
- Bug fix: When a survey invitation is sent to a participant via a Twilio SMS message, viewing the message afterward in the Survey Invitation Log would mistakenly display extra text (e.g., "-- To begin the survey, visit...") appended to the message that did not actually get sent to the participant in the SMS message. Additionally, when viewing an SMS message in the Survey Invitation Log, it would mistakenly display any URLs in the message as clickable links instead of correctly displaying them as non-clickable URLs, which is more accurate to how they are seen by the recipient. (Ticket #104997)
- Bug fix: When a project has been set up with Automated Survey Invitations and is using the Designated Email Field, the Public Survey Link page might mistakenly display the red box saying "WARNING: The designated email field does not exist on the first survey", which might not be true if a survey has been orphaned (created in the past but then later removed) in which the survey had one or more ASI's set up for it.
- Bug fix: Dots/periods have been allowed in checkbox codings since REDCap 9.9.0, but the data dictionary import process would still mistakenly display an error message saying that this is not allowed, which is not correct. (Ticket #106375)
- Bug fix: When a project is using Twilio for sending survey invitations, and an Automated Survey Invitation is set to "use participant's preference" for the invitation type/delivery method, then any participant whose delivery preference is "email" would mistakenly receive the expected email body text but with extra text appended to it (e.g. "Please take this survey. You may open the survey..."). In many cases, this

means that the email body is duplicated in the email, which is not desirable. (Ticket #102953)

- Bug fix: When editing a field in the Online Designer and using different background colors or text colors in tables added via the rich text editor, a survey theme's color might mistakenly override a table row's or table cell's background/text color when viewing the field on a survey page. (Ticket #106340)
- Change/improvement: The green highlight background color will no longer appear when a user/participant puts focus on or clicks on a field that is embedded inside another field on a data entry form or survey. From now on, it will only highlight the field with green for non-embedded fields. This should improve the user experience when many fields are embedded in the same table row on the page in which the green highlight would highlight all of them (sometimes making the entire page green), which is often not desirable.
- Bug fix: For certain projects, unique report names were mistakenly not being generated for some or all reports in the project. (Ticket #106366)

Version 11.0.0 (released on 2021-04-30)

CHANGES IN THIS VERSION:

- **New feature: Project Dashboards**
 - **INTRO:** Project Dashboards are pages with dynamic content that can be added to a project. They can utilize special Smart Variables called Smart Functions, Smart Tables, and Smart Charts (described below) that can perform aggregate mathematical functions, display tables of descriptive statistics, and render various types of charts, respectively. User access privileges are customizable for each dashboard, and anyone with Project Design privileges can create and edit them. A Wizard is provided on the Project Dashboard creation page to help users easily construct the syntax for Smart Functions, Smart Tables, or Smart Charts, and a basic list of helpful examples is also included. Example dashboard: <https://redcap.link/dash1>
 - **Setting project dashboards as “public”**
 1. If enabled at the system-level (described in detail below), any project dashboard can be enabled as “public”, which means it can be accessed at a unique URL that does not require any authentication. Making a dashboard public is useful if you wish for people to view it without having to be REDCap users or log into REDCap. Public dashboards are simply standalone pages that can be viewed by anyone with a link to them.
 2. Users can opt to create a custom/short url (via the <https://redcap.link> service) for any project dashboard that is enabled as “public”.

3. **System-level setting to allow/disallow public dashboards** (on the User Settings page in the Control Center)
 - By default, normal users will be able to set any project dashboard as public. If you do not want users to do this or even know about this feature, you can completely disable it on the User Settings page. Alternatively, it can be set to “Allow public dashboards with admin approval only”. If set to allow public dashboards after approval by an admin, the admin will receive the request from the user via the To-Do List page (and via email, if the email notification setting is enabled on the To-Do List page), and after the admin approves the request, the user will receive an email regarding the response to their request.
- **Setting to control data privacy on public dashboards and other public pages**
 1. The User Settings page in the Control Center has a setting to define the “Minimum number of data points required to display data for any Smart Charts, Smart Tables, and Smart Functions on a *public* project dashboard, survey queue, or survey page”. **By default, it is set to a value of “11”**. While only aggregate data is displayed in Smart Charts, Smart Tables, and Smart Functions, if any of these utilize very few data values, it might pose a threat to an individual’s data privacy if these are being displayed on *public* dashboards and other public pages (i.e., where authentication is not used).
 2. If someone is viewing a public page that has Smart Charts, Smart Tables, and Smart Functions that utilize data that does not meet the minimum data point requirement, instead of displaying the chart/table/number on the page, it will instead display a notice saying “[INSUFFICIENT AMOUNT OF DATA FOR DISPLAY]” with a pop-up note with details about the minimum data requirements.
 3. **Project-level override:** While this behavior is controlled by a system-level setting, the system-level setting can be modified by an administrator via a project-level override for any given project on the “Edit A Project’s Settings” page.
 4. Note: This setting does not get used when viewing project dashboards inside a project (i.e., at a non-public URL).
- **PDF export:** Each project dashboard can be exported as a one-page PDF file.
- **Dashboard cache:** To prevent server performance degradation, each project dashboard will have its content cached (stored temporarily)

automatically for up to 10 minutes at a time rather than generating its content in real time every time the dashboard is loaded. It will note at the top right corner of the dashboard page when the dashboard content was last cached. If a user is viewing the dashboard inside a project (i.e., not via a public dashboard link), they have the option at the top right to “Refresh” the dashboard at will, which will refresh/generate its content in real time. Note: The refresh option will only be displayed on the page when the dashboard content is at least 30-seconds old.

- **New feature: Smart Functions**

- Smart Functions are aggregate mathematical functions that are utilized as Smart Variables. The following Smart Functions exist: [aggregate-min], [aggregate-max], [aggregate-mean], [aggregate-median], [aggregate-sum], [aggregate-count], [aggregate-stdev], and [aggregate-unique]. Each represents the mathematical functions minimum, maximum, mean/average, media, sum, count, standard deviation, and unique count, respectively. Each must have at least one field attached to it that follows a colon - e.g., [aggregate-mean:age]. Multiple fields may be used in each one, which will perform the function over all the data values of all the fields. By default, the functions will utilize all data values for all records in the project. To limit the data values being utilized to a subset of the total project data, see the Smart Variable documentation on how to apply filters, such as attached unique report names, DAGs, and other parameters
- Note: When using [aggregate-count:record_id], in which “record_id” in this example represents whatever the variable of the Record ID field is, it performs a special count that does not literally count the number of data values but instead returns a count of the total number of records in the project. This is a quick way to display the total record count of the project.
- Smart Functions can be used anywhere in a project where piping is allowed, and can even be used inside calculations, branching logic, and other conditional logic (report filters, alert conditions, etc.).

- **New feature: Smart Tables**

- Smart Tables are tables displaying aggregate descriptive statistics in which the results of any or all of the following stats functions can be displayed for one or more fields: minimum, maximum, mean/average, media, sum, count, standard deviation, count of missing values, and count of unique values.
- Smart Tables are represented with the Smart Variable [stats-table], which accepts as a parameter the variable names (comma delimited) of all the fields to be displayed as separate rows in the table. There is no limit to the number of fields that can be used. For example, [stats-table:field1,field2,field3].

- By default, all available columns will be displayed in the table and are as follows: Count, Missing, Unique, Min, Max, Mean, Median, StDev, Sum. To display only a subset of the columns, you may provide any of the following designations (comma-separated) that represent a specific column in the table: count, missing, unique, min, max, mean, median, stdev, sum. For example, [stats-table:field1,field2,field3:mean,max].
- By default, each stats table will have an "Export table (CSV)" link displayed immediately below it to allow users to download the table as a CSV file. But if users wish to hide the export link, they can simply attach ":no-export-link" to the Smart Variable, which will cause the link not to be displayed. For example, [stats-table:field1,field2,field3:no-export-link].
- Smart Tables can be used anywhere in a project where piping is allowed.
- **New feature: Smart Charts**
 - Smart Charts are various aggregate plots and charts utilized as different Smart Variables. The following plots are available for use: bar charts, pie charts, donut charts, scatter plots, and line charts. These are all represented by the following Smart Variables, respectively: [bar-chart], [pie-chart], [donut-chart], [scatter-plot], and [line-chart]. These Smart Variables accept one or more field names and also other optional parameters, as described below for each.
 - **Bar charts** - Displays a bar chart for a single multiple choice field. It can optionally perform color grouping if a second field (multiple choice only) is provided. The fields must be comma-separated. For example, [bar-chart:field,grouping-field:parameters]. Bar charts have optional parameters that can be applied to alter their appearance. By appending the parameter ":bar-stacked" when two fields are used, the bars in the chart will appear stacked on top of each other rather than side by side. By default, bar charts are displayed with their bars going horizontally, but by appending the parameter ":bar-vertical", the orientation will be changed to display vertically instead.
 - **Pie charts** - Displays a pie chart for a single multiple choice field. For example, [pie-chart:field:parameters].
 - **Donut charts** - Displays a donut chart for a single multiple choice field. Note: A donut chart is essentially the same as a pie chart but with the center removed. For example, [donut-chart:field:parameters].
 - **Scatter plots** - Displays a scatter plot of one number/date/datetime field for the x-axis and a second field (number field only) for the y-axis. (If a second field is not provided, a random value will be assigned for the y-axis.) It can optionally perform color grouping if a third field (multiple choice only) is provided. All fields must be comma-separated. For example, [scatter-plot:x-axis-field,y-axis-field,grouping-field:parameters].
 - **Line charts** - Displays a line chart of one number/date/datetime field for the x-axis and a second field (number field only) for the y-axis. It can

optionally perform color grouping if a third field (multiple choice only) is provided. All fields must be comma-separated. Note: A line chart is essentially the same as a scatter plot except with dots connected with a line. For example, [line-chart:x-axis-field,y-axis-field,grouping-field:parameters].

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

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

- **:unique-event-names Unique Event Names** - For Aggregate Functions, Charts, and Tables, filter the data being used to specific events (longitudinal projects only) by providing an event's unique event name (found on the Define My Events page). You may use one or more unique event names (comma-separated). Note: This parameter can be used with any of the other parameters except unique report names.
- **:user-dag-name "user-dag-name"** - For Aggregate Functions, Charts, and Tables, filter the data being used to the records assigned to the *current user's Data Access Group* by using the literal value 'user-dag-name'. Note: This parameter will only work in a context where an authenticated user belongs to a project and has been assigned to a DAG in the project (this excludes survey pages and public project dashboards). This parameter can be used with any of the other parameters except unique report names.
- **:unique-dag-names Unique DAG Names** - For Aggregate Functions, Charts, and Tables, filter the data being used to the records assigned to specific Data Access Groups by providing a DAG's unique group name (found on the Data Access Groups page). You may use one or more unique DAG names (comma-separated). Note: This parameter can be used with any of the other parameters except unique report names.
- **:bar-vertical "bar-vertical"** - Display a bar chart with the bars going vertically instead of horizontally (the default) by using the literal value 'bar-vertical'. Note: This parameter can be used with any of the other parameters.
- **:bar-stacked "bar-stacked"** - Only for bar charts using two fields, display the bar chart with the bars stacked on top of one another for each choice. Whereas the default view is that the bars of each field are displayed side by side to show the color grouping. To enable this, use the literal value 'bar-stacked'. Note: This parameter can be used with any of the other parameters.
- **:no-export-link "bar-stacked"** - Only for bar charts using two fields, display the bar chart with the bars stacked on top of one another for each choice. Whereas the default view is that the bars of each field are displayed side by side to show the color grouping. To enable this, use the literal value 'bar-stacked'. Note: This parameter can be used with any of the other parameters.
- **NOTE: Using Smart Functions/Tables/Charts elsewhere in a project** - While project dashboards are an excellent place to use Smart Functions, Smart Tables, and Smart Charts, it is important to know that Smart Functions/Tables/Charts can actually be used *almost anywhere* in a project, such as on data entry forms, on survey pages, and in report instructions (to name a few). You can use Smart

Functions/Tables/Charts anywhere that piping can be used. Click the green "Smart Variables" button on the Project Setup page to learn more about them. Note: The only place that Smart Charts cannot be used is inside the body of outgoing emails.

- **NOTE: Smart Functions/Tables/Charts do not yet work in the REDCap Mobile App;** however, it is planned that they eventually will (to a certain degree).
- **NOTE regarding permissions for Smart Functions/Tables/Charts:**
 - DAG permissions (i.e., filtering out records not assigned to the current user's DAG) are **NOT applied by default** to Smart Charts/Tables/Functions but are only applied when the Smart Chart/Table/Function utilizes a unique report name as a parameter (thus mimicking the natural DAG-filtering behavior of reports themselves) OR when the Smart Chart/Table/Function utilizes the "user-dag-name" parameter. This means that if a user is assigned to a DAG and views a project dashboard with the Smart Chart [scatter-plot:weight], for example, the plot will display data for ALL records in the project and not just the user's DAG. To limit the plot to just data in the user's DAG, it could be changed to [scatter-plot:weight:user-dag-name] in this case.
 - Smart Charts/Tables/Functions that utilize a unique report name as a parameter for data filtering purposes will still function and display normally even if the user does not have explicit access to view that specific report referenced as a parameter.
- **New feature: CSV Delimiter as a user-level preference** - The My Profile page now has a new user preference to allow a user to set their own preferred CSV delimiter (e.g., comma, semi-colon) that will be used as the delimiter character in all CSV file downloads throughout REDCap, such as data dictionary import/export, event import/export, user rights import/export, etc. This setting is not used by data imports and exports because those already have a way to specify the CSV delimiter manually. The system-level default value for this user preference can be set on the User Settings page in the Control Center, in which all new users created afterward will have their user-level preference set with this system-level default value. To modify all existing users' preference after upgrading (if your users would not want a comma delimiter), it will require running an "update" query in the database, such as this: `UPDATE redcap_user_information SET `csv_delimiter` = ',' ;`
- **Improvement:** Report "description" text now utilizes the rich text editor. Additionally, users may perform piping into a report's description, such as project-level Smart Variables, including Smart Charts, Smart Functions, and Smart Tables.
- **Improvement:** New option for Project Templates called "copy records", which will copy any existing records in the template to the new project created from the template. This option can be enabled for any new or existing Project Templates.
- **Improvement:** A new Project Template was added to illustrate new features in 11.0+. The new template is named "Project Dashboards, Smart Functions, Smart Tables, & Smart Charts".

- **Change/improvement:** The Logic Editor popup is now utilized when editing the "Action Tags/Field Annotation" text box in the Online Designer. (Ticket #103007)
- Bug fix: When exporting data via the Export Records API method as type=eav, it would mistakenly fail to include the value of the redcap_event_name field (and would export it as blank/null) if the project is longitudinal and the exported data format is XML or JSON. Bug emerged in REDCap 10.6.16 (LTS) and 10.9.3 (Standard). (Ticket #105673)
- Bug fix: When attempting to use the Easy Upgrade on an AWS Quick Start deployment of REDCap, the upgrade process may fail due to "\r" characters in the upgrade shell script. (Ticket #103939)
- Bug fix: When creating a project via a Super API Token, the API call would fail due to a fatal PHP error, thus preventing the project from being created. Bug emerged in REDCap 10.6.16 (LTS) and 10.9.3 (Standard).
- Bug fix: When importing data (via Data Import Tool, API, or REDCap::saveData), all records would mistakenly have spaces trimmed off the beginning and end of every value being imported. This would prevent the data from being imported as-is. It now no longer trims whitespace off of the beginning and end of data values during data imports.
- Bug fix: On certain occasions, an alert that is triggered may mistakenly send an email to the "Email to send email-failure errors" recipient multiple times (instead of just once) or may send it to that recipient when it is not supposed to.
- Bug fix: A field using the @CALCTEXT action tag would mistakenly return a blank value whenever it should be returning a value of 0. (Ticket #105128)
- Bug fix: When using the concat() function in a @CALCTEXT field, the calculation might mistakenly fail if certain characters such as "+" are utilized inside the concat() function. (Ticket #105445)
- Bug fix: When a text box field is embedded inside a checkbox field on a survey that is using Enhanced Checkbox/Radio Fields, the checkbox would be unable to be selected. (Ticket #97954)
- Bug fix: When a checkbox field is embedded inside a checkbox field, it would mistakenly check the first sub-checkbox whenever checking the parent checkbox. (Ticket #97954)
- Bug fix: When a radio field is embedded inside a checkbox field, several things would function incorrectly when clicking on the labels of the radio fields or their "reset" link. (Ticket #105001)

Version 10.9.4 (released on 2021-04-22)

CHANGES IN THIS VERSION:

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability and Cross-site Request Forgery (CSRF) vulnerability were discovered where a malicious user could potentially exploit them on two specific Control Center pages.

- Bug fix: When upgrading to REDCap version 10.9.2 from a version lower than 10.5.0, the REDCap Messenger system notification that announces the @SETVALUE action tag was mistakenly still referring to it by its previous name (@PREFILL).
- Bug fix: The description of the @SETVALUE action tag mistakenly mentioned that it makes the field read-only, which is incorrect. (Ticket #105072)
- Bug fix: When a @CALCTEXT field is used in a longitudinal project, in which its value gets set but all other fields on its instrument do not have a value saved, a red form status icon would mistakenly be displayed for its instrument on the Record Home page and Record Status Dashboard. The status icon should instead remain gray in this case even when calc fields and @CALCTEXT fields have a value. (Ticket #105061)
- Bug fix: PHP 8 compatibility error in LDAP authentication code. (Ticket #105100)
- Bug fix: If questions are being prepopulated on a survey using the @DEFAULT action tag, in which those fields are also being piped to other places on that same survey page, then the piping would mistakenly not occur when the survey page loads but only after one of the piped fields' values are modified on the page. Bug emerged in REDCap 10.9.3. (Ticket #105220)
- Bug fix: If a record is deleted via the Delete Record API method, and then another record is created later having the same record name, the Data History popup for a given field would mistakenly list the logged events from the previously-existing record when instead it should not. (Ticket #105144)
- Bug fix: If using the :inline piping parameter for a File Upload field when uploading an image file to the field while the piping location exists on the same page, deleting the image from the File Upload field via the "Remove file" link would mistakenly not remove the inline image that is piped on the page until the page is reloaded. (Ticket #105106)
- Bug fix: If submitting a public survey, and the record ID field is referenced in the equation of a calculated field located on another instrument, the calculated field's value would mistakenly not get saved. (Ticket #105178)
- Bug fix: If using Twilio telephony services for surveys, in which the "Control each participant's invitation preference using a multiple choice field" option is enabled and references a field that exists on an instrument that is not enabled as a survey, then modifying that field's value on a survey/form would mistakenly not change the participant's invitation preference as reflected in the Participant List. (Ticket #104907)
- Bug fix: When using Twilio telephony services in which multiple projects are using the same Twilio Account SID but have different Twilio phone numbers, some of the Twilio logs on the Twilio website might mistakenly not get erased as they should (REDCap automatically deletes all Twilio logs after each SMS or phone call for privacy purposes).
- Bug fix: If a repeating survey has one repeating instance of the survey that has been locked at the instrument level, then if another repeating instance (that is not locked) of that same survey is opened, it would mistakenly display an error to the participant saying that the response has been locked, which is not true.

- Bug fix: When using the Data Resolution Workflow and viewing an opened query that has not yet been assigned to a user, it would mistakenly not allow you to assign the query to a user. (Ticket #105205)

Version 10.9.3 (released on 2021-04-16)

CHANGES IN THIS VERSION:

- **New authentication method: Azure Active Directory OAuth2** - REDCap now includes a new authentication method to allow users to authenticate via Microsoft's Azure AD. This will be especially useful for institutions that are deploying REDCap on the Azure cloud platform. Thanks for Neal Blackburn and Matthew Peterson at Oregon State for their collaboration to help make this new addition possible. For more info on Azure AD and how to set up a client application for REDCap authentication, see <https://redcap.link/azuread>.
- **Improvement:** When viewing files in the File Repository that are archived from a data export, it now displays the data export details (as seen on the Logging page) for each export listed in the table on the "Data Export Files" tab. This provides more context regarding the contents of the data in the archived export files.
- Change: The @PREFILL action tag has been renamed to @SETVALUE, which more accurately captures how it behaves. Some confusion had occurred regarding this action tag's behavior simply because of its name. This change to the name is backward compatible so that projects already using @PREFILL will still work with its legacy counterpart (i.e., @PREFILL and @SETVALUE will work equivalently), but @SETVALUE will be the preferred name going forward. The description of the @SETVALUE action tag in the Action Tags documentation notes this name change.
- Change: Any fields using the @PREFILL/@SETVALUE action tag will no longer be read-only/disabled on survey pages and data entry forms but will be editable. Some users had complained of the read-only attribute as being too restrictive and inflexible, thus preventing some valid use cases. If users wish to make the field read-only, it is recommended they simply add the @READONLY action tag as a means of maintaining the previous read-only behavior.
- Change: In many places in the REDCap code where MD5 hashing is performed on non-security-related things, the MD5 function has been replaced with the SHA1 function. (Note: MD5 is never used on any security-related code in REDCap.)
- Bug fix: When adding a user to a project by assigning them to a role, if the user's username contains spaces or apostrophes, the process might break due to a JavaScript error, thus preventing the user from being added to the project and role. Bug emerged in REDCap 10.9.2.
- Bug fix: When viewing a "PDF Export with data" logged event on a project's Logging page, it might mistakenly display "(Event #)" next to the record name when the project is not longitudinal. It should only display the event for that logged event in longitudinal projects. Bug emerged in REDCap 10.9.2.

- Bug fix: When generating System Notifications for REDCap Messenger during a REDCap upgrade, it was mistakenly using the PHP constant NOW instead of the MySQL function NOW() in a specific query. For that specific process, it now uses the MySQL function NOW() only when hosting REDCap on Google App Engine, otherwise it uses the PHP constant NOW, as it did in previous versions. Bug emerged in 10.9.2.
- Bug fix: When a field with the @PREFILL action tag is being piped somewhere on the same page, the field would mistakenly not have its value piped successfully when the page is loaded. (Ticket #104613)
- Bug fix: It was impossible to disable the "Auto logout time" setting (i.e., by setting its value to "0") on the Security & Authentication page in the Control Center because it would prompt the admin to enter a minimum value of "3". (Ticket #104680)
- Bug fix: If a File Upload field is embedded inside a checkbox choice label, in which the File Upload field has branching logic so that it is only displayed when the checkbox next to it is checked, the upload or download process for the File Upload field would mistakenly cause the checkbox to be checked/unchecked, thus causing the issue of hiding the File Upload field while trying to upload/download its file. (Ticket #104664)
- Bug fix: When a user attempts to assign a new user to a DAG and user role at the same time on the User Rights page, the pop-up for selecting the DAG and role would mistakenly close immediately after selecting an item from one of the drop-downs. Bug emerged in REDCap 10.9.2 Standard. (Ticket #104655)
- Bug fix: In the "Compose Survey Invitations" dialog on the Participants List page, the "Display name" drop-down (when setting the "From" address) would mistakenly be disabled and could not be used. Bug emerged in REDCap 10.9.2. (Ticket #104749)
- Bug fix: When performing a data import that contains checkbox fields in which a checkbox has a Missing Data Code previously saved for it, any checkbox options being set to "1" for that field during the data import will mistakenly not remove the existing Missing Data Code from the field. Thus the field ends up with a Missing Data Code and other checked values, which should not happen. Additionally, when viewing the field on a data entry form afterward, the field would mistakenly still appear to have a Missing Data Code. (Ticket #104712)
- Bug fix: When an instrument has already been enabled as a survey and it does not have the e-Consent Framework enabled, if a user then navigates to the Survey Settings page and enables the e-Consent Framework for that survey, the "Allow e-Consent responses to be edited by users?" option is mistakenly not checked by default. That option should be checked by default when enabling the e-Consent Framework. (Ticket #104869)
- Change: Added a recommendation in the "Configure Twilio Settings" popup to suggest that the users consider adding a field that says, 'I agree to be contacted by text or phone' (or something similar) as means of them consenting participants to being contacted by text or phone.
- Bug fix: When a matrix checkbox field is embedded on a survey page or data entry form, and another field has branching logic that references that embedded matrix

checkbox, the branching logic would fail to work successfully when the trigger checkbox is checked/unchecked. (Ticket #104866)

- Bug fix: If an administrator has set a project to be "Offline", users could inadvertently still use the API for that project, which should not be allowed. (Ticket #104931)
- Bug fix: Depending on the username or the name of a Data Access Group, the "(+1)" text that signifies the amount DAG Switcher assignments might mistakenly not display next to the user's current DAG on the User Rights page's table of users.
- Change: Slight change in an SQL query used to generate the Participant List that improves the loading performance of that page. (Ticket #95693)
- Bug fix: If a user/participant adds a signature to a Signature field in which they resize the popup to make it larger while signing it, it would result in a larger image being saved that would mistakenly not always fit correctly in an exported PDF of that instrument. (Ticket #104927)
- Bug fix: Data Quality rules A and B might mistakenly not display all valid discrepancies for a field if the field's branching logic contains certain Smart Variables. (Ticket #99077)
- Bug fix: When performing an API data export of CSV data in EAV data format, it would mistakenly display the CSV "event" header as "event_id" instead of "redcap_event_name".
- Bug fix: When importing data via the API in EAV format (where type=eav) and using the value "new" to perform auto-numbering of the redcap_repeat_instance field, it was mistakenly not returning an error for this. This is not allowed since the "new" value for redcap_repeat_instance cannot be used when type=eav but only for type=flat. This has also been added to the API documentation to inform users of this limitation. (Ticket #104491)
- Bug fix: If a user is idle on a data entry form, and the red auto-logout message appears and states that their session has ended, if they attempt to close that browser tab, it would mistakenly display the prompt asking them if they wish to leave the site. It should not display that prompt. (Ticket #104948)

Version 10.9.2 (released on 2021-04-09)

CHANGES IN THIS VERSION:

- **Improvement:** Assign a user to a DAG at the same time as adding the user to the project - Whenever a user is being added to a project via the User Rights page, if Data Access Groups are being utilized in the project, a new option will appear (whether if adding the user with custom rights or if assigning them to a user role) that allows you to assign the user to a DAG at the same time as adding them to the project. This helps prevent a common issue where a newly added user might temporarily have access to the records of **all** DAGs in the project prior to the user being assigned to a DAG immediately after getting added to a project. By making

this two-step process a single step, it avoids possible data access issues for users who need to be assigned to a DAG.

- **Improvement:** When exporting a PDF of all record data via the "Other Export Options" page, a copy of the downloaded PDF will now be archived and stored in the File Repository, similar to how other data exports (i.e., CSV, SPSS) are archived. This will help REDCap users keep better track of exactly what data was downloaded by someone when they export a PDF of all records in the project. Note: This does not apply to other PDF exports but only to the "all records" PDF export on the "Other Export Options" page.
- **Improvement:** The project logging page now displays more information for PDF Exports that contain data, such as displaying the record name, event, and instrument for the downloaded PDF.
- **Change/improvement:** When using the "Upload Users (CSV)" option on the User Rights page, it now displays a checkbox option in the dialog to allow the user to optionally send an email notification to all new users being added to the project via this import process. In previous versions, no users would be notified via email if they were added to the project via the "Upload Users (CSV)" option but only if added using other methods.
- **Improvement:** Minor performance improvement when loading the Participant List page, especially for surveys that are not repeating instruments and surveys that do not exist on repeating events.
- **Change/improvement:** There is a new check on the Configuration Check page for Windows web servers only that checks if the REDCap Cron Job's Scheduled Task is set to "Run a new instance in parallel". If the scheduled task is not set with that setting, then the REDCap Cron Job will not be able to run in parallel to itself, which is often needed. This check merely checks to see if the cron job has been running every minute over the past 3 days, and if there are gaps and it has not been running every minute, this implies that perhaps the Scheduled Task is not set properly to run in parallel.
- **Change/improvement:** The User Access Dashboard now displays "Last logged activity" for each project displayed on that page.
- Bug fix: If the body of an alert contains an inline image with a "src" attribute value containing "&file=" followed by an integer, there is a small possibility that an unrelated file that belongs to another REDCap project might get mistakenly attached to the alert that is sent.
- Bug fix: The User Access Dashboard was mistakenly displaying projects that have been "marked as completed". Such projects are not accessible by normal users and therefore should not be visible on that page.
- Bug fix: When a calc or @CALCTEXT field is used in the calculation of another calc or @CALCTEXT field, depending on the specific arrangement and order of the fields on the page, it could mistakenly cause the field to trigger itself over and over on the webpage, even when just initially loading a survey page or data entry form, in which

it will use more and more web browser memory as time passes until the page crashes in the user's browser after several seconds or minutes. (Ticket #104217)

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

displayed on the page. This could cause them not to display correctly on the page or (worst case) cause the page to result in a PHP error if it gets stuck in an infinite loop while processing this text. (Ticket #104583)

Version 10.9.1 (released on 2021-04-02)

CHANGES IN THIS VERSION:

- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in various places in REDCap, such as in survey question text and other user places that store user input.
- **Improvement:** Further performance gains for projects with lots of records (25K+), especially during the process of creating new records via data entry forms and via data imports, which have been known to be slow in the past for large projects.
- **Change/improvement:** The "Phone (North America)" field validation now allows phone numbers that begin with "800" and "811".
- **Bug fix:** When using the survey feature "Prevent survey responses from being saved if the survey ends via Stop Action?" to prevent responses from being saved, if a one-page survey (which must be the first instrument in the project) contains a required field that is left blank when the survey is submitted, and then the survey later ends via a Stop Action, the saved data on the survey would mistakenly not get deleted when the survey ends.
- **Bug fix:** Fixed a compatibility issue when hosting REDCap using the PHP7 version of Google App Engine.
- **Bug fix:** If a report's filter logic contains only Smart Variables and no real project fields (e.g., [current-instance] = [first-instance]), the report would mistakenly not return any results for fields that exist on the first instrument if the first instrument is a repeating instrument.
- **Bug fix:** When uploading an Instrument Zip file into the Online Designer, any field variables in the Action Tag/Field Annotation text would mistakenly not get renamed (as they do for calculations and branching logic) if those variables exist on the instrument being uploaded and already exist as variables in the project. (Ticket #102968)
- **Bug fix:** When copying an instrument via the "Choose action" drop-down in the Online Designer, if a matrix of fields has a very long matrix group name, the action might fail and return an error message. (Ticket #103564)
- **Bug fix:** When performing a CSV data import via the Data Import Tool, if the CSV file contains a byte order mark (BOM), it can cause processing issues in certain situations, thus returning an error about not being able to find the Record ID field in the file. To remedy this, the BOM is now always removed (if it exists) before the CSV gets processed during the data import process.

- Bug fix: In a longitudinal project that uses Automated Survey Invitations in which a user deletes an entire event via the Define My Events page, any already-scheduled invitations via ASIs would mistakenly remain in the Survey Invitation Log but would no longer be associated with any event (i.e., partial orphaning). This would cause the invitations to still be sent, which is not expected, and thus causes issues because those invitations no longer point to a real survey/event anymore, in which they would display a message to the recipient opening the survey link that they are not a participant for that survey. This has been fixed so that any already-scheduled invitations connected to the deleted event will also get appropriately deleted. (Ticket #103930)
- Change: Increased the max execution time for cron jobs to 2 hours (was previously 1 hour) to allow for some long-running cron jobs to finish.
- Bug fix: Fixed typo in field label for Twilio-related phone options for Alerts & Notifications on the "Modules/Services Configuration" page in the Control Center.
- Change: Removed the "up arrow" and "down arrow" icons used to represent Field Embedding because the arrow was potentially confusing to some users, especially in the Online Designer. (Ticket #103988)
- Change: If a user in a project with lots of calc fields and/or lots of records attempts to execute Data Quality rule H in which it ends with an error after running too long or running out of server memory, it will now display the "Fix calcs now" button inside the results dialog (despite the error occurring) to at least allow the user to attempt to fix the calcs little by little even though the initial evaluation process of the calcs has failed.
- Bug fix: When deleting a project, due to a SQL query error, the contents of the project logging (e.g., data values that were saved, record names, other record-specific logged events) were mistakenly not being deleted from the log when the project gets officially deleted after 30 days (or if an administrator clicks the "Delete it now" option in the Control Center). (Ticket #103532)

Version 10.9.0 (released on 2021-03-26)

CHANGES IN THIS VERSION:

- **New feature: Field that maps to a participant's Twilio delivery preference**
 - When using Twilio for surveys, users can control each participant's invitation preference automatically using a multiple choice field. If survey participants require using different methods (e.g., email, SMS w/ link, voice call survey) for receiving survey invitations and/or taking surveys, users can select a multiple choice field whose choices represent each survey invitation delivery method. After mapping the invitation preferences to a field, whenever the value of the field is added or modified, the participant's invitation preference will automatically be changed accordingly. **IMPORTANT:** The multiple choice codings for the selected field must be defined exactly as delineated below, although their corresponding choice labels can

be modified to be whatever text the user desires. Also be aware that if the value of the field that is mapped is set to blank/null, then the invitation preference for the participant will revert to the project's default invitation preference (as defined in the Twilio configuration on Project Setup). Additionally, if a participant's invitation preference is modified via the Participant List, that change will also change the value of the mapping field selected above. Mapped field choice options:

- EMAIL, Email invitation
 - SMS_INVITE_WEB, SMS invitation (contains survey link)
 - SMS_INITIATE, SMS invitation (take survey via SMS)
 - VOICE_INITIATE, Voice call (participant receives voice call)
 - SMS_INVITE_MAKE_CALL, SMS invitation (contains phone number to call)
 - SMS_INVITE_RECEIVE_CALL, SMS invitation (reply via SMS to receive voice call)
- **New feature: Custom offline message for surveys in offline status**- Users can provide custom text that is displayed to participants only when the survey is offline. This custom text will be displayed in place of the default offline text on the survey while the survey is in offline mode. This text can be set at the top of the Survey Settings page.
 - **New feature: Survey-level Stop Action controls**(new section on Survey Settings page)
 - **Alternative survey completion text** - Users can optionally set alternative survey completion text that is displayed in place of their standard survey completion text whenever a survey is ended via a Stop Action on any field. This is useful when it doesn't make sense for non-eligible participants to see the same survey completion text as those who completed the survey fully.
 - **Prevent survey responses from being saved if the survey ends via Stop Action**- Users can optionally choose to prevent submitted responses from being saved as data in the project if the survey ends via Stop Action. This is useful if survey administrators do not wish to keep the data for ineligible participants, for example. This means that if a one-page public survey is started but ends via Stop Action, no data from that response will be saved into the project (i.e., no new record will be created), but it will log this event on the project Logging page (so that users are at least aware of this happening despite no data being saved).
 1. NOTE: If any data has been saved on the survey instrument for a given record prior to the Stop Action being triggered, that data will be deleted from that instrument. For example, if the survey is a multi-page survey in which data has been entered on previous pages prior to triggering the Stop Action, all data collected thus far in that survey will be deleted as if the survey was never taken. Additionally, if the record does not contain data in any other instruments, the entire record

itself will be deleted during this process. If data does exist in other instruments, the record will not be deleted.

2. **PRIVACY NOTE:** If the option for Data Privacy/GDPR has been enabled in the project, in which it removes the contents of the log for a record that is deleted from the project, then if an entire record is deleted via this particular survey setting via a Stop Action, then all logged data values for the record will be removed from the log as per this project's data privacy setting.

- **Improvement:** New project-level option for importing email addresses for patients from an EHR via REDCap's Clinical Data Interoperability Services (CDIS) - When this option is enabled at the system level on the CDIS page in the Control Center, an administrator can then enable this option for any given project via the "Edit A Project's Settings" page. Once enabled for a project, users will then be able to map the "email address" field in either a Clinical Data Pull or Clinical Data Mart project, thus allowing them to import patient email addresses for the EHR. This option is disabled by default.
- **Improvement:** If a project contains more than 25,000 records, the Logging page will no longer display the record filtering drop-down at the top of the page but instead will display an auto-complete text box to allow the user to enter the record name if they wish to filter the logging by record. This behavior is similar to the "Add/Edit Records" page when not using record auto-numbering if a project contains more than 25,000 records.
- **Medium security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in various places in REDCap, such as in survey question text and other user places that store user input.
- **Major bug fix:** When using randomization in a longitudinal project in which randomization strata fields exist on a different event than the randomization field, if the values of the strata fields are added or modified during the randomization process, their values would mistakenly not get saved or logged in the correct event, thus orphaning those values. (Ticket #103189)
- **Major bug fix:** If signature image files are being uploaded for Signature fields across multiple REDCap projects simultaneously (within milliseconds of each other), there is a small chance that one of the signature files might mistakenly get associated with a field in another project where someone was adding an image at the same moment. (Ticket #102764)
- **Bug fix:** If a survey participant receives a survey link via email in Microsoft Outlook (in either the desktop client or web version), in which Microsoft Outlook Safe Links has been implemented and has replaced the survey link in the email body, whenever the Safe Link version of the survey link is clicked by the participant, a Microsoft service (located in the IP address range 40.94.*.*) will make a POST request to the survey page about 10-20 seconds after the participant loads it

(unbeknownst to them). This service actually submits the survey as if a real person was taking the survey, including submitting values for the survey questions. This means that for public surveys it is submitting false responses like a bot, and for private/unique survey links it is actually submitting the survey for the user, in which the participant is not able to enter their own response if they wait 10-20 seconds before submitting the survey themselves because this service has already completed the survey for them. To prevent this odd behavior by Microsoft Outlook Safe Links, REDCap survey pages now block all POST requests that originate via the IP address range 40.94.*.*, in which it immediately returns an error message.

- Bug fix: When record auto-numbering is enabled in a project, the process used to generate new record names is 2-5x slower than it should have been due to some inefficient structuring of SQL queries being used. This fix results in a performance improvement, especially for very active public surveys.
- Bug fix: If a project's "record list cache" is currently being built, which is done automatically via a back-end process, at the same time that new records are being created in the project, it might cause the cache not to be built for many minutes or hours (due to repeated failures while building the cache) if the project has lots of activity, all of which could cause the project to get extremely slow and might affect the performance of the overall system.
- Bug fix: In certain situations, such as public surveys being taken by hundreds or thousands of participants in a very short period of time, a project's "record list cache" (which is built automatically via a back-end process) might mistakenly get reset/reverted, which causes the record auto-numbering mechanism to mistakenly use a very slow SQL query for generating the next proposed record name. This can cause the public survey to get increasingly slow as more participants attempt to take it.
- Change: The section for "e-Consent Framework: PDF External Storage Settings (for all projects)" on the File Upload Settings page in the Control Center has been moved to the Modules/Services Configuration page to be more consistent from an organizational standpoint with regard to other similar system-level features that utilize a separate SFTP or WebDAV server for securely storing files outside of REDCap.
- Bug fix: If the system's "Auto logout time" is set to a value of 2 or less, it will cause the user interface to become mostly unusable due to all the auto-logout popups being displayed immediately on every page. The minimum value for "Auto logout time" has been set to "3" on the Security & Authentication page to prevent this issue from occurring. (Ticket #102319)
- Bug fix: When a survey participant is taking an Adaptive or Auto-scoring instrument from the REDCap Shared Library, if a survey question contains stem text at the beginning of the question text (e.g., "In the past 7 days"), the stem text was not being as displayed sufficiently separated from the rest of the question text. Certain validated instruments require that they be more separated.

- Bug fix: When building a list of participants on the Participant List, a database query on that page was suboptimal and was causing the page to load slowly for some projects. That query has been modified to be faster.
- Change: For convenience, a hyperlink to the To-Do List was added inside the blue box at the bottom of the Project Modification Module page where an administrator reviews the drafted changes before approving/rejecting them.
- Bug fix: If a project contains File Upload fields but no records have any files uploaded to those fields, a user can click the ZIP icon on the Other Export Options page to download a "ZIP file of uploaded files (all records)", in which it will correctly state a notice that there are no files to download. However, if during that same session the user goes and uploads a file and returns to download the ZIP of all files again, it will mistakenly still say there is nothing to download, which is incorrect. If they log out and log back in again, this issue goes away. (Ticket #103117)
- Bug fix: A SQL query was slow and inefficient when determining if the "FHIR Statistics" link should be displayed on the Control Center's left-hand menu. This would sometimes cause all Control Center pages to load unnecessarily slowly.
- Bug fix: If a user is viewing a survey response on a data entry form to which they have viewing access but do not have privileges to edit survey responses, any fields with @NOW, @TODAY, or other similar Action Tags would mistakenly have new values pre-filled for them on the page if those fields did not already have a value. This should not happen since the current user is not able to modify any values (i.e., they are not allowed to submit the form).
- Bug fix: Data Quality rule H might fail to complete if the project contains a large amount (>300) calculated fields.
- Bug fix: When uploading an image file to a File Upload field in which that field is piped somewhere using the ":inline" parameter, it would mistakenly not pipe the inline image successfully on the page if the image's file extension was not all lower-case. (Ticket #103473)
- Bug fix: When using Missing Data Codes in a project, if multiple fields are embedded together inside another field on a data entry form, it would cause the click event of the "M" icon not to function correctly in which the Missing Data Code popup would mistakenly fail to open for those particular fields. (Ticket #103213)

Version 10.8.5 (released on 2021-03-05)

CHANGES IN THIS VERSION:

- **Improvement:** The upload max file size for File Upload fields and general file attachments can now be increased or decreased on a per-project basis if needing to be different from the system-level settings as defined on the "File Upload Settings" page in the Control Center. This can be changed at the bottom of the Control Center's "Edit a Project's Settings" page for any given project.
- **Minor security fix:** Removed the outdated and unused JavaScript library YUI Charts.

- **Change/improvement:** The institution name is now included in the email subject for all emails sent regarding user expiration and account suspension due to inactivity. This is done to provide greater clarity to the user regarding which REDCap installation is being referenced in the email.
- Bug fix: When clicking "Cancel" inside the Logic Editor dialog, it might mistakenly revert the value of the text box being modified to the value of another text box that was previously edited via the Logic Editor while on that same page. (Ticket #101200)
- Updates to various third-party PHP packages.
- Bug fix: The rich text editors used for setting system-level custom text settings at the bottom of the General Configuration page in the Control Center would cause the custom text to display in its appropriate places but would mistakenly display a blank message when the custom text is blank, in which it should not display anything at all when the custom text is left blank.
- Bug fix: Calculations or conditional logic containing >1000 variables might mistakenly cause PHP to crash while processing and parsing them.
- Bug fix: Multi-page surveys that contain calculated fields might mistakenly take an unnecessarily long time to load each survey page due to inefficient calculation/logic processing on the server side.
- Change: More tweaks to improve the style of the text displayed inside the rich text editors because they still did not quite match the general style and CSS classes of text on REDCap webpages.
- Change: The language of the "Stop Action" prompt (displayed on survey pages when a Stop Action has been triggered) has been slightly modified to be more succinct and clear.
- Bug fix: When adding a new Table-based user on the "Add Users (Table-based Only)" page in the Control Center, it would mistakenly allow admins to create usernames with spaces or apostrophes when not using LDAP or LDAP+Table authentication, which is the only time that spaces and apostrophes are allowed in usernames. (Ticket #101773)
- Bug fix: When using the Smart Variables [survey-date-completed] and [survey-time-completed] in the Custom Record Label, they would mistakenly not have their date displayed according to the user's preferred date format (as defined on their My Profile page) but instead would display it always in Y-M-D date format. (Ticket #102141)
- Bug fix: Since calculations typically do not expect fields to have a ":value" signifier attached to field variables (because it is assumed), an error message would occur on a data entry form or survey page if any fields in branching logic, calc fields, or pseudo-calc fields (@CALCTEXT) have ":value" appended to the field variable (e.g., [race:value]). REDCap will now allow ":value" to be appended to field variables in branching logic or calcs/pseudo-calcs and will treat them as equivalent to using just the field variable. (Ticket #102149)

- Bug fix: The "Check For Identifiers" page was mistakenly displaying any HTML that existed in a field label, thus making it unreadable on the page in certain instances. It now strips all HTML from the field label when displaying it.
- Bug fix: When setting up the REDCap cron job on the Control Center's "Cron Jobs" page on a Windows server, the page failed to mention the important fact that the cron job's scheduled task needs to be set to "Run a new instance in parallel", which can be set under the Settings tab in the Windows Task Scheduler.
- Bug fix: On the Browse Users page in the Control Center, the "Display User List" button on the "View User List By Criteria" would fail to load the user list table if using Internet Explorer 11. (Ticket #90646)
- Bug fix: Clicking on the "Perl" tab at the bottom of the API Playground page when the "Import A File" API method has been selected would cause a fatal PHP error in PHP 8 and certain versions of PHP 7, thus causing that page to crash. (Ticket #102291)

Version 10.8.4 (released on 2021-02-26)

CHANGES IN THIS VERSION:

- **New feature: Export Data Quality rule results** - After running a data quality rule, users may export the results/discrepancies of the rule as a CSV file. The CSV file will be structured exactly like a data export/import file, which should allow for faster and easier cleaning of data so that values can be fixed and then re-uploaded as a data import.
- **Improvement:** The rich text editor is now utilized when editing the following system-level custom text settings on the "Edit a Project's Settings" page in the Control Center: "Custom text to display at top of Project Home page in project" and "Custom text to display at top of all Data Entry pages in project".
- Change/improvement: The custom text settings "Custom text to display at top of Project Home page in project" and "Custom text to display at top of all Data Entry pages in project" no longer default to being contained in a DIV with class="green" but can be styled with any color container (or none) using the rich text editor on the "Edit a Project's Settings" page. Any custom text values that existed beforehand will be grandfathered in and will still be displayed with the green class, but they can be modified after the fact to remove/change it.
- Change: The input element for @CALCTEXT fields was made wider on survey pages and data entry forms to be able to fit more viewable text.
- Bug fix: When displaying Action Tags beneath fields in the field view in the Online Designer, the last letter of the Action Tag name would mistakenly get removed for certain Action Tags.
- Bug fix: When a user is using the My Profile to reset their password while using certain versions of Internet Explorer, it might mistakenly fail to reset their password due to various JavaScript errors occurring on the page. (Ticket #100595)

- Bug fix: Fixed issue with text and embedded images displayed for an item on the Help & FAQ page. (Ticket #101384)
- Bug fix: Clicking on the "Past Day", "Past Week", etc. buttons near the top of the project Logging page might mistakenly add the "seconds" component of the timestamp into the time range filter fields, thus causing an error message to display on the page if the user puts their cursor inside the field and then then tabs out of the field. (Ticket #101369)
- Bug fix: If the survey setting "Save a PDF of completed survey response to a File Upload field" is enabled on a survey that also has the e-Consent Framework enabled, and the File Upload field specified for the "Save a PDF" setting exists on that same survey (often hidden by @HIDDEN-SURVEY), the PDF of the completed survey response would fail to be saved to the specified File Upload field when the participant completes the survey.
- Bug fix: When using an Adaptive or Auto-Scoring instrument from the REDCap Library (e.g., PROMIS, Neuro-QoL), the "reset" link next to each question's radio buttons would mistakenly fail to reset the radio button, if selected.
- Bug fix: The API Playground's example R code for the API Import File method was not correct and has been fixed. (Ticket #101454)
- Bug fix: The API Playground's example R code for the API Export File method was not correct and has been fixed. (Ticket #101454)
- Bug fix: When setting a survey's text-to-speech value to "English (United Kingdom) Female" on the Survey Settings page, it would mistakenly fail to save that setting correctly, thus preventing it from working as expected on the survey. (Ticket #101419)
- Bug fix: When an administrator is processing a "Move to production" request on the To-Do List page, clicking the "Check For Identifiers" link in the dialog while processing the request would mistakenly make the dialog go blank/empty. It will now open a new browser tab. (Ticket #101426)
- Bug fix: When a slider field is the first field displayed on a data entry form, the field receives focus when the form loads (which always occurs for the first field on any form), which makes it appear as if the field might already have a value. If the user misunderstands this and doesn't enter a value because they think it already has one (when it does not), data loss could result. Thus slider fields will no longer receive focus by default on a data entry form when they are the first field on the form. Note: This does not apply to surveys. (Ticket #101420)
- Change: Small change to text describing the Designated Email Field on the Project Setup page.
- Bug fix: If an Adaptive (CAT) survey has been downloaded into a project from the REDCap Shared Library, and the setting "Allow participants to skip questions?" has been set to "Yes" on the survey's Survey Settings page, a participant attempting to skip a survey question without answering it would mistakenly receive an error message saying that an unknown error occurred and that they cannot continue with the survey.

- Bug fix: When fields are embedded using the ":icons" parameter in order to additionally embed the field's associated icons, depending on how the embedded fields are laid out on the page, the SPAN tag containing the icons might mistakenly wrap to the next line and appear below the embedded field rather than displaying to the right of the field. (Ticket #101466)
- Bug fix: When the Smart Variable [survey-queue-link] or [survey-queue-url] is used in the email body of an Automated Survey Invitation or an Alert, if the record is being created via the API, which then triggers the sending/scheduling of the invitation or alert, the link/URL of the record's survey queue would mistakenly be blank (not displayed at all) inside the email body. (Ticket #101536)
- Bug fix: When a REDCap administrator attempts to add Stop Actions for a Dynamic SQL field on a survey instrument in the Online Designer, an error message would mistakenly be displayed, thus preventing them from doing so.

Version 10.8.3 (released on 2021-02-19)

CHANGES IN THIS VERSION:

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the username field on the REDCap login form when logging in as a valid user for the very first time using an external authentication method, such as LDAP or Shibboleth. (Ticket #101037)
- Bug fix: The "Instant Adjudication" panel in CDP-enabled projects would mistakenly not be displayed on the CDP field mapping page in projects with record auto-numbering disabled.
- Bug fix: When copying a project that contains surveys with the e-Consent Framework enabled, it would mistakenly not copy over some e-Consent settings, such as the "force signature" fields and "Allow e-Consent responses to be edited by users".
- Bug fix: When running Data Quality rule H's "Fix calcs now" button, if any fields listed in the discrepancy list are calc or pseudo-calc fields that exist on a survey that was completed using the e-Consent Framework, it would not change the values of those fields (as expected) but would mistakenly not return any error messages regarding why the values weren't changed, which could be confusing to users. It now displays error messages (if any) after clicking the "Fix calcs now" button for DQ rule H.
- Bug fix: When an Automated Survey Invitation is set to be triggered by survey completion OR conditional logic, in which the ASI is set to send "Immediately" and also has the "Ensure logic is still true" checkbox checked in the ASI setup, if a user/participant completes the trigger survey while the conditional logic still evaluates as FALSE, it would mistakenly fail to send the survey invitation, but it would correctly schedule any reminders for that survey invitation if the ASI has reminders defined. (Ticket #100770)

- Change: In addition to the stock Action Tags that come bundled with REDCap, the field view in the Online Designer now displays custom action tags (in pink text below the field) that are utilized by hooks or external modules. (Ticket #101045)
- Bug fix: When using X-instance Smart Variables in report filter logic (e.g., [current-instance] = [last-instance]), in which the report is returning data for multiple repeating instruments in the project, the report might mistakenly display rows of repeating instance data that should not be returned. (Ticket #100577)
- Bug fix: Fixed PHP 8 fatal error caused when parsing certain logic or calculations. (Ticket #101033)
- Bug fix: Descriptive fields could not successfully be embedded if the Descriptive field's field label does not contain any HTML tags and was not created using the rich text editor. (Ticket #101130)
- Bug fix: When opening an existing field for editing in the Online Designer, it would mistakenly convert
 tags that exist in the "Action Tags/Field Annotation" text into literal line breaks. (Ticket #101178)

Version 10.8.2 (released on 2021-02-12)

CHANGES IN THIS VERSION:

- Change: New "Applications Overview" video added to Training Videos
- Change/improvement: When viewing the Survey Settings page for a repeating instrument, the "Location of the button on survey" option for the "Allow respondents to repeat the survey" setting now includes a new choice not to display the repeating survey button at all on the survey page. This is useful if users are utilizing the Survey Queue as the path for participants to enter new responses for the repeating responses instead of displaying the repeating survey button on the survey page itself.
- Bug fix: When importing data from a CDISC ODM XML file (whether it be a Project XML file with data or a data-only ODM export file), in which the file contains data for repeating instruments, only the first repeating instance of any repeating instrument would get successfully imported.
- Bug fix: When importing data from a CDISC ODM XML file (whether it be a Project XML file with data or a data-only ODM export file), in which the file contains data for repeating events, only the last repeating instance of any repeating event would get successfully imported and would mistakenly get saved into the first repeating instance of the event.
- Bug fix: If a signature field is embedded on a survey page or data entry form, depending on where it is embedded, the signature image might mistakenly not be displayed directly above the download link after the user/participant adds their signature. It should always be displayed directly above the download link.

- Bug fix: In a longitudinal project that contains calculated fields whose equations reference fields on other events, Data Quality rule H might fail to return discrepancies for events that do not contain any data for any fields.
- Bug fix: Auto-calculations (i.e., the server-side processing of calculated fields) would mistakenly try to include all the fields in the project when assessing if calculated fields are being triggered and thus need to be updated, rather than only considering the fields that are being updated at that moment, such as during a data import or data entry. This could cause certain data imports to take much longer than they should.
- Improvement: Performance improvements for the "datediff+today/now" cron job for Alerts & Notifications
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0. (Ticket #100549)
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0. (Ticket #100456)
- Bug fix: A fatal PHP error would occur in certain situations when running PHP 8.0 while performing a data import via the API Import Records method. (Ticket #100416)
- Bug fix: The "Quick Add" dialog on the "Create New Report" page might mistakenly not work correctly if a data collection instrument's name/label contained a backslash.
- Bug fix: When viewing the Survey Invitation Log for a project displayed in a non-English language, the "Delete all selected" button might mistakenly not be displayed on the page. (Ticket #100480)
- Bug fix: When using advanced filter logic for reports, the logic would not get interpreted correctly if it contained certain Smart Variables, especially if it contained only Smart Variables with no field variables (e.g., [current-instance] <> ""). With this issue fixed, users may now utilize X-instance Smart Variables in a more intuitive way for filtering reports, such as the following: 1) Display only repeating instance data - [current-instance] <> "", 2) Display only non-repeating instance data - [current-instance] = "", 3) Display only the first instance of only repeating instance data - [current-instance] <> "" and [current-instance] = [first-instance], and so on. (Ticket #45618)
- Change: Added a tip in Step 3 when creating a new report to inform users how to use [X-instance] Smart Variables to filter repeating data. This tip is only displayed in projects that have repeating instruments and/or repeating events.
- Bug fix: On a project's Project Setup page, some things would mistakenly display incorrectly (or display when they should not) if an administrator was using the "View project as user" feature.
- Bug fix: If using the survey setting "Save a PDF of completed survey response to a File Upload field" in which an Alert is set to send "Immediately" with the PDF as an attachment on the alert, the PDF would mistakenly not get attached to the alert. However, if the alert was set to send after a delay of any kind, the PDF would correctly get attached.

- Bug fix: When copying a project via the Copy Project page, in which the Survey Queue settings are being copied, the following Survey Queue settings would fail to be copied to the new project: "Custom text to display at top of survey queue" and "Keep the Survey Queue hidden from participants?".
- Bug fix: Calculated field values were mistakenly not getting saved via cross-form or cross-event calculations (via Auto-Calculations) if the calculation was based on the value of a field being blank when the field's value was not being changed.
- Bug fix: When an action tag has text enclosed inside escaped apostrophes (e.g., @PLACEHOLDER='DD-MM-YYYY'), it would cause the Online Designer page to crash and throw a fatal PHP error. (Ticket #100543)
- Bug fix: It was recently discovered that due to a security fix added to REDCap 10.3.3 (Standard) and thus to all subsequent versions, some survey-specific features in REDCap do not function correctly if not using MySQL/MariaDB 5.5.5 or higher. Anyone using a version lower than MySQL/MariaDB 5.5.5 should upgrade their database to v5.5.5 or higher. The Configuration Check page now reflects MySQL/MariaDB 5.5.5 as being the minimum required database version that REDCap supports.
- Bug fix: When a project has thousands or more records and has several records being created every minute, there might exist a slight lag in the back-end Record List Cache immediately after creating a new record, in which it could cause REDCap to mistakenly assume that a record doesn't exist yet when in fact it was just created. This might cause a record's data to get duplicated as a new record if a user is not paying attention while attempting to create another record.

Version 10.8.1 (released on 2021-02-05)

CHANGES IN THIS VERSION:

- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL of the Survey Settings page when enabling an instrument as a survey.
- Bug fix: If an API user belongs to a Data Access Group, the project's back-end Record List Cache would mistakenly get reset every time the user would import a batch of records via the API. This would cause performance degradation of the project if many API imports are occurring for the project in a relatively short amount of time.
- Various fixes and updates for the External Module Framework
- Bug fix: When a project has enabled the "Delete a record's logging activity when deleting a record" setting, the action of deleting a record would correctly delete the record's logging activity with regard to what can be viewed via the front-end user interface, but it was mistakenly not additionally deleting the back-end SQL logging details that are stored in the database log_event tables (even though this

information can only be accessed if you have direct access to the database or via a special plugin or external module for doing such). (Ticket #100131)

- Bug fix: When a calc field or @CALCTEXT field exists on a repeating instrument or repeating event, the calculation might not get triggered during a data import or when running Data Quality rule H, in which it will fail to find discrepancies for this field when some discrepancies exist (but only in specific situations depending on the calculation being used for the field). (Ticket #82961)
- Bug fix: When a field has an @HIDDEN-PDF action tag in the Field Annotation/Action Tag text in which "@HIDDEN-PDF" is preceded with a line break with no space before the line break, the field would mistakenly not be hidden when downloading a PDF of the instrument.
- Bug fix: When attempting to download a file that was just uploaded to a File Upload field on a survey page, it would display an error message and prevent the downloading of the file if the survey had not been saved yet (i.e., if the participant was still on page one of the survey, whether public or private). This should not occur at all when the participant is using a private/unique survey link. This error message now only displays on public surveys in which the survey has not been saved yet at all (before the record has been created), which is appropriate. (Ticket #99754)
- Bug fix: When using cross-form or cross-event calculations or branching logic involving a DMY or MDY formatted date or datetime field, if the field referenced on the other instrument/event has a Missing Data Code saved for it, saving the current instrument would cause the "Invalid values entered!" warning to appear mistakenly. (Ticket #100238)
- Bug fix: When a project has thousands or more records and has several records being created every minute, there might exist a slight lag in the back-end Record List Cache immediately after creating a new record, in which it could cause REDCap to mistakenly assume that a record doesn't exist yet when in fact it was just created. This might cause a record's data to get duplicated as a new record if a user is not paying attention while attempting to create another record.
- Bug fix: In some rare cases for projects that have calculated fields on repeating instruments, running Data Quality rule H would return valid discrepancies, but clicking the "Fix now" button on the page would mistakenly fail to fix the calculations.
- Bug fix: When attempting to download an instrument's Instrument ZIP file in the Online Designer when the instrument was created in Draft Mode but does not yet exist in the live version of the project, it would display a generic error message, which could be confusing to users. It now displays a more informative message regarding why exactly the zip file cannot be downloaded. (Ticket #100290)

Version 10.8.0 (released on 2021-01-29)

CHANGES IN THIS VERSION:

- **New feature: Instant Adjudication for Clinical Data Pull (CDP)** with improved CDP Field Mapping page
 - Once enabled here for the whole system via the CDIS page, the Clinical Data Pull "Instant Adjudication" setting can be enabled on a CDP project's field mapping page, after which it will allow users to bypass the normal data adjudication process and will let them import and save all data into the project that has already been cached from the EHR system. This can save a great deal of time when importing lots of patient records. After Instant Adjudication is enabled in a CDP project, users with CDP-adjudication privileges will see the button to initiate this process on the Record Status Dashboard. After the button is clicked, it will begin adjudicating the EHR data for all records in real time, thus saving the data into records in the projects. On the CDIS page in the Control Center, administrators can enable or disable the Instant Adjudication feature for all CDP-enabled projects in the system. By default, the system-level Instant Adjudication option is enabled.
 - Also, the user interface for the CDP Field Mapping page in all CDP-enabled projects has been updated and improved to allow users to more quickly and easily map their REDCap fields to EHR fields for their CDP project.
- **Improvement: Custom ranges (min/max) for slider fields** - Users may now set a custom minimum and/or custom maximum integer value for slider fields. The default min and max is still 0 and 100, respectively. If no value is entered for the min or max value, it will assume the default value. These can be set via the Edit Field popup in the Online Designer, and via the "Text Validation Min" and "Text Validation Max" columns in the Data Dictionary.
- **New feature: New API "Export Logging" method** - This new API method allows users to export a project's logging via the API using very similar methods and filters as in the project's user interface. See the documentation for all filter parameters that are available.
- **New feature: Ability to import/export user rights** via a CSV file on the User Rights page - Users can download a CSV file to view all the user privileges of the existing users in a project, including their instrument-level user rights. Users can upload a CSV file to grant new users access to the project and/or to modify the user privileges of existing users, including their instrument-level user rights.
- **Improvement:** The rich text editor is now utilized when editing the following system-level custom text settings in the Control Center: Custom login text, Homepage announcement custom text, Homepage informational custom text, Help & FAQ custom text, Custom message when creating/copying project, and Custom message when moving project to production.
- **Improvement:** The Email Users page in the Control Center now has a new quick-select link to select and email only the currently logged-in users. (Ticket #99532)

- Bug fix: When using the ":link" piping option for a File Upload field on a survey or data entry form, in which the field being piped exists on that same page, if a user initially uploads a file for that File Upload field, it would mistakenly pipe the value instead of the hyperlink for downloading the file. However, if the page is reloaded or revisited later, the piping works correctly to display the hyperlink. This issue only occurs at the moment in which the file is uploaded when piped on the same page.
- Bug fix: In specific cases when using the ":inline" piping option for a File Upload field that has a PDF uploaded to it, instead of displaying the PDF inline on the page, it would mistakenly cause the PDF to be auto-downloaded by the user's browser. (Ticket #99572)
- Bug fix: When a REDCap administrator is using the "View project as user" feature to impersonate a user when viewing an "initial survey" in the Participant List while the project is in production, it would mistakenly not disable the "Enable" button for the Participant Identifier column in the Participant List. In this scenario, that button should remain disabled since it would be disabled for the user being impersonated.
- Bug fix: The style of the text displayed inside the rich text editors did not match the general style and CSS classes of text on REDCap webpages (e.g., the text in the editors were much larger). This made it more difficult to accurately determine what the resulting text would actually look like on the page.
- Bug fix: When using the Field Bank feature, some specific field types that are imported into a project might mistakenly have choices that belong to other fields that appear in the Field Bank search. However, this only appears to occur when searching in the 'REDCap Catalog of Common Data Fields', which was deprecated in REDCap 10.7.1 and thus is no longer accessible. (Ticket #99552)
- Bug fix: When the text inside the @CALCTEXT action tag contains an opening parenthesis inside quotes but does not contain a closing parenthesis inside those same quotes (and vice versa), the @CALCTEXT equation would mistakenly not get parsed correctly and might cause an error to display on the survey/form or might cause the @CALCTEXT field to display as a normal editable text field instead of a pseudo-calc field.
- Bug fix: When a required field is left empty/blank on a survey or data entry form, in which the required field has no field label defined, instead of displaying a bullet point with no text in the error prompt, which is confusing, the variable name of the field will be displayed as an alternative. (Ticket #99551)
- Bug fix: When using the ":link" or ":inline" piping options pointing to a File Upload field, in which the field is from a different event than the event where it is being piped, the user would receive an error message when attempting to download or view the file. (Ticket #99754)
- Change/improvement: The maximum repeating instance number that can be added for a repeating instrument or repeating event has been increased from "9999" to "32767".
- Bug fix: When running the "Re-evaluate Alerts" feature on the Alerts & Notifications page in a longitudinal project, in which the alert is set to be triggered on "[Any

event]" if an instrument is saved with a Complete status, it would mistakenly trigger alerts for records that do not have a Complete status for the instrument. If the alert is set to be triggered by completing the instrument on a specific event (rather than on "[Any event]"), this issue does not occur. (Ticket #99889)

- Bug fix: Data Quality rule F would mistakenly return false positives if the project is a multi-arm longitudinal project and a field's branching logic references fields/events in arms where the record currently doesn't exist. (Ticket #99922)

Version 10.7.1 (released on 2021-01-22)

CHANGES IN THIS VERSION:

- **New feature:** New “:link” piping option for File Upload fields - If piping using the ':link' option for a File Upload field, such as [my_field:link], the file's filename will be displayed as a clickable hyperlink for downloading the file, which works on webpages and also inside the body of email text (i.e., survey invitations or Alerts & Notifications).
- **Improvement/change:** When using the “:inline” piping option for File Upload files inside an email body (e.g., survey invitations, alerts), if the uploaded file is not an image file, it will still attach the file to the email but will display the file's filename in the email text as an alternative to displaying it as an inline image.
- **Major bug fix:** A race condition can occur when two records are being randomized at the exact same time, in which it is possible that they both mistakenly receive the same allocation and same value for the randomization field in the project. (Ticket #99159)
- **Minor security fix:** In several places where a user can download a CSV file of various settings (e.g., export of Data Quality rules), it might be possible for a malicious user to perform CSV injection in a CSV file that is downloaded and opened in Microsoft Excel by another user, in which dangerous code could be injected and executed unknowingly by the user on their computer.
- **Change:** In order to help emphasize the "NIH/NLM Catalog" more in the new Field Bank feature, the "REDCap Catalog of Common Data Fields" has been removed indefinitely as an option in the Field Bank dialog in the Online Designer.
- **Change:** The Field Bank feature in the Online Designer can now be disabled at the system level on the "Modules/Services Configuration" page in the Control Center. Once disabled, the "Import from Field Bank" button will no longer appear in the Online Designer for any user.
- **Change:** Some language on the Survey Settings page was modified for clarity with regard to the Time Limit for Survey Completion feature to note that it is not applicable to survey links sent via Alerts & Notifications.
- **Bug fix:** In some situations where embedded fields have branching logic that is triggered by other embedded fields, if the parent field of those embedded fields is itself triggered by branching logic, then some of the embedded fields inside the

parent might mistakenly be displayed when they should be hidden by branching logic.

- Bug fix: When using the ":inline" piping option to display a PDF file inline on a webpage after it had been uploaded to a File Upload field, in specific circumstances with regard to the text/HTML surrounding the piped field, the inline piping of the PDF file may fail to display on the page.
- Bug fix: When using the ":inline" piping option to display a PDF or image file inline on the same instrument on which the File Upload field itself exists, the inline piping of the PDF/image would fail to work. However, it would coincidentally work if the File Upload field was using the @INLINE action tag.
- Bug fix: When clicking the "Send-It" link to send a file from inside a project (e.g., a data export file or a file from File Repository), after submitting the page to send the file to the desired recipients, an error message would mistakenly display saying that the user does not have permission to the file. Thus the file would not be sent. Note: This does not affect the main Send-It page that is accessible via the tab on the main REDCap home page, etc.
- Bug fix: When a survey participant is taking a PROMIS, NeuroQoL, NIH Toolbox, etc. assessment that is adaptive or has auto-scoring, the "Anchor Text" would mistakenly not be displayed on the survey page for the first and last choices of the survey question (assuming anchor text exists for the question).
- Bug fix: When using the Custom Record Label and/or Secondary Unique Field in a project that contains many records (i.e., thousands or more), running Data Quality rules would mistakenly take an inordinate amount of time to return the results.
- Bug fix: When using the Custom Record Label and/or Secondary Unique Field in a project that contains many records (i.e., thousands or more), the Resolve Issues page (available when using the Data Resolution Workflow) would mistakenly take an inordinate amount of time to load.
- Bug fix: The Configuration Check page might mistakenly display a yellow recommendation saying that the MySQL/MariaDB query cache is not enabled but mistakenly does not tell the user that they should set the setting query_cache_type to "ON" or "1" in their My.cnf or My.ini config file. It now checks the query_cache_type setting to recommend that it be enabled.
- Bug fix: On a data entry form or survey, it might be possible in very specific situations for hidden radio elements to mistakenly be selected and be somewhat visible on the page. This would not affect any data but might cause confusion to the user. (Ticket #99271)
- Bug fix: Fixed a fatal PHP error that occurs on certain pages in PHP 8 only. (Ticket #99323)
- Bug fix: If an embedded checkbox field has the @READONLY action tag, it would mistakenly be possible to check/uncheck the checkbox and thus change its value by clicking its choice label, although clicking the checkbox element itself would do nothing and would remain read-only, as expected. (Ticket #99322)

- Bug fix: If a file that is uploaded for a File Upload field or for a message in REDCap Messenger exceeds the maximum file size as defined by the server or by REDCap's configuration, the file's metadata would mistakenly remain in the database and (if the file size exceeded the REDCap limit but not the server limit) the file might still remain on the server. It will now set the file to be removed from these places when this occurs. (Ticket #99324)
- Bug fix: When piping a field into a label on a data collection instrument in a longitudinal project in which the piped field variable is prepended with the [previous-event-name] Smart Variable, the piping would fail to work in certain specific contexts, such as if the instrument of the field being piped is not designated on the previous event when viewing a different instrument on the next event. In these cases, it would mistakenly display six underscores (as if there is no value) rather than the real value. (Ticket #99342)
- Change: For longitudinal projects that are in production, the Define My Events now displays an extra warning that warns that renaming events could cause disastrous effects if any unique event names are utilized in conditional logic, branching logic, calculations, reports filters, data quality rules, etc.
- Bug fix: In the field-view in the Online Designer, the floating help boxes on the right of the page might mistakenly overlap some of the instructional text. (Ticket #98688)
- Bug fix: When a multi-page survey has fields utilizing the @CALCTEXT or @CALCDATE action tag, in which those fields themselves are used in a calculation or branching logic on a separate page that also does not display the fields utilized inside the @CALCTEXT or @CALCDATE logic, it would mistakenly display an error message on the survey page. (Ticket #98545)
- Bug fix: If a user is attempting to enable the Secondary Unique Field on a field that somehow has records with blank values (for the "value" column) saved for that field in the database, REDCap would mistakenly not allow the user to enable the Secondary Unique Field for the field. (Ticket #83279)
- Bug fix: If utilizing certain Smart Variables inside the query of a Dynamic SQL Field (e.g., [record-name]), the Smart Variable would mistakenly not get escaped in the query, which might cause the query to fail and not return the desired results.
- Bug fix: When editing logic in the Logic Editor for the Survey Queue or Automated Survey Invitations, if a syntactical error exists in the logic, it might mistakenly create an infinite loop where the error popup keeps displaying and is not able to be fully closed, thus causing the user to have to reload the page. (Ticket #99412)

Version 10.7.0 (released on 2021-01-14)

CHANGES IN THIS VERSION:

- **New feature: Field Bank** - When adding new fields via the Online Designer, users will see an "Import from Field Bank" button, which will allow them to search different standardized catalogs of commonly used fields, such as in the U.S. National

Library of Medicine catalog. The Field Bank helps users add new fields quickly and easily to their data collection instruments. Over time, more standardized catalogs of fields will be added to the Field Bank.

- **New feature: @INLINE action tag**- Allows a PDF file or image file (JPG, JPEG, GIF, PNG, TIF, BMP) that is uploaded to a File Upload field to be displayed in an inline manner on the survey page or data entry form so that the PDF/image can be viewed by the user or survey participant without having to download it.
 - The PDF/image will be displayed inline on the page immediately above the download link for the field and will be displayed with 100% width by default (i.e., 100% width of the area in which it is contained).
 - Images will be displayed with their native width:height ratio, although PDFs will be displayed with a 300 pixel height by default. If you wish to manually set the width and/or height of the image/PDF, you may put the width/height values inside parentheses after the action tag in the following manner: @INLINE(width) or @INLINE(width,height). The width/height can be a percentage value (e.g., 50%) or a number representing size in pixels (e.g., 400). Thus @INLINE(50%) will display an image at 50% size for the area in which it is contained on the page, and @INLINE(400,100) would display the image always at 400px tall and 100px wide. To make an inline PDF appear taller on the page, you might use @INLINE(100%,600) since 300px is the default height for inline PDFs.
 - The @INLINE action tag also works if the File Upload field is embedded inside another field on the page.
 - Thanks to Andy Martin for his inspiration for this feature, in which it is based on his "Image Viewer" external module. NOTE: Upgrading to REDCap 10.7.0 will **not** automatically disable the "Image Viewer" module if it is installed and enabled on any projects, nor will it conflict with the "Image Viewer" external module.
- **New feature: New ":inline" piping option for File Upload fields**
 - If piping using the ':inline' option for a File Upload field, such as [my_field:inline], in which the uploaded file is a PDF file or image file (JPG, JPEG, GIF, PNG, TIF, BMP), the file will be displayed in an inline manner so that it is viewable on the page.
 - The ':inline' option DOES work inside emails, so you can pipe a field with ':inline' inside the email body, thus allowing you to display inline images inside survey invitations or Alerts & Notifications.
 - The @INLINE action tag does not need to be used on a field in order to utilize the ":inline" piping option.
 - Note: Inline images are not able to be displayed inside a downloaded PDF of a survey/instrument that contains data.
- **Improvement:** In the Online Designer, any fields that have action tags will have those action tags listed immediately below the field in the table on that page. This

makes it easier to know if a field has a certain action tag without having to open the Edit Field dialog for the field.

- **Major bug fix:** On a survey page or data entry form, if a slider field already has a value saved for it before the time that the page is loaded, and a user then modifies the slider field value, while it would appear that the slider's value has changed, it mistakenly has not. Bug emerged in REDCap 10.6.2. (Ticket #98450)
- Change: PHP 7.0.0 is now the new minimum PHP version that is required for running REDCap. Thus all versions of PHP 7 and PHP 8 are currently supported.
- Bug fix: The Configuration Check page was mistakenly displaying MySQL database configuration suggestions for the MySQL query cache setting even though the query cache is deprecated in MySQL 5.7.20+. It will now no longer suggest changes to the query cache if using MySQL 5.7.20+. Note: This issue was supposedly fixed in REDCap 10.6.3 but mistakenly was not. (Ticket #97786)
- Bug fix: If using an if() function inside the @CALCTEXT action tag, in which the if() function is outputting text that contains a comma, it would mistakenly display an error message on the survey page or data entry form.
- Bug fix: If a longitudinal project's Automated Survey Invitation (ASI) has conditional logic that contains datediff() with "today" or "now" as a parameter and also has a field in the logic that is prepended with any "event-name" Smart Variable, then the ASI cron job that runs every 4 hours might mistakenly schedule invitations when it shouldn't or might mistakenly remove some already-scheduled invitations (but only if the "Ensure logic is still true before sending invitation?" option is checked).
- Bug fix: The option "UNK, Unknown" was missing from the "race" field options when using the Clinical Data Pull (CDP) feature.
- Bug fix: Two Laboratory fields (including a COVID-related one) and their associated LOINC code were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: In some cases, the @CALCDATE action tag might mistakenly return the value "NAN" when it should return a blank/"" value. This often happens when one or more of the parameter values for @CALCDATE are blank. Bug emerged in REDCap 10.6.3.
- Bug fix: In a longitudinal project, if a field on a repeating instrument or repeating event has branching logic that contains a field name appended with the Smart Variable "first-instance" or "last-instance", the branching logic might mistakenly not get parsed correctly and would display a branching logic error popup on the survey page or data entry form. (Ticket #98427)
- Change: The "Help & FAQ" page was updated with new content.
- Bug fix: In certain situations where an [X-instance] Smart Variable in piping, it would cause PHP to crash with a fatal error if using PHP 8. (Ticket #98920)
- Bug fix: Ways were found where a user could access a file uploaded to a File Upload field that exists in another project, specifically via the Send-It link on data entry forms or via downloading the "ZIP file of uploaded files (all records)". However, this could only be done if the user has access to that other project.

Version 10.6.3 (released on 2020-12-30)

CHANGES IN THIS VERSION:

- **Database performance improvements:** New cron job was added to check the percentage of database connections being used, in which it will notify the REDCap administrator if more than 2/3 of MySQL's max connections have been used. Also, to preserve system performance, the cron job will automatically kill any long-running database queries (queries running longer than 30 minutes or any sleeping connections that are more than 60 minutes old).
- **Improvement:** Field embedding can now be used for embedding a Descriptive field inside another field (even though descriptive fields do not have an actual input element for saving data). Embedding a descriptive field would merely relocate the field's label to the new location where it is embedded. This is typically only useful if the descriptive field has branching logic, in which you could use branching logic to make the descriptive field's text appear conditionally in a specific place on the page.
- **Improvement:** A link to the "**REDCap Language Library**" has been added to the Control Center's left-hand menu. The Language Library is a centralized place where administrators can download and share language files where the stock text in REDCap has been translated into another language.
- **Major bug fix:** If using the datediff() function in a calculated field or in the @CALCTEXT action tag, if the returnSignedValue parameter is provided and has a TRUE value in the function but the dateFormat parameter is not provided, then the calculation might mistakenly return a positive number value on the page if the value is actually a negative number. Note: This could be fixed if running Data Quality rule H.
- **Bug fix:** If a survey participant sends an SMS message to a Twilio phone number that is set up for a REDCap project, REDCap would reply simply with "Please enter your access code to begin the survey", which might be unexpected in some situations, such as if the participant sent the SMS to this number by accident or if they sent it before they were invited to take the survey. More response text has been added to the message now to provide more clarity to the respondent in these situations. (Ticket #97520)
- **Bug fix:** When clicking the "M" icon to open the Missing Data Code menu for an embedded field on a data entry form, it would mistakenly not display the menu at all or it would display it on the wrong location on the page.
- **Bug fix:** Fatal PHP error occurs in some branching logic parsing if running PHP 8.0. (Ticket #98045)
- **Bug fix:** When using Twilio telephony services for Alerts & Notifications, the Notification Log would mistakenly fail to display the recipient's phone number on the page if a phone/number field is being used as the recipient's phone number. Instead it would merely display the unpiped variable name in the Recipient column.

- Bug fix: When using Twilio telephony services for Alerts & Notifications and viewing a scheduled or sent notification via the View Notification dialog on the Notification Log, it would mistakenly fail to display the recipient's phone number in the dialog if a phone/number field is being used as the recipient's phone number. Instead it would merely display the unpiped variable name.
- Bug fix: When viewing the Notification Log for Alerts & Notifications, it might mistakenly fail to display unsent/scheduled notifications in the log in certain cases if the "End time" filter is set to a blank value. This might make it appear as if the notification has not been scheduled.
- Bug fix: The Configuration Check page was mistakenly displaying MySQL database configuration suggestions for the MySQL query cache setting even though the query cache is deprecated in MySQL 5.7.20+. It will now no longer suggest changes to the query cache if using MySQL 5.7.20+. (Ticket #97786)
- Bug fix: If users cannot create projects on their own but must request that admins create them on their behalf, an administrator creating the project for a user mistakenly needs to have the "Allow this user to request that projects be created for them by a REDCap administrator?" privilege enabled for their user account. This should not be required but should be implied via their status as an admin. (Ticket #98128)
- Bug fix: When performing a data import of a CDISC ODM (XML) file that contains only data (i.e., metadata not included), in which the XML file contains base64-encoded binary files for File Upload fields, those File Upload files would mistakenly be ignored during the import process and would not be imported with the rest of the data. (Ticket #96800)
- Bug fix: When creating a new REDCap project using a Project XML file, in which the XML file contains surveys and fields with Stop Actions, the Stop Actions would mistakenly not get added to the fields for the new project created. (Ticket #97959)
- Bug fix: When performing a data import where the uploaded data set contains checkbox fields, REDCap would mistakenly allow values of "1.0" and "0.0" (and other approximations of "1" and "0") to be imported for checkbox fields. This would also cause the values not to save correctly for these fields, even though the logging implies otherwise. It should only explicitly allow values of "1" and "0" for checkboxes. (Ticket #97972)
- Bug fix: When editing conditional logic for surveys in the Survey Queue dialog on the Online Designer, if the logic contains a syntactical error, it might persistently keep opening the Logic Editor over and over, thus preventing the user from successfully closing it and saving their changes. (Ticket #98213)
- Bug fix: If a project has Double Data Entry enabled and DDE person #1 or #2 is viewing a custom record status dashboard, the dashboard will mistakenly return incorrect results on the page for custom dashboards that have filter logic defined. (Ticket #97174)
- Bug fix: In a longitudinal project that contains repeating instruments and/or repeating events, if a custom data quality rule has logic that contains a field whose

data collection instrument exists in both repeating and non-repeating contexts in the project, the data quality rule might not always return all the discrepancies that exist. (Ticket #97508)

- Bug fix: If a project was marked as Completed, any Alerts & Notifications or survey invitations that had been previously scheduled would mistakenly continue to send. They should not send if a project is marked as Completed.
- Bug fix: If reordering Report Folders inside the Report Folder dialog while using PHP 8.0, it would fail with a fatal PHP error. (Ticket #98217)
- Bug fix: The language in the Account Expiration email to users (and their sponsor, if applicable) has been modified to provide more clarity to the user receiving the email. (Ticket #58767)
- Bug fix: If a project has Double Data Entry enabled and DDE person #1 or #2 is viewing the record status dashboard, the Custom Record Label (if enabled) would fail to display on the page next to the record names. (Ticket #97116)
- Bug fix: If a data collection instrument's unique instrument name contains a triple underscore, in which its name was manually set via Column B in a data dictionary upload, when entering data for this instrument on the data entry form, the value for the instrument's form status complete field would fail to save successfully and thus would always get set to Incomplete ("0"). Note: This would not affect data imports or surveys but only data entered on the data entry form. (Ticket #96547)
- Bug fix: If using the @NONEOFTHEABOVE action tag on a checkbox field that is embedded inside another field, the @NONEOFTHEABOVE functionality would not function correctly if the user clicked the checkbox label to check/uncheck the option (as opposed to clicking the checkbox element itself). (Ticket #98269)

Version 10.6.2 (released on 2020-12-18)

CHANGES IN THIS VERSION:

- **Improvement/change:** REDCap is now compatible with PHP 8.0
- **Improvement:** Field variables and Smart Variables can now be piped into the "src" attribute of HTML image tags ("img"). Previous versions did not allow this but would allow the piping of values into the "href" attribute of hyperlinks. Now both are possible. Note: The value being piped into the "src" attribute must have already been saved prior to the page loading, which is how piping for the "href" attribute has always worked.
- **Minor security fix:** Due to a vulnerability in the third-party JavaScript library "Handlebars", the library was updated to the latest version. (Ticket #97725)
- **Minor security fix:** Due to a vulnerability in the third-party library TinyMCE, the library was updated to the latest version. (Ticket #97725)
- **Minor security fix:** The "Prevent Clickjacking" security feature would mistakenly not work successfully on a certain page when that page is called in an unexpected manner without a "pid" parameter in the URL. (Ticket #97736)

- **Minor security fix:** A Cross-Site Request Forgery (CSRF) vulnerability was discovered where a malicious user could potentially bypass the CSRF check by adding a specific parameter to HTTP requests in the application.
- Bug fix: If a user clicks on a status icon for a repeating instrument on the Record Status Dashboard, in which there are many repeating instances for the record-instrument, it might display the popup list of repeating instances so that they mistakenly run off the top of the page, making it impossible to close the floating popup or to view it completely.
- Bug fix: If a radio button or slider field has a Missing Data Code as its value, clicking the "reset" link next to the field would mistakenly not remove the Missing Data Code label from the user interface below the field, even though it would correctly set the value to blank/null for the field. (Ticket #97028)
- Bug fix: If a slider field has a value and is being hidden by branching logic, in some scenarios it might mistakenly display the "survey errors exist" error on surveys or might keep displaying the "erase value" prompt repetitively in an infinite loop on a data entry form. (Ticket #97395)
- Bug fix: If a survey participant clicks the "Survey Queue" icon at the top right of the survey page, in which the queue contains a lot of items so much that the queue is taller than the page itself, the queue would mistakenly run off the top or bottom of the page and would not be closable. (Ticket #96613)
- Bug fix: If a survey title contains HTML tags, the tags would mistakenly be displayed in the drop-down list of surveys in the Participant List.
- Bug fix: When an Automated Survey Invitation is triggered by a data import where a new record is being create, and the ASI email body contains a [survey-link] or [survey-url] Smart Variable that points to a survey other than the current one for which the ASI is being triggered, it would mistakenly not pipe the survey link/URL successfully into the email body. (Ticket #96305)
- Bug fix: If the REDCap web server is running a version of PHP that is higher than the recommended PHP versions supported by REDCap, the "Server info" text at the top of the main Control Center page might mistakenly display a warning with incorrect text about the need to upgrade PHP. (Ticket #96749)
- Bug fix: When using the SendGrid API to send emails from REDCap, the Reply-To email header would mistakenly not get set correctly and would thus cause all replying emails to be sent to the Global "From" Email Address instead of the actual sender's email.
- Bug fix: If a date or datetime field is embedded inside the choice label of a checkbox field, clicking the Today/Now button for the embedded date/datetime field would mistakenly check or uncheck the checkbox choice in which it is embedded. (Ticket #97719)
- Bug fix: On the Alerts & Notifications page, when modifying an alert that previously had the option set to send it "Every time the form/survey in Step 1B is X", and then when the alert was later opened after being saved, if it was changed in Step 1A (selecting the third radio option) so that that choice was no longer viable and was

hidden in the dialog, it would still keep the alert listed as a recurring alert in the backend database table, which could cause it to not get triggered or sent at the correct times. Note: This fix will prevent this issue from occurring in the future and will also retroactively fix any alerts that have been saved incorrectly due to this bug. (Ticket #97507)

- Bug fix: 13 Laboratory and Vital Signs fields and their associated LOINC codes were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Bug fix: When calling the "Export List of Export Field Names" API method or the REDCap::getExportFieldNames() method for a project that has Missing Data Codes defined, it would mistakenly fail to add the Missing Data Codes as extra choice options for checkbox fields (excluding fields with the @NOMISSING action tag). (Ticket #96240)
- Bug fix: When a project is being permanently deleted (either by an administrator on the Browse Projects page or via the cron job 30 days after a user has "deleted" the project), it would mistakenly fail to log the very last event for the project (i.e., that the project is itself being permanently deleted), which should include the following info about the project in this last logged event: the project title, project ID, number of fields, number of records, current project status, and list of current project users.
- Bug fix: When processing a user request on the To-Do List page, in which the user making the request has an apostrophe in their email address, it might cause the request not to load successfully in the dialog on the To-Do List page. This only affects certain types of requests, such as moving a project to production. (Ticket #96958)
- Bug fix: When a matrix field is embedded inside another field on a survey page or data entry form, in which some other fields on the page contain branching logic that reference the embedded matrix field, the branching logic might silently fail to show or hide the other field correctly. (Ticket #97114)
- Bug fix: When accessing the REDCap server from a domain that is not the domain seen in the REDCap Base URL value (i.e., when using REDCap over multiple domains), the HTTP redirecting that occurs when REDCap is building a project's record list cache (which is an automatic process), would mistakenly redirect the user to the other domain that is set in the REDCap Base URL. Thus the user ends up on the other server/domain by mistake. It now keeps the user on the current domain during this redirect process. (Ticket #97777)
- Bug fix: When an administrator is using the "View Project as User" feature, the "Dynamic Query (SQL) Field" option would mistakenly be displayed for them when adding a new field in the Online Designer. (Ticket #96865)
- Bug fix: The Java code that is auto-generated by the API Playground mistakenly had some missing closing parentheses in the MyClass constructor. (Ticket #96565)
- Change/improvement: Small changes to improve the overall web accessibility of REDCap, especially on survey pages, such as increasing the contrast ratio of many

light-colored labels and adding/removing "aria-X" HTML attributes where appropriate.

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

Version 10.6.1 (released on 2020-12-10)

CHANGES IN THIS VERSION:

- **Improvement:** The Logging page in a project now defaults to only displaying the logged events from the past week, although users can always adjust the filter settings to expand the time range values after initially loading the page. This change makes the Logging page load much faster when initially loaded by a user.
- **Improvement:** The Logging page in a project now has helpful buttons to quickly adjust the time range filters to Past Day, Past Week, Past Month, Past Year, and all time ("no limit") to make it easier for users to view the logging from various time ranges.
- **Improvement:** The Logging page in a project now has more download options for exporting the logging. In addition to exporting all logged events, there are now the following new buttons: 1) Export all pages using current filters and 2) Export current page.
- **Improvement:** When downloading a PDF of a data collection instrument containing a File Upload field that is embedded in another field, it will now display the file name of the uploaded file in the PDF rather than the doc_id number (i.e., the raw data value). This change only involves embedded fields since normal/non-embedded File Upload fields already display the file name of the file in the PDF.
- **Minor security fix:** A Cross-site Scripting (XSS) vulnerability was discovered where a malicious user could potentially exploit it by inserting HTML tags and/or JavaScript event attributes in a very specific way into the URL on certain REDCap pages. (Ticket #97362)
- **Minor security fix:** A Blind SQL Injection vulnerability was found on the User Rights page, in which a malicious user could potentially exploit it by manipulating an HTTP request on that page. (Ticket #97347)

- **Minor security fix:** An Unrestricted File Upload vulnerability was found on the API Playground page, in which a malicious user could potentially exploit it by manipulating an HTTP request on that page for the Import File API method. (Ticket #97372)
- Bug fix: When viewing certain adaptive instruments that have been downloaded from the REDCap Shared Library, in which one of the multiple choice options has both a code and value of "0", the label for that choice would mistakenly not be displayed next to its radio button, so it would appear not to have a label.
- Bug fix: For the Data Mart and Clinical Data Pull services, the action "Fetching data from FHIR endpoint" was mistakenly getting logged on the project Logging page for every time that REDCap would make a call to the EHR, even when no new data is stored in REDCap from the EHR. It should not have been logging that but instead only logging when data points are actually imported.
- Bug fix: For unknown reasons, the Ace Editor library (used by the new Logic Editor) is not compatible with Bootstrap dialogs when using the Firefox browser. This prevents the Logic Editor from being usable on the Alerts & Notifications page. To deal with this conflict (until a solution has been found), if a user is using Firefox, the Logic Editor will not be used on the Alerts & Notifications page. (Ticket #96992)
- Bug fix: When a calc field or pseudo-calc field (e.g., @CALCTEXT) has an equation that references a multiple choice field that contains dashes in one or more of its choice values/codes, in which the value/code is greater than a certain length, the calculation may return a blank value rather than the correct value. (Ticket #97055)
- Bug fix: When moving a project to production and deleting all records in the process, or if a user clicks the "Erase all data" button in a development project, any records that have been locked at the record level would mistakenly still have their locked status maintained after the record deletion. This could cause issues in the future if a record is created afterward and has the same record name as a previously-locked record. (Ticket #97167)
- Bug fix: When a plugin, hook, or external module calls the method REDCap::getProjectXML(), it would mistakenly not include the "redcap::SurveysGroup" entry and other project-level information in the resulting XML. (Ticket #97151)
- Bug fix: When viewing a data entry form that has drop-down fields with the auto-complete option enabled, the drop-down list might mistakenly be displayed incorrectly as if it is very narrow and has no options to select. Note: This issue occurs on data entry forms but not on survey pages.
- Bug fix: The survey-date-complete or survey-time-complete Smart Variable would mistakenly not work correctly in some calculations and in many cases would display a calculation error message. Bug emerged in REDCap 10.0.29 LTS and 10.5.2 Standard. (Ticket #97057)

Version 10.6.0 (released on 2020-11-30)

CHANGES IN THIS VERSION:

- **New feature: New logic editor for conditional logic, branching logic, calculations, report filters, etc.** In every place where users might add/edit logic or calculations, the new logic editor will be displayed in a modal dialog to provide a better user experience for entering their logic. The logic editor provides much more space for entering large amounts of logic, including a fullscreen mode to take maximum advantage of their screen's real estate. It also provides bracket-matching and parentheses-matching where it will highlight a pair of matching brackets/parentheses to make it easier for users to gauge which brackets/parentheses belong together in the logic, thus reducing possible errors in the logic when typing.
- **New feature: Auto-numbering of repeating instances for data imports** - When using repeating events or repeating instruments, it may be difficult when performing dynamic imports of data for these because it is not easily known how many repeating instances already exist in a project for a given repeating event/instrument, thus often forcing users to invent clever ways to determine this, such as performing data exports beforehand and then dynamically determining what the next repeating instance number should be. However, that is no longer necessary. When performing a data import now for a repeating event/instrument, users may use the literal value "new" as the value for the "redcap_repeat_instance" field in their data import. By doing so, REDCap will perform the instance auto-numbering on its own to increment the repeating instances properly based on the highest numbered instance that already exists in the saved data in the project.
- **New feature: New survey option "Save a PDF of completed survey response to a File Upload field"** - On the Survey Settings page in the Online Designer, users may select a File Upload field in the project where a static PDF file of a participant's survey response will be stored immediately after they complete the survey. For longitudinal projects, if the target field exists on multiple events, users may set this feature so that it stores the PDF in the selected field in the current event (default) or else in a specific event in the project. Thanks to Philip Chase and his team at University of Florida for their inspiration for this feature, in which it was based on their "Save Survey PDF to Field" external module. NOTE: Upgrading to REDCap 10.6.0 will **not** automatically disable the "Save Survey PDF to Field" module if it is installed and enabled on any projects, nor will it transfer the saved settings of that module into this new feature in REDCap.
- **Improvement:** File Upload fields and Signature fields may now be used in piping. If you are piping **from** a File Upload field or Signature field, the field's numerical value will be piped by default, but you may pipe the original filename of the uploaded file by appending the ':label' option, such as [my_field:label].
- **Improvement:** The REDCap::saveData method for plugins/hooks/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:

```
$params = array('dataFormat'=>'json', 'type'=>'flat',  
'data'=>'[{"record_id":"1","age":"41","dob":"1978-07-  
20","form_1_complete":"0"}]');$response = REDCap::saveData($params);
```

- **Change/improvement:** Users are now permitted to import data values for Biomedical Ontology fields. In previous versions, this was not allowed and would return an error message when a user attempted this. The Data Import Tool now displays a warning (instead of an error) that informs users that importing data for such fields is allowable but is not recommended because the value might not display correctly if viewed afterward on a report or in the data entry interface, in which this is caused by the fact that the label is missing because it has not been fetched via the BioPortal web service and then cached in REDCap's database tables. (Ticket #8096)
- Bug fix: If a user has REDCap Messenger opened and is viewing the System Notifications or the General Notifications channel, if they navigate from page to page while leaving Messenger opened, the messages in either of those channels would mistakenly fail to display until they clicked the "System Notifications" or "General Notifications" links in the Messenger window.
- Bug fix: If a user is using REDCap Messenger, the height of the Messenger window might not get calculated correctly and thus might mistakenly run off the bottom of the page (making it impossible to read all the messages) or else might leave unnecessary extra space at the bottom of the page.
- Bug fix: When importing the value for a field that is referenced inside the @CALCTEXT action tag of another field, the import process would mistakenly fail to update the @CALCTEXT field. (Ticket #96419)
- Bug fix: In a longitudinal project where a checkbox field is referenced in the branching logic and/or calculation of another field on the same instrument, in which the branching logic or calculation references that checkbox field on the same event and also on other events (i.e., cross-event logic/calc), the branching logic and/or calculation will evaluate correctly when the page is initially loaded, but if the checkbox's value gets modified on that page by checking/unchecking any of its choices, the branching logic and/or calculation might begin not to evaluate correctly anymore on that page until the page is refreshed or returned to at a later time. (Ticket #95744)
- Bug fix: Forty-three Laboratory fields and their associated LOINC codes were not originally included on the field mapping page for Clinical Data Pull and Clinical Data Mart.
- Change: On the Survey Settings page, the e-Consent Framework setting "Allow e-Consent responses to be edited by users?" is now pre-selected by default when enabling the e-Consent Framework.

- Bug fix: When importing data for pseudo-calc fields (i.e., fields with the @CALCDATE or @CALCTEXT action tag), it would mistakenly allow values for such fields to be imported. It should instead prevent values for pseudo-calc fields from being imported since their value will be calculated automatically during the import process. Similar to calculated fields, any pseudo-calc fields will be ignored during the data import process. If values for pseudo-calc fields need to be updated en masse, this can be done by running Data Quality rule H.
- Bug fix: The "View project as user" feature would mistakenly not work correctly on the Other Functionality page in a project, and thus it might display some things that it should not and also might hide some things that should be displayed.
- Bug fix: The "Time Limit for Survey Completion" option on the Survey Settings page would mistakenly not function correctly if using MySQL 8. (Ticket #94256)
- Bug fix: When a repeating instrument is enabled as a repeating multi-page survey in a longitudinal project, and all the fields on a given survey page are hidden by branching logic, in which the the fields in the branching logic does not have [current-instance] appended to them, then in certain circumstances a survey page might mistakenly get skipped while a participant is taking the survey. (Ticket #96426)
- Bug fix: The ontology Current Procedural Terminology (CPT) was removed from the list of BioPortal Ontology Services since that ontology is no longer usable by the BioPortal service due to licensing reasons.

Version 10.5.2 (released on 2020-11-20)

CHANGES IN THIS VERSION:

- Improvement: The "E-signature and Locking Management" page in a project now displays information with regard to record-level locking, whereas in previous versions it only displayed information for instrument-level locking. (Ticket #95496)
- Bug fix: In the Add/Edit Field popup in the Online Designer, if the user selects "Slider" from the Field Type drop-down, whenever they have their cursor inside any of the fields in the "Labels displayed above slider" section in the popup and then they click Enter on their keyboard, it would mistakenly display an unrelated popup dialog about SQL Fields. (Ticket #96061)
- Bug fix: The action tags @CALCDATE and @CALCTEXT might fail to work correctly or might display an error on the form/survey page if they are referencing a field from another event in a longitudinal project. (Ticket #95993)
- Bug fix: If using the Smart Variables [form-link], [form-url], [survey-link], [survey-url], [survey-queue-link], [survey-queue-url], [survey-time-completed], or [survey-date-completed] in branching logic or in a calculated field's equation, an error message might mistakenly display on the data entry form or survey page saying that there is something syntactically incorrect about the logic/calculation. (Ticket #96080)

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