MYCAP HELP

This page contains information about MyCap features and tips for configuring the MyCap setup on a project. Help text and information icons are also incorporated within the REDCap interface. The table of contents is below and outlines a typical workflow to configure MyCap for a project.

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MYCAP OVERVIEW

About MyCap

MyCap is a participant-facing mobile application used for data collection and the automated administration of Active Tasks (activities performed by participants using mobile device sensors under semi-controlled conditions). All data collected in the MyCap app is automatically synchronized to the REDCap server as soon as the app is opened and internet connection is available, meaning it can also be used for offline data collection. This no-code solution supports research teams conducting longitudinally designed projects or projects with frequent participant contact (e.g., daily, weekly, monthly). MyCap also facilitates participant engagement and retention by providing quick access to project staff and two-way communications (e.g., messaging and announcements) within the app.

MyCap Device Compatibility

MyCap is available on any iOS device (iOS v12.0+) and any Android device (Android v5.0+).

MyCap Participant Experience

MyCap is free and can be easily installed from Google Play and the Apple Store. When participants are joining a project, MyCap provides helpful links to download the MyCap app. In September 2023, the original MyCap app was rebranded to “MyCap Classic”, and a new MyCap app written in the cross-platform Flutter framework was released. Projects on REDCap versions below 13.10 automatically direct participants to the MyCap Classic App.

Please note that features differ between MyCap Classic and the current MyCap app. Refer to this Feature Grid to view the most current set of features available in each version of the app.

After installing the app, participants can join projects by scanning a unique QR code or clicking on a unique hyperlink. When joining a project, participants will be asked to allow notifications and set up a profile by entering a six-digit passcode.

Participants can join multiple projects simultaneously or sequentially. The MyCap app also supports multiple profiles on one device, meaning a parent and child in the same household who are enrolled in the same study can complete their tasks on the same device. If a participant needs to install MyCap on a new device, they can scan their original QR code on the new device and continue where they left off in the project.

1. SEEKING IRB APPROVAL FOR A PROJECT

Please follow local IRB processes and policies if a project requires approval by the Institutional Review Board (IRB). The use of MyCap to capture participant data should be explained in the IRB application. The language below may be helpful.

MyCap is a free participant-facing mobile application that can be installed on iOS and Android devices to capture patient-reported outcomes on any REDCap project. All data completed on a participant's device is automatically synchronized to REDCap. If data is completed while participants are offline, data is synchronized when internet connection is restored, and the app is opened.

These are the additional security features of MyCap:

- Local Data Storage: Participant data is stored locally on the device in an AES-256+SHA2 encrypted database. Data remains on the device if an internet connection is not available. This applies to both iOS and Android devices.
- Data Transmission: When an internet connection is available and the app is opened, data is transmitted directly to REDCap using an SSL (TLS v1.2) connection. A hash-based message authentication code (HMAC) is used to verify the integrity of the data and authenticate the sender.
- Data Privacy: Participant entered data (i.e., task responses) exists only on the participant's device or on the server. It is not stored or sent anywhere else.
- Data Deletion: Data is wiped from the device after the MyCap app verifies that data has been successfully transmitted. Note that there is an optional MyCap feature that lets a participant see some of the data they have entered for an individual task, instrument, or survey. Data is wiped by default
- Login Security: Participants create a 6-digit PIN to open their profile. This PIN feature can be disabled by participants if they choose.

2. ENABLING A PROJECT FOR MYCAP

Project Setup Tips

MyCap is used to support longitudinal data collection and can be enabled on traditional REDCap projects using MyCap Task Settings to configure task schedules. As of September 2023, MyCap can also be enabled on REDCap's longitudinally enabled projects, which use the event schedule to determine when tasks appear in the MyCap app for participants.

Online Designer Tips

Project instruments can be created either before or after enabling MyCap on a project. Projects may contain forms and surveys, both of which can be designed to be completed by participants in the MyCap app – these instruments are referred to as "MyCap Tasks."

Use REDCap's Online Designer to specify what data fields should be captured in each instrument. Important considerations for designing project instruments are listed below:

THE FIRST INSTRUMENT IN A PROJECT

The first instrument in a project cannot be enabled for MyCap because it is used to create the participant record. This record must exist to generate participants' unique MyCap access information (e.g., QR code or URL).

If you plan to **email** participants their invitation to join the MyCap Project (via a participant specific QR code or hyperlink), we recommend capturing the participant's email address in the first instrument.

If you plan for MyCap Tasks to be triggered based on a participant-specific event, such as a surgery date, clinic visit, or discharge date, a text field with date validation (see REDCAP FIELD COMPATIBILITY below) must be included in the first instrument or another instrument that WILL NOT have MyCap enabled. If participants complete their baseline date in MyCap (e.g., for fully remote trials or hybrid trials), the @HIDDEN tag can be used to hide the field when the instrument is being completed. See BASELINE DATE SETTINGS for more information on how to use the baseline date.

REDCAP FIELD COMPATIBILITY

Not all REDCap fields and features are supported in REDCap:

- **REDCap features NOT supported in MyCap**: Calculated fields, Piping, Dynamic query (SQL) fields, and Signatures.
- **Branching Logic: Branching logic works WITHIN a single instrument, but not across instruments**. For example, a response in Survey A cannot trigger the display or hiding of a field in Survey B.
- Surveys as MyCap Tasks: Instruments enabled as REDCap Surveys can also be enabled as MyCap Tasks. However, MyCap does not support the auto-continue to the next survey function. Instead, in MyCap, participants must manually select the next task (survey) to complete it. Note: Instruments can be enabled as both Surveys and MyCap Tasks. Enabling them as a MyCap Task does not prevent the study team from also enabling them as Surveys. This allows flexibility for participants who may be unable to use a mobile device or prefer not to.
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Additionally, the table below indicates which REDCap field types are supported in MyCap.

Field Type	Validation	Supported	Notes
Text Box	Date (D-M-Y)	Yes	Minimum and maximum date range values not yet supported for all nine date formats
Text Box	Date (M-D-Y)	Yes	
Text Box	Date (Y-M-D)	Yes	

Text Box	Date (D-M-Y H:M)	Yes	
Text Box	Date (M-D-Y H:M)	Yes	
Text Box	Date (Y-M-D H:M)	Yes	
Text Box	Date (D-M-Y H:M:S)	Yes	
Text Box	Date (M-D-Y H:M:S)	Yes	
Text Box	Date (Y-M-D H:M:S)	Yes	
Text Box	Email	Yes	
Text Box	Integer	Yes	
Text Box	Number	Yes	
Text Box	Phone (North America)	Yes	
Text Box	Time (HH:MM)	Yes	Minimum and maximum time values not yet supported
Text Box	Zip code (U.S.)	Yes	
Notes Box (Paragraph Text)		Yes	
Multiple Choice - Drop-down List (Single Answer)		Yes	
Multiple Choice - Radio Buttons (Single Answer)		Yes	
Checkboxes (Multiple Answers)		Yes	
Yes - No		Yes	
True - False		Yes	
Descriptive Text		Yes	Optional file upload is not supported
File Upload (for users to upload files)		Yes	Requires special MyCap annotations. The file upload field is used to capture images and video. See annotations @MC-FIELD-FILE-IMAGECAPTURE and @MC-FIELD-FILE-VIDEOCAPTURE
Slider / Visual Analog Scale		Yes	
Add Matrix of Fields		Yes	Matrix fields *without rankings* are supported in MyCap; however, each question appears on a separate screen rather than in a table due to limited screen sizes.
Calculated Field		No	Also note that piping and smart variables are not supported.
Signature (draw signature with mouse or finger)		No	
Dynamic Query (SQL)		No	

EXTENDING REDCAP FIELD CAPABILITIES WITH MYCAP ANNOTATIONS

MyCap developers have created special @ Action Tags to align with or extend REDCap field capabilities. The table below lists the field annotation, the required field type, and details on how to use the annotation. This information is also available on the @ Action Tags page within REDCap when MyCap is enabled on a project.

Annotation	Field Type	Usage
@MC-FIELD-FILE-IMAGECAPTURE	File	See documentation Note that templateImage, templateImageInsets, accessibilityInstructions, accessibilityHint are not implemented.
@MC-FIELD-FILE-VIDEOCAPTURE=[MAX DURATION IN	File	Example: @MC-FIELD-FILE-VIDEOCAPTURE=20:YES:OFF:BACK is video capture, 20 seconds max duration, audio is muted, camera flash is OFF, use camera on BACK of the device. Note that REDCap file upload fields

SECONDS]:[AUDIO MUTE(YES/NO)]:[FLASH MODE(AUTO/ON/OFF)]: [DEVICE POSITION(BACK/FRONT/UNSPECIFIED)]		have a size limit of 35MB by default and video capture generates large files. See documentation.
@MC-FIELD-HIDDEN	All	@MC-FIELD-HIDDEN hides a field from MyCap only, whereas REDCap's @HIDDEN annotation hides a field from both REDCap and MyCap. Example: If you have a calculated field that you want to appear in REDCap but not in MyCap, then use the @MC-FIELD-HIDDEN annotation.
@MC-FIELD-SLIDER-BASIC=[MIN]:[MAX]:[STEP]	Slider/VAS	Example: @MC-FIELD-SLIDER-BASIC=0:10:1 is scale from 0 to 10 step by increments of 1. See . Note that REDCap slider does not accept values < 0 and > 100.
@MC-FIELD-SLIDER-CONTINUOUS=[MIN]:[MAX]:[MAX FRACTIONAL DIGITS]	Slider/VAS	Example @MC-FIELD-SLIDER-CONTINUOUS=0:100:0 is scale from 0 to 100 with no fractions. See documentation. A REDCap slider will default to this if no annotation is specified. Note that REDCap slider does not accept values < 0 and > 100. REDCap slider does not accept fractions, so always use 0 as the last number.
@MC-FIELD-TEXT-BARCODE	Text or Notes	Use the device's camera to scan the barcode. Contents will be stored in your Text Box or Notes Box field. Barcode symbologies supported: Aztec, CODE39, CODE39MOD43, CODE93, CODE128, DataMatrix, EAN8, EAN13, Interleaved2of5, ITF14, PDF417, QR, UCP-E

Enable (or Request to Enable) MyCap on a Project

MyCap can be enabled from the **Project Setup** page under **Main Project Settings.** MyCap is available at the project level, meaning it can be enabled on a project-by-project basis. It can be enabled either before or after designing the project's REDCap instruments. Each REDCap Institution decides whether MyCap can be enabled by REDCap Users or whether the REDCap Administrator must enable MyCap for a project. You can find your REDCap admin here by entering your institution.

After MyCap is enabled from the Project Setup page, MyCap configuration occurs in multiple places:

1) **Online Designer** is used to configure REDCap Instruments to be "MyCap Tasks," set task schedules, and use of a baseline date to trigger task schedules.
2) **MyCap App Design** allows users to create custom pages within the app to display project descriptions and valuable information such as About pages; add project contacts; insert hyperlinks to project-related resources or information and select a color theme for the project.
3) **MyCap Participant Management** is used to manage and invite participants to use MyCap, manage bi-directional communications with participants, and troubleshoot synchronization issues.
4) **Define My Events** is used for projects with the longitudinal project setting enabled to designate instruments to events and set up scheduling.

Once MyCap is enabled, four fields are added to the first instrument containing the annotations @MC-PARTICIPANT-JOINDATE (this is also the "install date"), @MC-PARTICIPANT-JOINDATE-UTC,), @MC-PARTICIPANT-TIMEZONE (this is the participants time zone) and @MC-PARTICIPANT-CODE. The information captured in these fields can be leveraged into reports and exported from REDCap.

Configuring Instruments to be “MyCap Tasks”

Participants’ MyCap app shows a list of tasks (REDCap instruments) that they need to complete for any given date. Each task is represented by a card. When a participant taps a card, the task begins. Once a task is completed, the result is stored in an encrypted database on the participant's device. If the participant has an active internet connection, the result will be synchronized to REDCap. If there is no active internet connection, the result is stored in a queue and synchronized to REDCap once internet connection is restored and the MyCap app is opened.

BASELINE DATE SETTINGS

By default, all MyCap Task schedules are based on the date the participant joins a project via the MyCap App. This is known as the participant’s **install date**. If any or all MyCap Tasks need to be triggered based on a participant-specific event, such as a surgery date, clinic visit, or discharge date, enable the **Baseline Date Settings** from the **Online Designer**.

When configuring the baseline date settings, a **text field with date validation** must be selected from an instrument that does not have MyCap enabled. The field cannot be on an instrument that is enabled for MyCap because the baseline date must be entered to generate Task schedules based on the date. When the baseline date is enabled, no MyCap Tasks based on the baseline date can be generated and completed before the baseline date is entered.

The baseline date can be entered into REDCap on behalf of participants (e.g., during their intake, consent, discharge, or screening process). This is helpful for study teams concerned participants might not remember or enter the correct date. Alternatively, if desired the baseline date can be completed by participants in their MyCap app. **Please note:**

1. REDCap project users can enter the baseline date on behalf of participants before or after the participant joins the project on MyCap. However, if the baseline date is entered after the participant joins, the participant will see the task that asks about their baseline date. If the baseline date is to be is entered later in REDCap, it may be helpful to label the baseline date task as "DO NOT COMPLETE" or something similar to signal to the participant that, although it appears as a task, it should not be completed. This ensures clarity regarding the task's purpose and timing.
2. If participants enter their baseline date on their MyCap App, consider using the @HIDDEN annotation to hide the baseline date field from the data entry form/survey so it is not completed inadvertently in REDCap.

ENABLING INSTRUMENTS AS MYCAP TASKS

Once you have created a project's instruments in the **Online Designer** and enabled MyCap for the project, you can enable any project instrument as a MyCap Task, except for the first instrument or an instrument capturing the field selected as the baseline date. To enable an instrument as a MyCap Task, navigate to the **Online Designer**.

Note: In a MyCap-enabled project, all MyCap tasks can be manually set as Active or Not Active at any time on the MyCap settings page in the Online Designer. Setting a MyCap task as “Not Active” will prevent the task from appearing in the MyCap mobile app for all participants.

MyCap Tasks offer the following settings options:

Basic Task Info	Optional Settings	Set Task Schedule
• **Task Title** • **Format** (questionnaire – one question per screen; form – all questions on a single screen) • **Card Display** – after task completion, display the percentage of the task completed or chart of task results	• Allow retroactive completion • Allow to save and complete later • Include instruction steps • Include completion step	• **Relative date for scheduling** • **Schedule recurrence** (infinite, one time, repeating, fixed)[1] • **Number of days to delay[1]** • **End repeating tasks**

For longitudinal projects, instruments that need to be completed as a MyCap Task must first be designated for an event. More information about each of the task settings can be found within the MyCap Task Settings dialog.

Note: for initial testing purposes, it is recommended to set all schedules to infinite initially. This allows you to test and review the Task’s display and behavior (e.g., branching logic, slider response options) before inviting participants to join the project. For longitudinal projects, you can set every event to occur on day zero to test the appearance of all instruments. Additionally, you can use custom event labels found in "Custom Settings (App)" in the online designer. Use the displayed options to assist with testing. Appending the custom Event ID or Event Label will help identify which event upcoming tasks belong to while testing scheduling in the app. We recommend turning this option off once participants are ready to join your project. The Event ID and Event Label assigned to events can be found on the "Define My Events" page. Once the task has been thoroughly evaluated, set the schedule as designed for the project, turn off the custom event label feature if desired, and publish an updated version.

TASK NOTICES

After enabling an instrument as a MyCap Task, two notices appear at the top of the page:

1. Repeatable Instrument Notice: The instrument has been automatically switched to be a repeatable instrument.
2. Hidden Fields Notice: New hidden fields have been added to the instrument. These fields indicate when tasks were scheduled, started, and completed, and provide 'supplemental data' about the device used to complete the task. These hidden fields are not visible to participants but can be included in REDCap reports and data exports.

Annotation	Type	Default Name	Usage
@MC-TASK-UUID	Text	[foo]_uuid	ID of the task result
@MC-TASK-STARTDATE	Text	[foo]_startdate	Date user started task
@MC-TASK-ENDDATE	Text	[foo]_enddate	Date user completed task

@MC-TASK-SCHEDULEDATE	Text	[foo]_scheduledate	Date tasks were scheduled, if appropriate. One-time and Infinite tasks will not have a scheduled date
@MC-TASK-STATUS	Dropdown	[foo]_status	0=Deleted, 1=Completed, 2=Incomplete
@MC-TASK-SUPPLEMENTALDATA	Text	[foo]_supplementaldata	Any available supplemental data. JSON format.
@MC-TASK-SERIALIZEDRESULTS	File	[foo]_serializedresult	Stores backup/restoration data.

PROJECTS ORIGINATING IN THE MYCAP EXTERNAL MODULE

Any projects migrated from the original MyCap External Module may also have the annotations below on the first instrument.

Annotation	Type	Default Name	Usage
@MC-PARTICIPANT-ID	Text	record_id	Record ID, uniquely identifies the participant
@MC-PARTICIPANT-FIRSTNAME	Text	par_firstname	First name of participant
@MC-PARTICIPANT-LASTNAME	Text	par_lastname	Last name of participant
@MC-PARTICIPANT-ZERODATE	Date	par_zerodate	Baseline Date. Date of important event.
@MC-PARTICIPANT-CODE	Text	par_code	Code that identifies the participant. Used in the QR code. Hidden in instrument.
@MC-PARTICIPANT-JOINDATE	Date	par_joindate	Install Date. Date participant installed the app. Hidden in instrument.
@MC-PARTICIPANT-PUSHNOTIFICATIONIDS	Notes	par_pushids	Stores push notification identifiers. Hidden in instrument.

IMPORTING AND ENABLING ACTIVE TASKS FOR MYCAP

Active Tasks are designed to utilize mobile device sensors, microphones, and/or speakers to capture data from participants. These Tasks are developed by third-party programmers and researchers. While MyCap developers have added these Active Tasks, they do not have expertise in the returned results. It is up to the end user to ensure the returned results can be understood and analyzed. Each Active Task will show a unique configuration section. Each section may include a link called a “Reference.” Click the link to learn more about Active Tasks and how they can be customized. After a task is enabled, it can be given a custom name and some settings can be modified (e.g., length of the task).

Note: Mobile Toolbox measures have been added for use in the MyCap mobile app. The Mobile Toolbox (MTB) is a research platform that includes a library of cognitive and other tests that can be administered remotely on a smartphone. The MTB's measures include smartphone versions of assessments from the NIH Toolbox, the International Cognitive Ability Resource, and the Patient Reported Outcomes

Measurement Information System. A list of all available MTB tasks in REDCap can be viewed via the "Import Active Task" button in the Online Designer for any MyCap-enabled project.

VIEW TASK DETAILS

After enabling MyCap Tasks and/or Active Tasks in a project, an overview of the MyCap Tasks and their schedules is available from the **Online Designer > MyCap Options > View Task Details**. The schedule for each task can also be seen by hovering over the MyCap icon in the "Enabled as MyCap Task" column (traditional projects only).

Designing the App's Look and Feel for Participants

MyCap App Design allows users to create custom pages within the app to display project descriptions and valuable information on About pages, add project contacts, insert hyperlinks to project-related resources or information, and select a color theme for the project.

ABOUT PAGES

As a quick reference for participants, it may be helpful to add "About" pages that describe the project or study. At least one About page is required to serve as the landing page for participants when they first join a project. Multiple pages can be created with text, images and/or logos to display to participants. The preview button approximates how About pages will appear in the MyCap app to participants.

About pages contain a title, description, and an image. Two system images are available for use, or a custom image can be uploaded. The image should be in PNG format ideally sized at 1024x1024 pixels.

Participants can view About pages after they join a project from the About menu, which is also where Contacts and Links appear.

CONTACTS

Specify project contacts and contact information that will appear if participants click on the About menu from within a project on the MyCap app. Multiple contacts can be listed, as well as descriptions for the contacts (e.g., IT help, study questions, medication questions, appointments). Clicking the preview button approximates how contacts will look in the MyCap app. It is recommended that projects have at least one contact.

LINKS

Projects can include custom URLs to be displayed in the MyCap app for all participants. For example, projects can share links to resources, study websites, and custom webpages displaying participant results. Participants using Android devices will see a Links icon in the MyCap app's navigation menu at the bottom of the screen. Participants using iOS devices can access Links from the project's navigation menu, which is accessible from the bottom of the screen, under the About button.

A link is comprised of an icon, name, and URL. The icon and name are displayed on the menu. Tapping on the link will open the URL. Links can be configured to include the MyCap project code and participant code if a developer is available to build these into a custom webpage to pull data from the REDCap project and display results. The project code can be appended to a URL to link to a custom website of results for multiple projects using MyCap. The participant code can be appended to a URL to link to a custom website with information specific to a participant.

THEME

Select a color theme for the project or upload one. It is recommended to follow the [Material Design color system](). To switch themes:

1. Choose a color scheme and press the save button.
2. Open the project in the MyCap app. The configuration will be saved to the internal database.
3. [Force close]() the MyCap app.
4. Open the project in the app to see the new theme.

Publishing a Project's MyCap Configuration

MyCap uses a configuration versioning system. When the MyCap app opens, it sends a request to the REDCap server to check for a new configuration version. If an updated version is found, the app updates accordingly. Participants can also manually reload the project from their profile page. If they select a project, the project's menu will appear with options to select Activities, Messages, About, or Reload.

Once the initial MyCap Tasks settings have been finalized, users MUST press "**Publish new MyCap version"** to finalize the settings before participants can see the Tasks. Users must press "**Publish new MyCap version"** after making any changes to instruments enabled as MyCap Tasks (e.g., new questions, deleted questions, new response options, new instruments/tasks) or task schedules. Once an updated version is published, participants will automatically see the updated configuration when they open their app.

3. MANAGING PARTICIPANTS AND THEIR MYCAP ACCESS

MyCap Participant Management allows you to manage and invite participants to use MyCap, manage bi-directional communications with participants, and troubleshoot synchronization issues.

Configuring the MyCap Participant List

By default, the MyCap Participants List will display all records in a project.

- To Enable a **Custom Participant Label** for records, select any text field in the project from the drop down (e.g., First Name, Last Name, Medical Record Number, Study ID) or pipe other fields or a combination of fields and click save.
- To set **Participant Display Logic,** use the logic editor to specify which records should appear in the MyCap Participant List, (e.g., if not all participants are using MyCap).

The MyCap Participant List under **MyCap Participant Management** shows each participant's Record ID, Install Date, Baseline Date, and unique participant invitations (QR code & Dynamic Link). It also provides quick "actions" to message a participant or delete/add back the participant from the MyCap Participant List. Note: Deleting a participant from the list does not delete their record from the REDCap project.

Determining How Participants Join the Project

PARTICIPANT'S UNIQUE JOINING QR CODE AND HYPERLINK

Participants can join a project on the MyCap app using a QR code or hyperlink that is unique to them and their record in a REDCap project. A participant's record must already exist in the REDCap project for a QR code or hyperlink to be created for them. The MyCap QR code and dynamic links (hyperlinks) consist of three elements:

1. Endpoint: The REDCap server URL.
2. Project Code: An alias for a REDCap project ID. (e.g., P-GXNLSG9A4PQWADW9DQK2 maps to REDCap PID 1234).
3. Participant Code: An alias for a REDCap record ID. (e.g., U-VFSLCR761K626ZMFEL2E maps to REDCap record = 1 in REDCap PID 1234)

MyCap uses project and participant code aliases for security purposes to avoid transmitting real REDCap project IDs or record IDs to the MyCap app. Example QR code contents might look like:

{"endpoint": " https:\/\/redcap.YOURSITE.edu\/api\/?content=mycap", "studyCode": "P-GXNLSG9A4PQWADW9DQK2", "participantCode": "U-VFSLCR761K626ZMFEL2E"}

INVITE PARTICIPANTS TO JOIN A PROJECT

When considering which method – scanning a QR code or clicking on a hyperlink to join a project – might be easiest for participants, consider these tips:

a) Dynamic links, which are similar to a hyperlink, can be sent via email (or text if an SMS messaging service is enabled) to the participant so they can easily join from their mobile device. If a participant does not yet have MyCap installed, the hyperlink will open the participant's app store and direct them to the MyCap app to install the MyCap app. Once MyCap is installed, and they open the app, they will be prompted to join the project. If the participant already has MyCap installed, when they click on the hyperlink MyCap will open and they will be prompted to join the project
b) QR Codes are ideal to use when the participants can join a project while in person with the project team. In this scenario, the QR code can be displayed on a project team member's computer or device, and the participant can scan it with their own device. The QR Code may be sent via email, however this method may not be feasible for participants if participants do not have two devices available – one to display the QR code and another to scan it.

From the **MyCap Participant Manage > Participant List > Invite Participants,** template instructions for participants are provided to help participants install the MyCap App and join a project. This text (or HTML) can be copied and entered as either 1) **Survey Completion Text** that displays after a survey is completed or 2) an **Alerts & Notifications** message that is sent to the participant after their record is created.

To obtain an individual participant's QR code or hyperlink after their record has been created in the project, see the **MyCap Participant Management > Participant List**. From here, a participant's QR code can also be downloaded or printed, if needed.

4. TESTING THE MYCAP CONFIGURATION

Task Appearance and Behavior

After configuring MyCap Tasks, App Design, and the Participant List, thoroughly assess the project to ensure all information pages (About, Contacts, Links) and MyCap Tasks are displayed and function as expected. *Note: for initial testing, we recommend temporarily setting all schedules to infinite so you can test and review the Task's display and behavior (e.g., Active Task functionality, branching logic, slider response options) before inviting participants to join the project.*

Task Schedules

After thoroughly evaluating each Task, set the task schedule as desired and publish an updated version. Tasks will appear in app in the order they are listed on the Oline Designer and will be organized by "Due Today," "Overdue" and "Upcoming." Go through the tabs to ensure Tasks are triggered and scheduled appropriately. Note: MyCap does not require participants to complete them in order. Participants have the ability to skip around to any survey in "Due Today" or "Overdue." Additionally, Infinite tasks do not appear in the "Upcoming" drop down, preventing clutter of the Activities screen.

Multiple Devices and Operating Systems

We recommend testing on iOS and Android devices for quality assurance purposes.

Publishing the Final Version after Testing

After completing testing, publish an updated version to capture any changes made to the project's MyCap settings. Changes can be made at any time and immediately released by publishing an updated version. Updates and changes will not be reflected in the app if the new version is not published.

Setting up Project User Rights for MyCap

Once a project is configured for MyCap, tailor the project's user rights as needed. Users with Project Design and Setup rights can add or modify MyCap Tasks, Active Tasks, and schedules.

Any user with MyCap Participant Management rights can invite participants to join the project, message participants, and view synchronization issues.

By default, anyone with MyCap Participant Management rights can view all records in a project on the Participant List and view messages from any participant/record. If a project has data access groups (DAG) users will only see the records in their DAG in **MyCap Participant Management** > Participant List, Messages, and Sync Issues.

Moving the Project to Production

As with all REDCap projects, we recommend moving the project to Production after finalizing the initial database design.

Adding New Forms to a Production Project:
To add new forms or make edits to existing forms and instruments in a production project, you must enter Draft Mode. While in Draft Mode, make the desired edits to your forms and instruments. Once your edits are complete, publish the new instrument. This step is crucial before you can finalize MyCap settings. Note: while the project is in Production mode, you can still edit MyCap settings directly without needing to enter Draft Mode.

By following these steps, you ensure that all changes are properly integrated and that the project runs smoothly for all participants.

5. Using MyCap with Participants

MyCap Participant Workflow

Below is a typical workflow for participants using the MyCap app.

1. Participants enroll/consent for the project, which is documented via a REDCap Form or Survey.
2. Participants join the project, which pulls the MyCap configuration from the REDCap server.
3. The participant's device notifies them when a MyCap Task is due (MyCap Classic notification: "You have a MyCap activity due today"; MyCap notification: "[Participant's Profile Name] has a MyCap activity due today") or a MyCap Message/Announcement is received (MyCap Classic notification: "MyCap notification: "[Participant's Profile Name] has a secure message waiting").
4. Participants complete tasks and the data is immediately synchronized with the REDCap project (if the device is offline, data will be synchronized the next time the participant opens the MyCap app and has an internet connection).

Using MyCap Messaging and Announcements

MyCap provides in-app messaging between REDCap users and participants. When a message is sent to a participant, they receive a push notification on their device, saying "You have a secure message waiting." Participants can access and read messages by opening the MyCap Mobile app and navigating to the Messages tab. If push notifications are disabled, participants can still read messages but will not receive a push notification for new messages.

Only project users with MyCap Participant Management rights can read messages from participants, send individual messages to participants and create announcements to all participants (note: Users in a DAG can only make announcements to records in their DAG).

In MyCap Participant Management > Messages, Users see a tab for the Inbox, Outbox, and Announcement.

MYCAP INBOX

The inbox shows all messages that participants have sent. Tapping on "View/Respond" opens the participant's full message thread.

All new messages received from participants will default to **action needed** = yes|no. This triggers a badge (count) that appears beside the **MyCap Participant Management** page link under Data Collection in the REDCap Menu. A badge will also appear on the Messages tab of MyCap Participant Management and the Inbox tab. Note: when messages are received, no REDCap alerts or emails are pushed to project users.

There is an "Action needed" tag associated with each message that can be toggled on or off to help study teams keep track of messages in their queue. **If any user on the project toggles the Action Needed to off, it will be off for all Users.** For example, it might be toggled off after reading the participant's message or when a response is sent.

Clicking **messages** for a specific participant in **MyCap Participant Management** will populate all incoming and outgoing messages associated with that participant.

MYCAP OUTBOX

The outbox shows all messages that have been sent to participants along with corresponding timestamps. Tapping on the message icon under "Action" opens the participant's full message thread.

Clicking **messages** for a specific participant in **MyCap Participant Management** will populate all incoming and outgoing messages associated with that specific participant.

MYCAP ANNOUNCEMENTS

Announcements can be used to send a message to all participants in a project. When you send an announcement to all participants, all participants will receive a push notification on their device saying, "You have a secure message waiting." Participants can read the announcement after opening the MyCap Mobile App and navigating to the Messages tab. This is similar to MyCap's Message feature**. Note that announcements are always visible to all participants no matter when they join the project.** If an announcement is sent today and a participant joins a project tomorrow, the participant will see the announcement.

NOTIFICATION SETTINGS

Participants receive a daily notification on days when they have a MyCap task due. You can specify the time for these daily notifications. The notification will display "[Profile Name] has a task due today" at the chosen time. By default, the notification time is set to 8 AM in the participant's time zone.

Troubleshooting Synchronization Issues

ABOUT SYNCHRONIZATION ISSUES

In **MyCap Participant Management > App Sync Issues**, any data that could not be saved directly to the REDCap project can be viewed. If there are any issues, the number of issues will appear in Red.

A synchronization issue occurs when the Android or iOS MyCap app sends a task result to the REDCap server that is incompatible with the REDCap project. This typically happens when a new project version has been published and a participant completes an outdated version of a task.

The purpose of the synchronization issue mechanism is to always capture data that is sent from the MyCap app, ensuring no data loss. However, it is not currently possible to automatically re-sync data after fixing the error. The data must be manually entered or imported into the REDCap project.

All Synchronization issues indicate a problem and should be investigated. Here is an example:

1. A task/instrument is created with a "Multiple Choice - Radio Buttons (Single Answer)" field and response options have values of 0, No | 1, Yes | 2, Sometimes.
2. After the MyCap project configuration is published (version 1).
3. A participant joins the project.
4. The participant completes the task with answer No (0) and the result is sent to REDCap to be saved.
5. REDCap **accepts the result** because No (0) is a valid choice value.
6. Later, the values of the multiple-choice fields are changed to No, No; Yes, yes; Sometimes, Sometimes
7. An updated version of the MyCap configuration is NOT published.
8. The participant completes the task again with an answer of No (0) and the result is sent to REDCap to be saved.
9. REDCap **rejects the result** because No (0) is no longer a valid choice value. It was changed to No (No).
10. MyCap creates a synchronization issue using the rejected REDCap response.
11. You can review the synchronization issue and see that the results could not be saved due to an invalid choice value.
12. A project user will need to create the appropriate REDCap entry using the data provided in the synchronization issue and then flag the synchronization issue as resolved.
13. A new MyCap project configuration (version 2) will be published so participants receive updated multiple choice field values.

SYNCHRONIZATION ISSUE OVERVIEW

The synchronization issue table and overview provided when viewing the details of the task include:

- **Date Received** - Date the server received the task result.
- **Status** - All issues default to unresolved. The status can be changed to resolve in the Resolution Form.
- **Participant** - The participant that completed the task. This will show a participant code if the participant cannot be found in REDCap.
- **Instrument** - The name of the task/instrument completed by the participant. The intent is to show how MyCap's sync issue data maps to a REDCap instrument record.
    - Field - The REDCap field name or MyCap field annotation.
    - REDCap - The field value in REDCap. Will display N/A if there is no instrument instance matching @MC-TASK-UUID.
    - MyCap - The field value sent by MyCap.
- **Result ID** - Unique identifier generated by the MyCap app that uniquely identifies the result.
- **Error Type** - Typically Could not save to REDCap or Could not find participant.

RESOLUTION

While it is not currently possible to automatically 're-sync' data after resolving a synchronization error, the issue can be "resolved" so it no longer appears in the count of synchronization issues in the app Sync Issues tab and as "unresolved" in the app Sync Issues tab.

- **Status** - All issues default to unresolved but can be manually changed to resolved.
- **Comment** - Enter a comment to specify whether the issue has been resolved or not, if desired. For example, "Resolved: this participant was deleted from REDCap." or "Resolved: the "foo" multiple choice option value was changed in REDCap but the participant completed this task in offline mode, so they did not have the most recent version of the MyCap configuration."

SYNCHRONIZATION ISSUE EXAMPLES

<u>MyCap was unable to parse the error</u> - The following fields were not found in the project as real data fields: MyCap sent a value for a field that no longer exists or sent a value for a field value that no longer exists.

<u>Could not find participant code</u> – the first instrument contains a field having annotation: @MC-PARTICIPANT-CODE. MyCap uses this field to match a participant code to a REDCap Record ID. MyCap searched through all the records to find the participant code but did not find it, so MyCap could not associate the task result with a record. This typically happens in the following scenarios:

1. A participant is created.
2. Participant joins project using the MyCap App
3. If the participant is deleted, or someone manually changes the participant code.
4. Participant completes a task in the MyCap App
5. MyCap cannot find the participants because they were deleted, or the code was changed.