



# CFRI DM REDCap Mobile App Manual

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## Document History

Version Number:	Summary of Changes Made:	Effective Date:
1	New Document	November 2, 2015
2	Compatibility update	February, 23, 2016

## What is the REDCap Mobile App?

The REDCap Mobile App is an application that gives you the capability to collect your REDCap data in an offline (without internet) environment and sync the data back to your project on the REDCap server when it's connected to the internet.

## Compatibility

- iOS - Works on iPhone 4 and up, iPad 2 and up - requires iOS 6.0 or later
- Android - Requires Android 4.2 and up
- Device must support Encryption.
- Currently, the app does not support complex REDCap project structure (Large number of events / Fields/Instruments).

## Definitions

- **Qualified Investigator (QI):** Primary individual in charge of and responsible for the proper conduct of a research project.
- **Project Administrator (PA):** Person responsible for the development of REDCap data instruments and the overall management of the project data.
- **Research Team:** Research assistants/nurses, data entry personnel and other personnel involved in the clinical research study and granted access to REDCap projects. The Research Team Members report to the QI but are generally directly supervised by the PA.
- **CFRI Data Management (DM):** CFRI Support Team that is responsible for managing projects in REDCap and assisting research teams in conducting research studies.
- **REDCap API (Application Programming Interface):** Interface that allows external applications to connect to REDCap remotely, and is used for programmatically retrieving or modifying data or settings within REDCap, such as performing automated data imports/exports to/from a specified REDCap project.

- REDCap API Token:** The Mobile App uses API tokens, which determine which data in REDCap are accessible from the app. These tokens consist of a 32-character hex string that is unique to a particular REDCap user's rights in a particular REDCap project. Any given token can only be used to access a single project with the User Rights assigned to a particular REDCap user.

## Collecting data from a device with or without the Mobile App

You DO NOT need to use the Mobile App to enter data into REDCap from a device. If you have an internet connection, you can simply use a browser to collect data through surveys or data entry forms.

The two options for collecting data from a device are compared below:

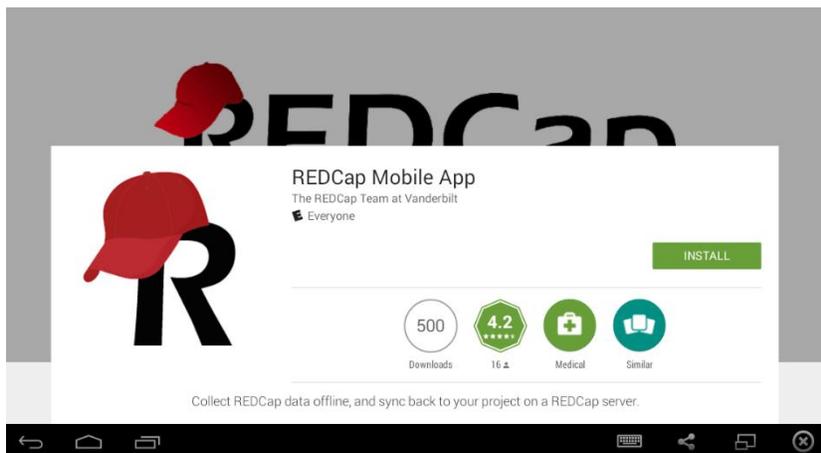
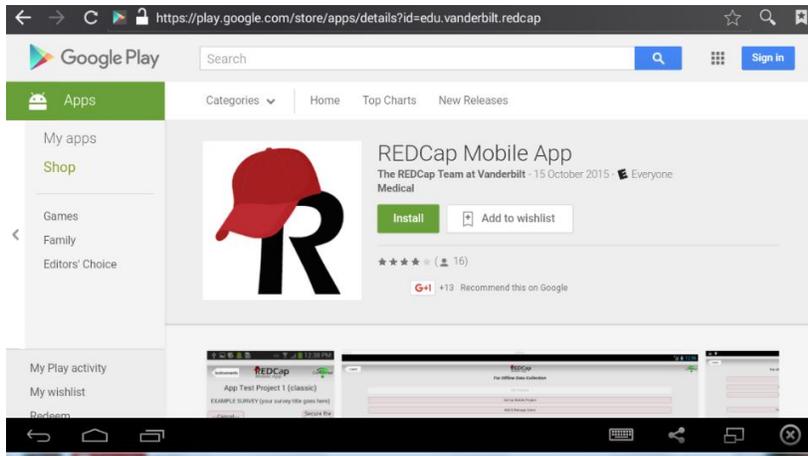
Online Browser	Mobile App
Use if there is a reliable and secure and internet connection	Use if there is no, or an unreliable, internet connection
Data is directly entered into the REDCap project once a form is saved on the device. No data is stored on the device.	Data is saved on the device once a form is saved, and will not be entered in the main REDCap project until data is synced (via an internet connection).
Data is always up-to-date in the REDCap project.	Data might be out of sync if the data stored on the device is not regularly synced to the main REDCap project.
No additional security measures required on the device.	Further security measures must be taken to ensure data security.
The REDCap interface is exactly the same as it is on desktop.	The interface is adjusted to fit uniquely for a mobile device, and looks slightly different.
User accounts and rights set in REDCap are applicable.	Separate user accounts and user rights are needed to be created in the App and API tokens are required to link back to user accounts in the main REDCap project.

## Download

Download the REDCap Mobile App directly on your device by using below links or log in your App store and search for "redcap" (Vanderbilt University)

- iOS app: <https://itunes.apple.com/us/app/redcap-mobile-app/id972760478>

- Android app: <https://play.google.com/store/apps/details?id=edu.vanderbilt.redcap>

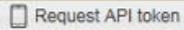


## Procedure

1. Qualified Investigator (QI) or Project Administrator (PA) requests a Mobile App feature on a project through REDCap Help Desk (located in the REDCap left-end menu) by filling out a Mobile App Request Form. **Note:** CFRI REDCap Help Desk section is only available to users with 'User Rights'.
2. Upon approval, QI or PA receives the REDCap Mobile App User Manual with instructions on how to proceed.
3. QI or PA grants 'Mobile App' rights to themselves and to users who will collect data through the App.
4. Individual users can request an API token through the 'REDCap Mobile App' section (located in the REDCap left-end menu).

**NOTICE:** In order to set up this project in the REDCap mobile app, you must first request an API token.

You currently do not have an API token yet for this project. Having a REDCap API token allows other programs, scripts, or apps to communicate with the REDCap server remotely. An API token is required for using the REDCap mobile app so that the app can download and upload your project information and data. To request an API token, simply click the button below, which will send an email request to your local REDCap administrator. Once they have granted you an API token, in which you will be notified via email, then you may return to this page to set up this project on the REDCap mobile app on your device.

 Request API token

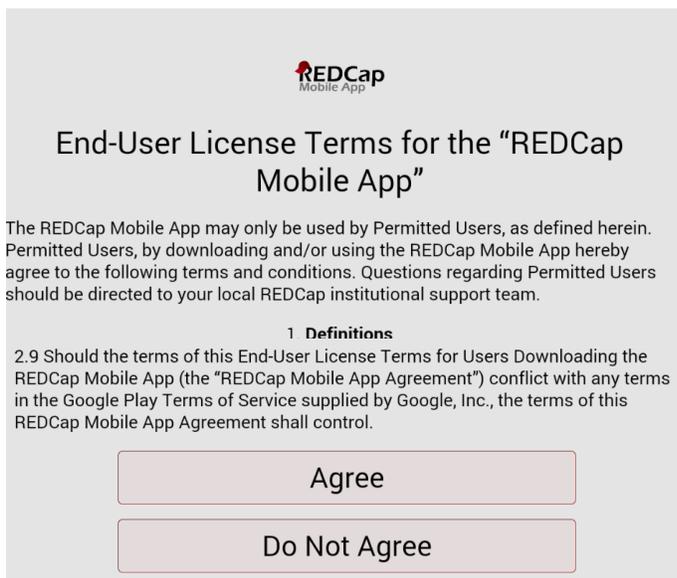
5. Once the token is created by CFRI DM Team, the user is notified by email.
6. A QR code is now available through the 'REDCap Mobile App' section for the user to set-up the project on the App.

It is assumed that you have already downloaded the REDCap mobile app on your mobile device or tablet. To set up this project in the REDCap app, open the app on your device, click the 'Set Up Mobile Project' button, then click the 'Scan QR Code' button, and then scan the QR code that you see displayed below.



[Can't get the QR code to work?](#)

**Note:** To use QR code, your device must have a built in camera and a QR code reader App installed. An alternative way to set up this project in your REDCap App on your mobile device or tablet is to use an initialization code. The initialization code will expire in 10 minutes.



The screenshot shows the 'End-User License Terms for the "REDCap Mobile App"' screen. At the top, there is the REDCap Mobile App logo. Below the title, a paragraph states: 'The REDCap Mobile App may only be used by Permitted Users, as defined herein. Permitted Users, by downloading and/or using the REDCap Mobile App hereby agree to the following terms and conditions. Questions regarding Permitted Users should be directed to your local REDCap institutional support team.' This is followed by a section titled '1 Definitions' and a paragraph: '2.9 Should the terms of this End-User License Terms for Users Downloading the REDCap Mobile App (the "REDCap Mobile App Agreement") conflict with any terms in the Google Play Terms of Service supplied by Google, Inc., the terms of this REDCap Mobile App Agreement shall control.' At the bottom, there are two buttons: 'Agree' and 'Do Not Agree'.

## Features

The REDCap Mobile App supports the following features:

- The mobile App is ideal for data collection that needs to be performed in areas without any available internet access.
- The mobile App can also be useful for those occasions when data collection is performed in areas with sporadic internet access.
- The user interface allows multiple individuals to access the App on a single device via a secure login.
- Teams with multiple mobile devices have the capability to collect data for one project, or multiple projects simultaneously.
- Administrative functions and other participants' records can be made secure prior to handing the mobile device to a participant during survey completion.
- In addition to text, photos can be captured by the mobile App and transmitted to the server.

## How does the REDCap Mobile App work?

### *Create REDCap Mobile App Admin account /user account on mobile device*

The REDCap Mobile App uses an Admin account to manage its users. The Admin can create/update/delete Mobile App users, reset passwords and grant user rights on the App. The Admin DOES NOT set-up projects on the App or collect data. This task is done by regular App user accounts. In the REDCap Mobile App each user adds projects to their account through an API token. Each App user maintains unique project copies on the device and cannot share the same REDCap Mobile App projects. If multiple users need to access the same project, they each need to set-up the project independently under their account.

**RECOMMENDATIONS:**

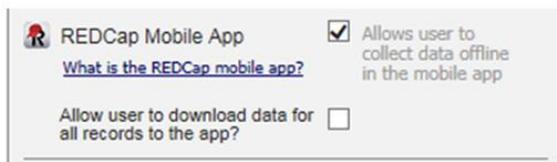
- The REDCap App Admin account should be held by the REDCap Project Administrator (PA).
- Each App user must request an API token from REDCap Mobile App page through their main REDCap project account and set-up the project on the App using their user-specific QR or initialization Code.
- **Note: The Admin password cannot be reset, so don't lose it!**



The screenshot shows a form for adding an admin user. It includes fields for Admin Username (admin), First Username (nkarduri), 6-digit Admin PIN (masked with asterisks), 6-digit PIN (masked with asterisks), Re-enter 6-digit Admin PIN (masked with asterisks), and Re-enter 6-digit PIN (masked with asterisks). A large button at the bottom is labeled "Add Admin and User".

*Grant Mobile Rights Access and API Token on REDCap Project.*

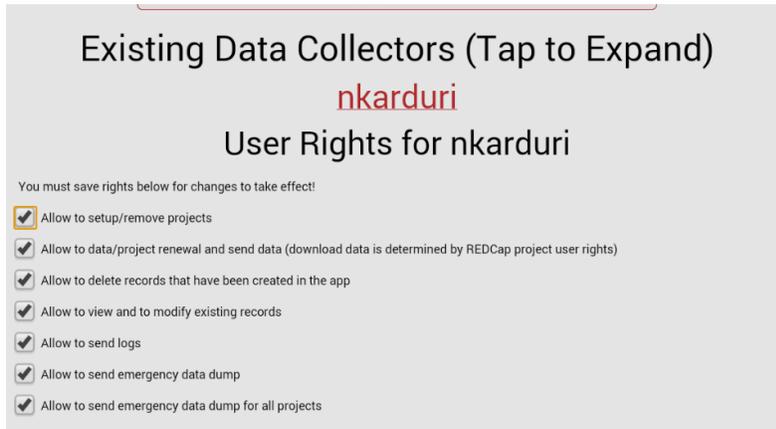
User Rights in Main REDCap Project



The screenshot shows the "REDCap Mobile App" user rights settings. It includes a checked checkbox for "Allows user to collect data offline in the mobile app" and an unchecked checkbox for "Allow user to download data for all records to the app?". A link "What is the REDCap mobile app?" is also visible.

1. The "REDCap Mobile App" privilege allows users to:
  - Set up the project inside the Mobile App on your device.
  - Collect data which is stored locally on the device.
  - Sync that data back to this project on the REDCap server.
  - The REDCap Mobile App section is where users can view the App log and file archive.
2. The "Allow user to download data for all records to the app?" privilege allows users to:
  - Download records from the server to the app.
  - Unchecking this privilege prevents users from unwittingly (or wittingly) downloading lots of sensitive data to their mobile device.
  - If a user is given this privilege, then when they initialize the project in the App and the project contains at least one record, then the App will prompt the user to choose if they wish to download all the records to the App or not.

## User Rights in Mobile App



- Each user account must be created in the REDCap Mobile App and have specific rights assigned to it, which are separate from their main REDCap project user account.
- Users will have a different username and pin/password in the Mobile App compared to the main REDCap project.
- The main project user account is linked through their API token and will ensure the user privileges inside the App mimic the privileges in the main REDCap project, including form rights (no access, read only and edit) and Data Access Groups.

### RECOMMENDATIONS:

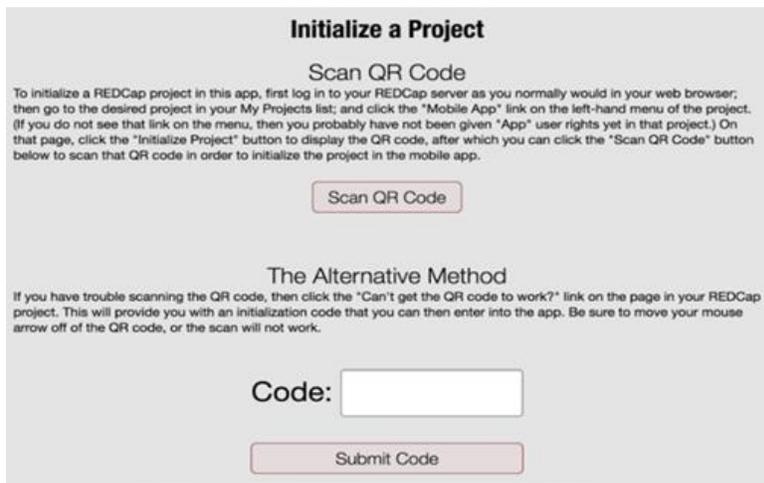
	REDCap Main Project (rc.cfri.ca)	REDCap Mobile App
Project Administrator	<ul style="list-style-type: none"> <li>• Fill out REDCap Mobile App Request</li> <li>• Designate Mobile App-specific user's rights</li> <li>• Assign REDCap Mobile App rights to PA in the server project</li> </ul>	<ul style="list-style-type: none"> <li>• Create own Admin account with pin (Admin pin CANNOT be reset)</li> <li>• Create user accounts, require username and 6 digit pin</li> <li>• Designate user's rights</li> <li>• Cannot set-up projects or collect data</li> </ul>
Data Entry/Regular User	<ul style="list-style-type: none"> <li>• Acquire API token (QR code)</li> <li>• Data Entry form rights and Data Access Groups are identical to the App</li> </ul>	<ul style="list-style-type: none"> <li>• Set-up project using QR or initialization Code</li> <li>• Collect data</li> <li>• Send data to the server and clean and reset project as soon as possible</li> <li>• Send App logs to server every 24h when possible</li> </ul>

### Using Mobile App

## Set Up Mobile Project



- Scan QR Code or Enter Initialization code (10 digit)



**Note:** To use QR code, your device must have a built in camera and a QR code reader App installed.

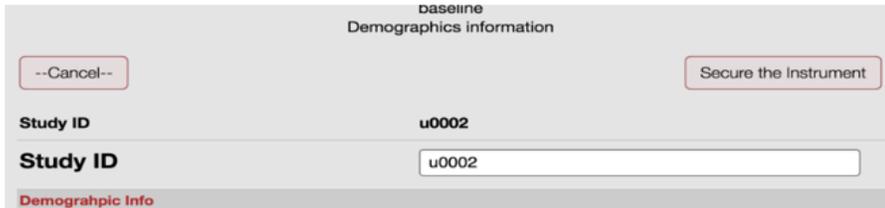
- Downloading the project. In addition to the data collection instruments, you can choose whether you want to download data from the project or not (when allowed).



## Data collection (OFFLINE – NO INTERNET CONNECTION)

- Tap the Collect Data button and choose an instrument and a record. Enter data and set the form status at the bottom as needed.
- Records can be renamed on the first form. **Note that renamed records will appear as new records when uploaded to the main database, so you will need to delete the original record there to complete the replacement process.**

- Instruments can be secured so that participants/users will only have the option of entering data (and not traversing the rest of the app, which can jeopardize confidentiality). They can be unlocked via the primary user's pin.



- All data collection can be offline – without Internet access.

### Sending Data

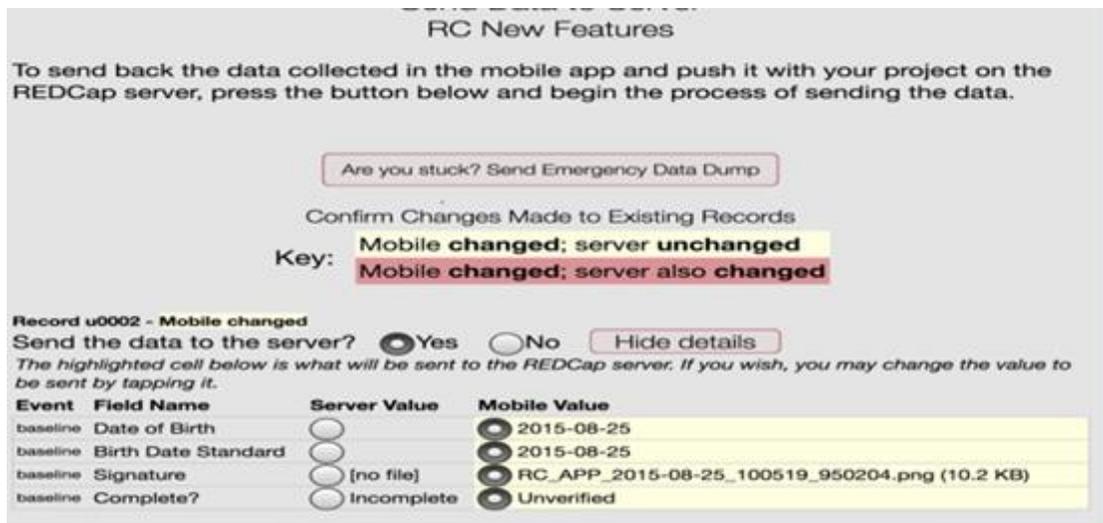
When mobile device is connected to INTERNET, you can send data to the main REDCap project on the server.

### New Records

- They will be added to the main REDCap project immediately if no conflicts exist.
- If auto-numbering is enabled and there is a record name conflict, REDCap will automatically update the record numbers to the next numerical series of numbers before uploading and provide details on the app page.

### Existing Records

- An option to send the data to the server for each modified record appears, as well as the opportunity to view details of the differences between server data and app data for that record.



**RC New Features**

To send back the data collected in the mobile app and push it with your project on the REDCap server, press the button below and begin the process of sending the data.

Are you stuck? Send Emergency Data Dump

Confirm Changes Made to Existing Records

Key: **Mobile changed; server unchanged**  
**Mobile changed; server also changed**

Record u0002 - Mobile changed

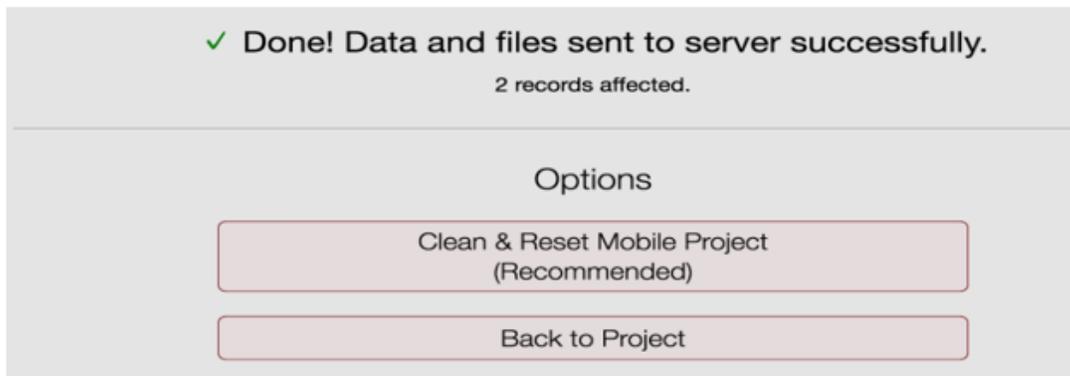
Send the data to the server?  Yes  No

The highlighted cell below is what will be sent to the REDCap server. If you wish, you may change the value to be sent by tapping it.

Event	Field Name	Server Value	Mobile Value
baseline	Date of Birth	<input type="radio"/>	<input checked="" type="radio"/> 2015-08-25
baseline	Birth Date Standard	<input type="radio"/>	<input checked="" type="radio"/> 2015-08-25
baseline	Signature	<input type="radio"/> [no file]	<input checked="" type="radio"/> RC_APP_2015-08-25_100519_950204.png (10.2 KB)
baseline	Complete?	<input type="radio"/> Incomplete	<input checked="" type="radio"/> Unverified

- If a record is deleted from the app, it will not be deleted from the server after data syncing. You may only delete records from the main project on the server.

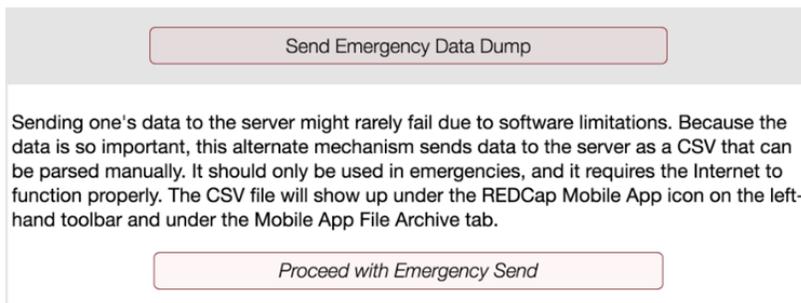
Two options after data is sent:



It is recommended to click “Clean & Reset Mobile Project” to remove all data stored on the mobile device and replace with the most current project information from the main REDCap project.

### Send Emergency Data Dump

When something prevents the app from sending data back to the server normally, you can use “Send Emergency Data Dump” option to send data to the server as a CSV. The file will show up under Mobile App File Archive tab.



### Remote Lockout

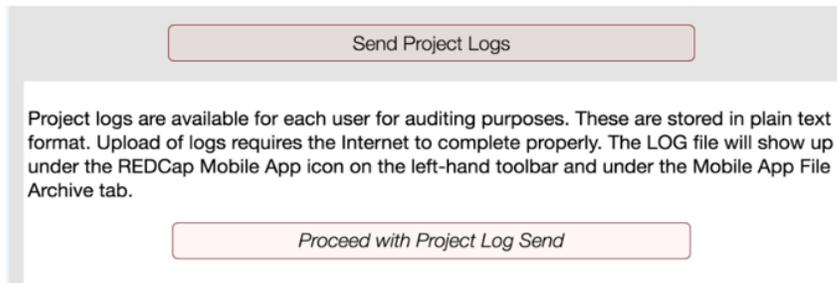
- Revoke “REDCap Mobile App” user privilege on the User Rights page in the project to prevent users from accessing the project on their mobile devices.
- Delete API token to perform remote lockout. In this way, the lockout will be permanent and will cause all data currently stored in the app to be lost.



### Mobile App Activity Log

#### Mobile App logs

- Project log for activity on the REDCap Mobile App is stored in the main project Mobile App File Archive. These can be transmitted to the server (for one given project) via the Send Project Logs button on the Project menu.



It records data creation, modifications, and uploads; renaming, deletion, and viewing of records; and downloads of project instruments and records.

#### REDCap Mobile App Section (in main project)

It displays a log of all mobile app related activity.

### IOS APP test - Naveen

#### REDCap Mobile App

Set Up Project in Mobile App

Mobile App Dashboard

Mobile App File Archive

Displayed below is a log of all mobile app related activity with regard to setting up a project in the mobile app, downloading data from REDCap to the app, and so forth.

Mobile App Dashboard of User Activity		
Time / Date	Username	Event
10/14/2015 12:49pm	nkarduri	Import data from app (1 new record created)
10/14/2015 12:48pm	nkarduri	Set up project in app
10/14/2015 12:44pm	nkarduri	Import data from app (1 new record created)
10/14/2015 12:44pm	nkarduri	Import data from app (1 new record created)
10/14/2015 12:43pm	nkarduri	Set up project in app

**REDCap Mobile App**

- Set Up Project in Mobile App
- Mobile App Dashboard
- Mobile App File Archive

Listed below are all the files sent from the mobile app for this project. These might include logging files of all activity and data changes made on the app for a given user, as well as data exports from the app when something prevented the app from sending data back to the server normally (i.e., escape hatch). You may click the file icon on the right to download it.

Files Sent from Mobile App		
File Info	File Type	Download
<b>1444852201268.log.csv</b> Date uploaded: 10/14/2015 12:50pm Uploaded by: nkarduri (Naveen karduri) File size: 0.52 KB	App Logging	
<b>1444851920580.log.csv</b> Date uploaded: 10/14/2015 12:45pm Uploaded by: nkarduri (Naveen karduri) File size: 0.97 KB	App Logging	

If you have any questions or concerns about REDCap Mobile App, please contact us at [redcap@cfri.ca](mailto:redcap@cfri.ca).