





## Standard Operating Procedure: REDCap Application Programming Interface (API)

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### DOCUMENT HISTORY

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1	New Document	December 16, 2020
2	Revision- added section 6.5	March 8, 2021

### APPROVALS

Approver Name	Approver Signature	Date
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## 1. PURPOSE

- 1.1. To define the procedure used for the utilization of the UBC Faculty of Medicine (FoM) REDCap Application Programming Interface (API). The API token is used to allow external applications to connect to REDCap remotely and is used for programmatically retrieving or modifying data within REDCap, such as performing automatic data imports and exporting from a specified REDCap project.



## 2. SCOPE

- 2.1. This procedure applies to the FoM Research Data Management (DM) Team members, Principal Investigators (PI), Project Administrators (PA) and Research/Project Team members involved in the request for support services and the usage of REDCap API.

## 3. RESPONSIBILITIES

- 3.1. FoM Research DM Team is responsible for managing API token requests and providing the necessary API documentation and training.
- 3.2. PI and/or PA are responsible for the initial request and for adhering to the FoM Research DM policies and recommendations as they relate to API usage.
- 3.3. PI and/or PA are responsible for testing and documenting the API code throughout its development.

## 4. RELATED SOPS/DOCUMENTS

- 4.1. REDCap API security – Best practices and User Manual

## 5. DEFINITIONS

- 5.1. **Principal Investigator (QI)/Project Lead:** Primary individual in charge of and responsible for the proper conduct of a research project and/or sponsor for non-research projects.
- 5.2. **Project Administrator (PA):** Person responsible for the development of REDCap data instruments and the overall management of the project data.
- 5.3. **Research/Project Team:** Research/project assistants, nurses, data entry and other personnel involved with and granted access to the REDCap project. The Team members report to the QI/Project Lead but are generally directly supervised by the PA.
- 5.4. **FoM Research Data Management (DM) Team:** Team Lead, Scientific Analyst and other FoM DM individuals responsible for managing projects in REDCap and assisting Research/Project Teams in conducting research studies or projects.
- 5.5. **REDCap Project:** A set of data entry forms, surveys, schedules and other data management tools pertaining to a specific research study or project.



- 5.6. **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.
- 5.7. **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.
- 5.8. **FoM REDCap Development (Dev) Instance:** REDCap installation/server used for testing, virtually identical as production or live installation/server.

## 6. PROCEDURE

### 6.1. API Token Request

- 6.1.1. The PI or PA request an API token on a project by going to the Applications Menu on the Redcap navigation panel. Click on "Request Token" button, and a request is automatically sent to the FoM Research DM Team for processing and review.

**Note: In order to be able to request an API token, the user must have API export/import rights, which is managed in the User Right Application.**

- 6.1.2. The FoM Research DM Team contacts the PI/PA to obtain a brief summary of the API objectives and requirements.
- 6.1.3. The request is reviewed by the FoM Research DM Team.

### 6.2. API Token Request Approval

- 6.2.1. The approval process varies depending on the project requirements reported by the user:
  - 6.2.1.1. Requests related to the REDCap Mobile App are approved after confirmation of the PI approval.
  - 6.2.1.2. Requests related to exporting data for analysis or visualization (e.g. PowerBI, R, etc.) are approved after confirmation of the PI approval. API rights should be set to "export" only.
  - 6.2.1.3. Request for API-enabled project development should follow the process below.



### 6.3. API-enabled Project Development

6.3.1. Upon confirmation of the PI approval, the FoM Research DM Team creates a copy of the production project (only the structure) in REDCap Development and the requested REDCap user account is added to the project. The user then requests an API token for REDCap Development project, which is approved by the FoM Research DM Team. The user is also sent a document outlining the API security best practices (*See API security – Best practices and User Manual.pdf*).

6.3.2. The REDCap user develops their application using the API token in REDCap Development, applying adequate documentation and testing.

### 6.4. API Approval

6.4.1. Once ready, the REDCap user demonstrates the finished application and documentation to the FoM Research DM Team.

6.4.1.1. For external applications (code hosted on external servers), no detailed code review is necessary.

6.4.1.2. For plugins needing to be hosted internally, a detailed code review is performed by the FoM DM Research Scientific Analyst.

6.4.2. Once review is complete and the application is approved by the FoM DM Research Scientific Analyst, an API token will be provisioned to the requested REDCap user account in the REDCap Production environment.

6.4.3. Any changes to token use case or functionality must be preapproved by the FoM Research DM Team.

### 6.5. API Token Disablement

6.5.1. Once a REDCap User is no longer part of a Research Team, the PA will disable the user's project access and API token by setting an expiration date in the User Rights Application. On and after the expiration date, the user will not longer have access to the project and their API token will be disabled.

6.5.2. When a project is archived, FoM Research DM Team sets the expiration dates on all user accounts in the project to the archiving date to ensure no users can directly access an archived project. This process also disables API tokens.

6.5.3. If a REDCap User's API token is compromised, the REDCap User can manually delete their API token through the User Rights Application.

6.5.3.1. If the PA would like to delete an API token, they can contact the DM Team to delete the token.

6.5.4. If a User account is suspended, their API token will be disabled until their account is unsuspended.



## 7. REFERENCES

N/A