Getting data into REDCap with REDCapR

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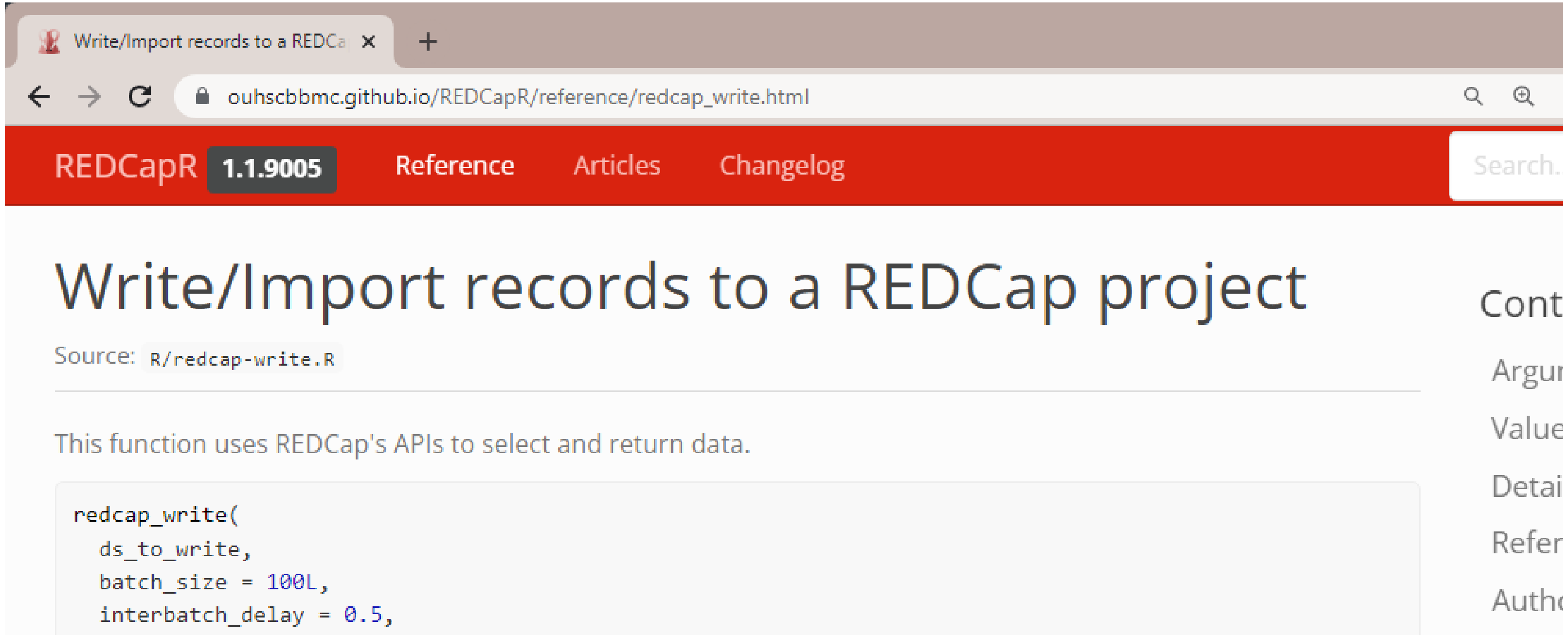
Uploading vs Downloading?

- Writing data *to* REDCap is more difficult than reading data *from* REDCap.
- When you read, you receive data in the structure that the REDCap provides you.
- You have some control about the columns, rows, and data types, but there is not a lot you have to specify to avoid errors.
- In contrast, the structure of the dataset you send to the REDCap server must be precise.
- You need to pass special variables so that the REDCap server understands the hierarchical structure of the data points.

Writing Itself is Easy

```
REDCapR::redcap_write(
  ds_to_write                 = ds_patient,
  redcap_uri                  = credential$redcap_uri,
  token                       = credential$token,
  convert_logical_to_integer  = TRUE
)
```

https://ouhscbbmc.github.io/REDCapR/reference/redcap_write.html


Write/Import records to a REDCa
ouhscbbmc.github.io/REDCapR/reference/redcap_write.html
REDCapR
1.1.9005
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Write/Import records to a REDCap project

Source: R/redcap-write.R

This function uses REDCap's APIs to select and return data.

```
redcap_write(
  ds_to_write,
  batch_size = 100L,
  interbatch_delay = 0.5,
```

Preparation of the Datasets Takes Effort

- Writing multiple datasets --each with the right grain.
- Adding plumbing variables

If you are new to REDCap and its API, please first understand the concepts described in these two REDCapR vignettes:

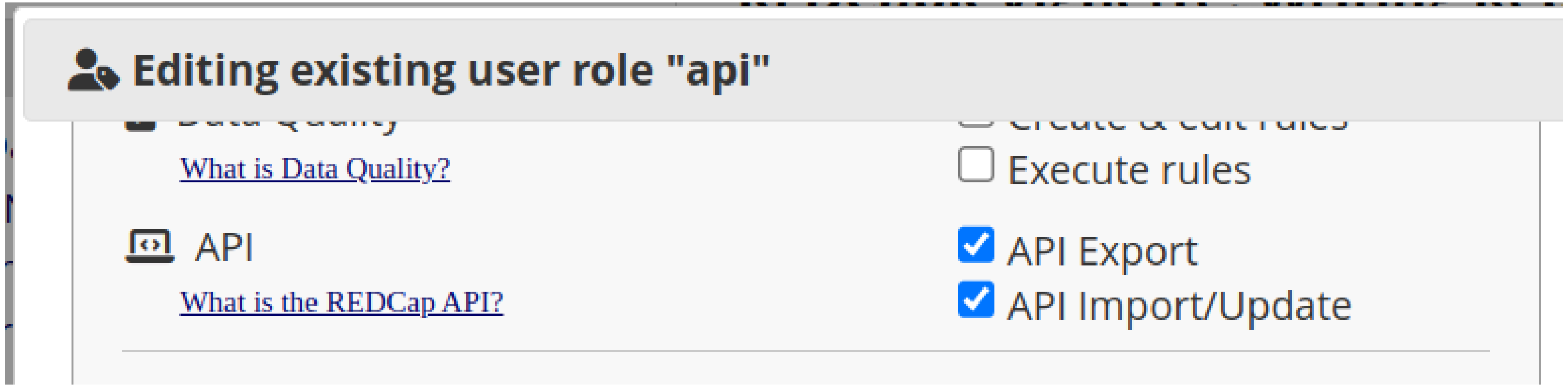
- Typical REDCap Workflow for a Data Analyst (essentially everything in this workshop until now)
- Retrieving Longitudinal and Repeating Structures

REDCapR

- Uses the httr (which uses curl) to interact with a REDCap server.
- In a sense, REDCapR's goal is to directly translate data between REDCap's MariaDB and R's `data.frame`.
- Also check out redcapAPI. Benjamin Nutter have talked a lot over the years.
- Packages like tidyREDCap, REDCapTidieR, & REDCapDM take it a step further for facilitating important tasks.
- Currently, there haven't been any second-level efficiencies developed for uploading, so we'll use REDCapR.
- For a list of all the packages (not just R packages), see REDCap Tools (https://redcap-tools.github.io/projects/).
- A part of this presentation requires the most recent version (that's not yet on CRAN): `remotes::install_github("OuhscBbmc/REDCapR")`

Token Permission

- Make sure the "API Import/Update" box is checked by the project admin.



Editing existing user role "api"

What is Data Quality?

☐ Execute rules

API

What is the REDCap API?

☑ API Export

☑ API Import/Update

- Within REDCapR documentation, "import" means the client is uploading/writing to the server. (Some packages define it differently.)

Vignettes: Writing to a REDCap Project

- https://ouhscbbmc.github.io/REDCapR
- https://ouhscbbmc.github.io/REDCapR/articles/longitudinal-and-repeating.html
    - Stephan and I developed this vignette
- https://ouhscbbmc.github.io/REDCapR/articles/workflow-write.html
    - Raymond and I developed this vignette