Exporting Data from REDCap February 2023 Grand Rounds

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REDCap Services

https://u.osu.edu/redcap/



- Grand Rounds
 - 2nd Tuesday of each month @ 11am
- Monthly Trainings
 - 4th Wednesday of each month @ 12pm
 - New Hire, Design 1, Design 2- Basic, Design 2- Advanced, Data Entry & Program Management, eConsent
- Office Hours
 - Mondays 11am-1pm & Wednesdays 1pm-3pm
 - Drop-in through Zoom link (on website)
- Thursday Consults
 - Form Reviews, Initial Consult, Troubleshooting, eConsent
 - Scheduled: link on website



Agenda

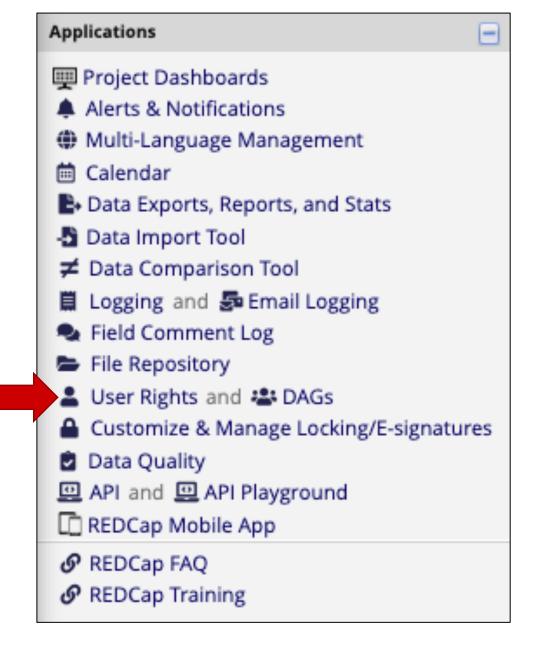
Exporting from REDCap

- Overview
- Options
- Reports
- Statistics packages
 - SPSS
 - R
 - SAS
 - Tableau



Overview Exporting Rights

- Ability to Export
 - Level of export rights
- Ability to obtain API token
 - Export into apps
 - Export into Tableau
- Ability to add/ edit reports
 - Also controlled on report-level





OverviewUser Rights

Privileges for Viewing and Exporting Data

Data Viewing Rights pertain to a user's ability to view or edit data on pages in the project (e.g., data entry forms, reports). Users with 'No Access' Data Viewing Rights for a given instrument will not be able to view that instrument for any record, nor will they be able to view fields from that instrument on a report. Data Export Rights pertain to a user's ability to export data from the project, whether through the Data Exports page, API, Mobile App, or in PDFs of instruments containing record data. Note: Data Viewing Rights and Data Export Rights are completely separate and do not impact one another.

	Data Viewing Rights				Data Export Rights				
	No Access (Hidden)	Read Only	View & Edit	Edit survey responses	No Access	De- Identified*	Remove All Identifier Fields	Full Data Set	
Time Period	0	0	•		0	•	0	0	
EDC (survey)	0	0	•	Z	0	•	0	0	
DSEC (survey)	0	0	•		0	•	0	0	
RISE (survey)	0	0	•	Z	0	•	0	0	
RIDE (survey)	0	0	•	Z	0	•	0	0	
RUED (survey)	0	0	•	Z	0	•	0	0	
EDC- Year (survey)	0	0	•		0	•	0	0	

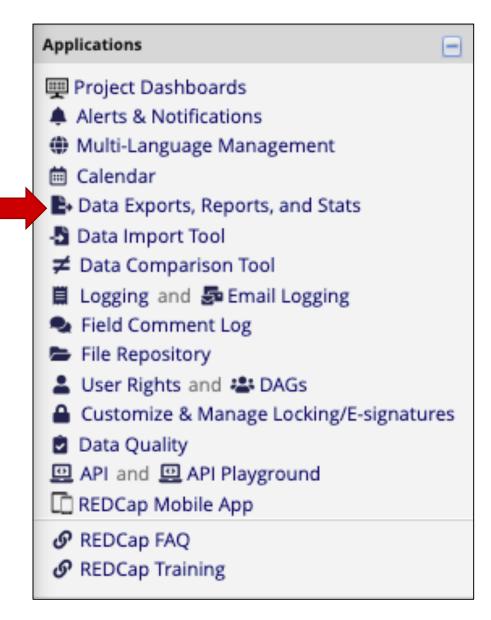
☑ API	API Export
What is the REDCap API?	☐ API Import/Update

Q Add/Edit/Organize Reports
Also allows user to view ALL reports (but not necessarily all data in the reports)



Overview Exporting Module

- Easily view reports
- View plots of descriptive statistics
- Export to multiple statistics packages
- Export entire dataset, custom selections, or reports

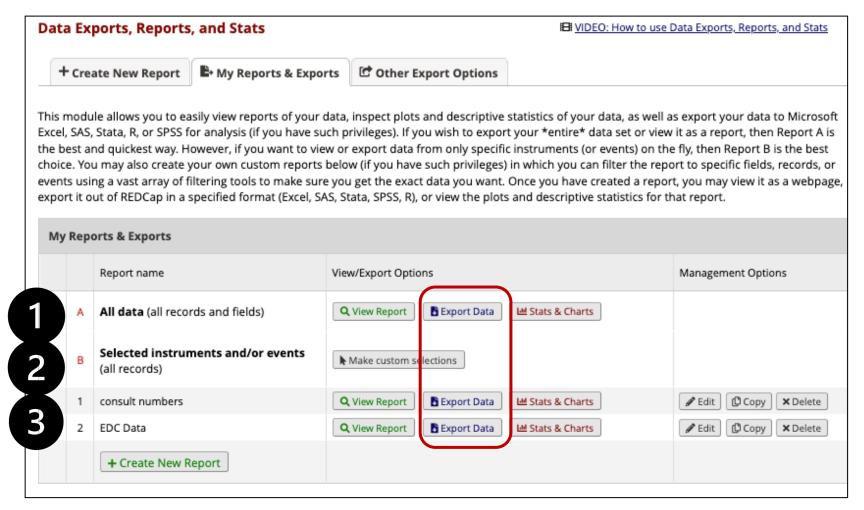




Overview

Exporting Module

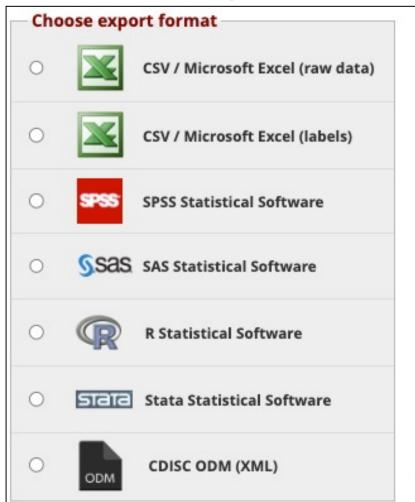
- 1. All Records
- 2. All Records from selected instruments or events
- 3. All Records from generated reports





Overview

Exporting Module Options



De-identification options (optional) The options below allow you to limit the amount of sensitive information that you are exporting out of the project. Check all that apply. Known Identifiers: Remove All Identifier Fields (tagged in Data Dictionary) Hash the Record ID field (converts record name to an unrecognizable value) Free-form text: Remove unvalidated Text fields (i.e. Text fields other than dates, numbers, etc.) Remove Notes/Essay box fields Date and datetime fields: Remove all date and datetime fields. - OR -Shift all dates by value between 0 and 364 days (shifted amount determined by algorithm for each record) What is date shifting? Also shift all survey completion timestamps by value between 0 and 364 days (shifted amount determined by algorithm for each record) Deselect all options

Advanced data formatting options Export blank values for gray Form Status? All Form Status fields with a gray status icon can be

All Form Status fields with a gray status icon can be exported either as a blank value or as "0" (Incomplete). Hint: Blank values are recommended if the data will be imported back into REDCap, in which this preserves the gray status icons for all the imported records.

Export gray Form Status fields with value of "0" >

Set CSV delimiter character

Set the delimiter used to separate values in the CSV data file (only valid for CSV Raw Data and CSV Labels export formats):

, (comma) - default 💙

Force all numbers into a specified decimal format?

You may choose to force all data values containing a decimal to have a specified decimal character (comma or period/full stop). This will be applied to all calculations and number-validated text values in the export file.

Use fields' native decimal format (default)

NOTE: Your data formatting selections above will be remembered in the future and will be pre-selected upon your next export.

Options

De-identification options (optional)

- Remove tagged Identifiers
- Remove unvalidated text fields (not dates or numbers)
- Remove free-form text that may contain identifying details (e.g., physician notes)
- Remove date and time
- Shift dates



De-identification options (optional) The options below allow you to limit the amount of sensitive information that you are exporting out of the project. Check all that apply. Known Identifiers: Remove All Identifier Fields (tagged in Data Dictionary) Hash the Record ID field (converts record name to an unrecognizable value) Free-form text: Remove unvalidated Text fields (i.e. Text fields other than dates, numbers, etc.) Remove Notes/Essay box fields Date and datetime fields: Remove all date and datetime fields - OR -Shift all dates by value between 0 and 364 days (shifted amount determined by algorithm for each record) What is date shifting? Also shift all survey completion timestamps by value between 0 and 364 days (shifted amount determined by algorithm for each record) Deselect all options



Options De-identify

4	Α	В	C	D	E	F	G	Н	1	J
1	record_id	redcap_event_name	redcap_repeat_instrument	redcap_repeat_instance	last_name	first_name	dob	age	gender	preg
2	1	baseline_arm_1			Flintstone	Wilma		26	2	2
3	1	visit_1_arm_1	concomitant_medications	1						
4	1	visit_1_arm_1	concomitant_medications	2						
5	2	baseline_arm_1			Buckeye	Brutus	10/31/1965	52	1	
6	2	visit_2_arm_1	concomitant_medications	1						
7	3	baseline_arm_1			Hamilton	Alexander	1755-01-11	I'm dead	1	
8	4	baseline_arm_1			Burr	Aaron	1756-02-06	262	1	

- 4	Α	В	С	D	E	F	G
1	record_id	redcap_event_name	redcap_repeat_instrument	redcap_repeat_instance	age	gender	preg
2	1	baseline_arm_1			26	2	1
3	1	visit_1_arm_1				2	. 0
4	1	visit_1_arm_1	concomitant_medications	1			
5	1	visit_1_arm_1	concomitant_medications	2			
6	2	baseline_arm_1			52	1	
7	2	visit_2_arm_1	concomitant_medications	1			
8	3	baseline_arm_1			I'm dead	1	
9	4	baseline_arm_1			262	1	



Options

Advanced Data Formatting Options

- Set to default options
 - Unopened forms ("gray" status) exported as "0", or Incomplete ("red")
 - Option to make it BLANK
 - Set to comma to separate values in CSV

```
√ , (comma) - default

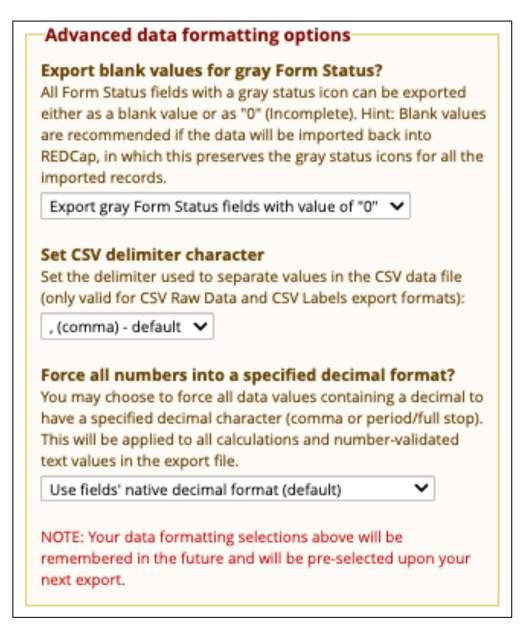
tab

; (semi-colon)

| (pipe)

^ (caret)
```

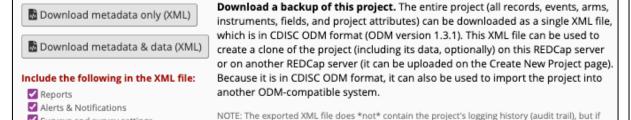
- Number formats as native decimal
 - Period (full stop)
 - Commas





OptionsOther Export Options

- Export XML
 - Metadata and Data

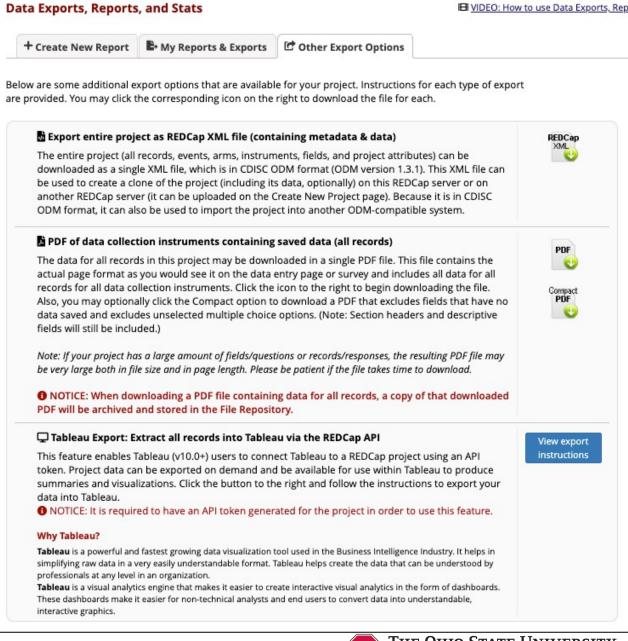


PDF of instruments containing data

- Can be extremely large
- Copy stored in File Repository

you wish to obtain it, you may freely download it any time at the top of the Logging page.

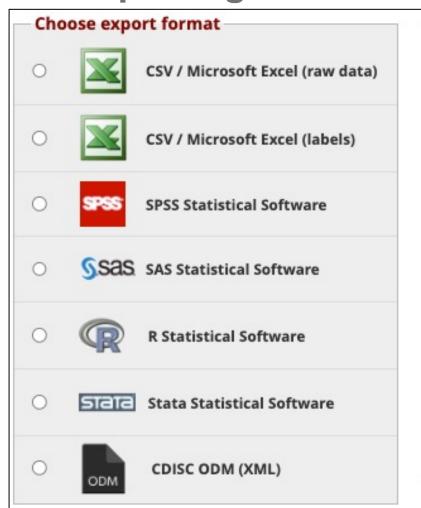
- Tableau*
 - API token required





Surveys and survey settings

Overview Exporting Action



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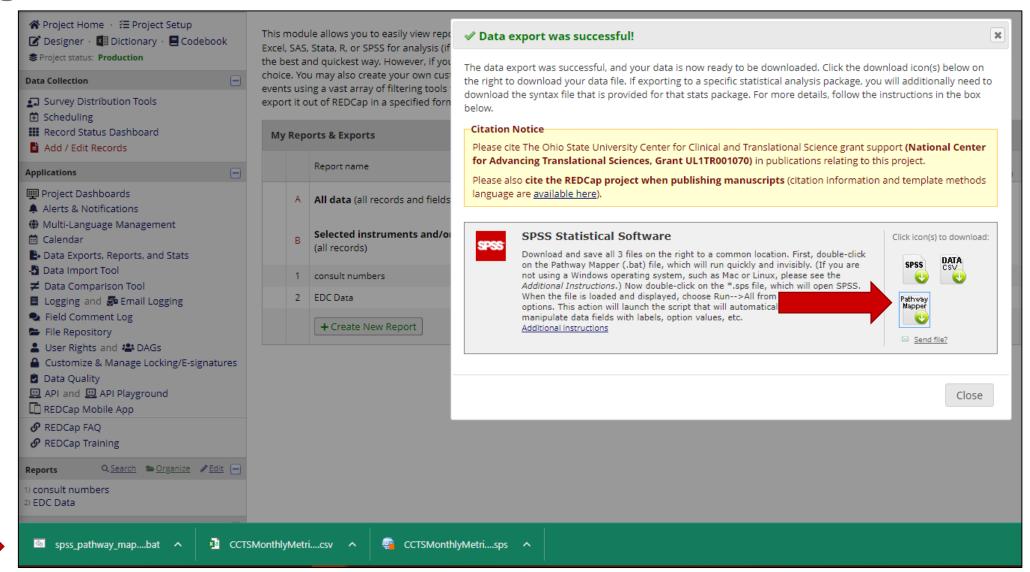
You may choose to force all data values containing a decimal to have a specified decimal character (comma or period/full stop). This will be applied to all calculations and number-validated text values in the export file.

Use fields' native decimal format (default)

NOTE: Your data formatting selections above will be remembered in the future and will be pre-selected upon your next export.

Overview

Exporting Action

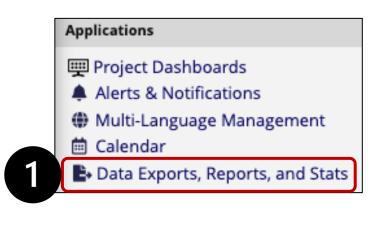


Reports in REDCap

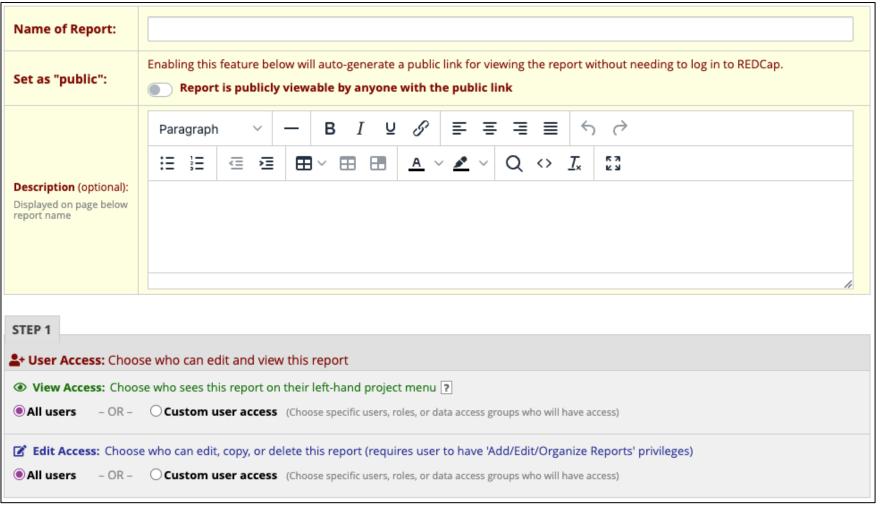


Building

- Create reports by selecting fields and variables from project
- Used to view a snapshot of data rather than an analytical tool
- Typically used for reports that you will run frequently





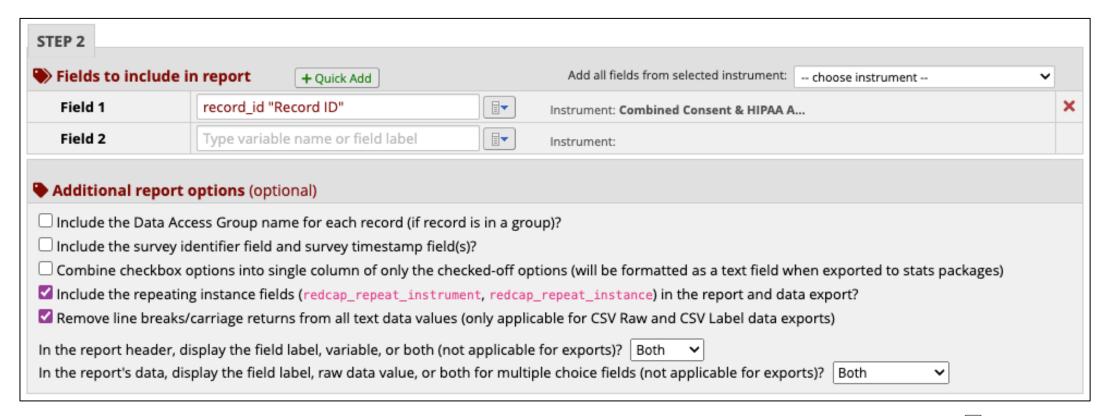


Name the report

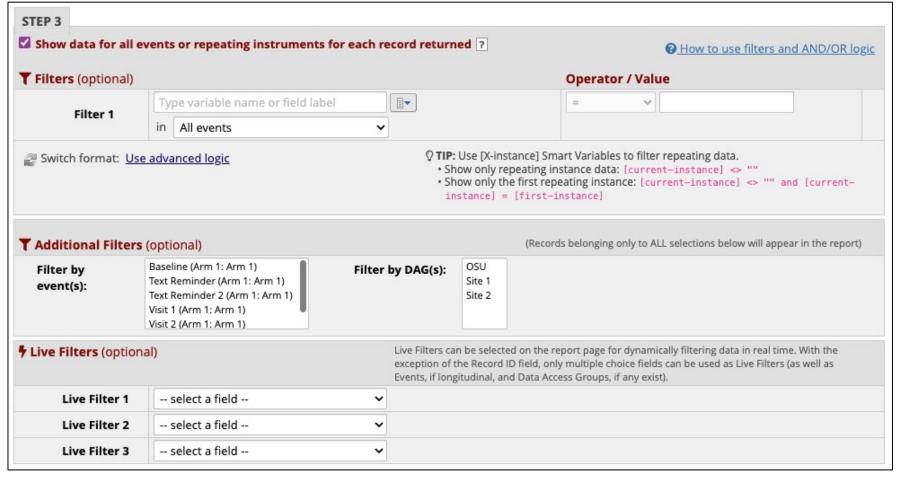
Step 1: Set user access



Step 2: Select fields to include & set Additional report options







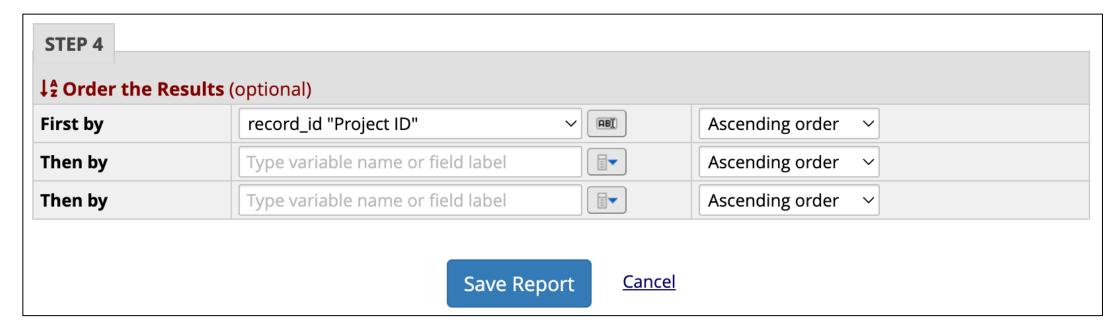
Step 3:
Set filters (if any)
Example: filtering by location

Filter by events

Live filters (multiple choice fields only)



Step 4: Order the records

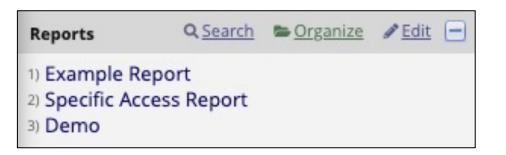


Save Report (Important! Not saved automatically)

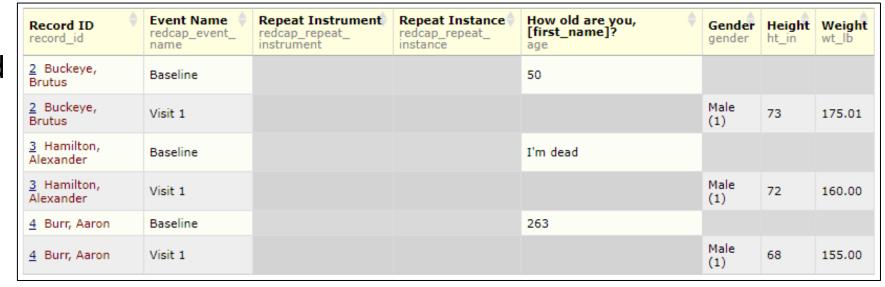


Running

Any report you have access to will be listed in the left menu



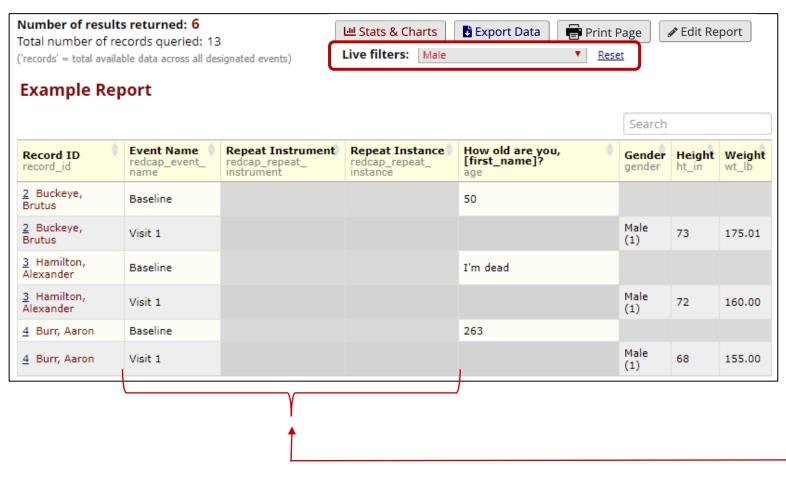
Click the Report Name Report is ran and opened



Reports can be re-sorted by using arrows to the left of the fields Depending on your permissions, you can export, print, or edit the report



Viewing



Same report with a live filter on gender instead of hard coding the filter

Layout isn't optimal because the variables chosen come from different forms, so data are divided, one form per row

Event Name, Repeat Instrument and Repeat Instance cannot be removed

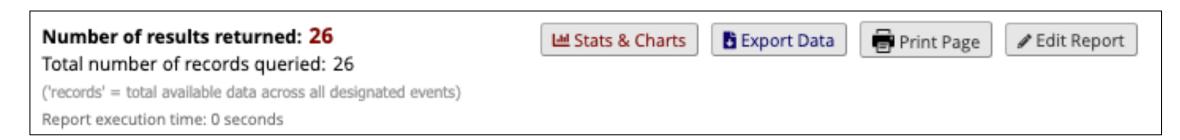


Exporting Options

1. Export from Exporting Module



2. Export from within report itself





Exporting Data To Excel



Excel

Export Options

- Exported as CSV file
- Upload into any Stats Package as is
- View simple statistics Excel
- Export for editing data and re-upload*

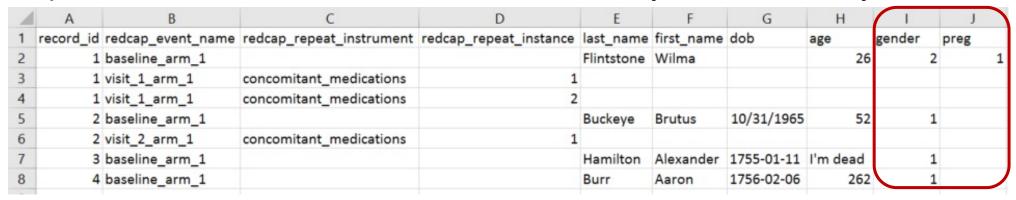




Excel

CSV Export – Raw Data

Exports numeric value of choice fields, usually used for analysis



CSV Export – Labels

Exports text value of choice fields and uses full question text in header

1	Α	В	C	D	E	F	G	Н		J)
1	Record ID	Event Name	Repeat Instrument	Repeat Instance	Last Name	First Name	What is your date of birth?	How old are you, [first_name]?	Gender	Has she ever been pregnant?
2	1	Baseline			Flintstone	Wilma		26	Female	Yes
3	1	Visit 1	Concomitant Medications	1						
4	. 1	Visit 1	Concomitant Medications	2						
5	2	Baseline			Buckeye	Brutus	10/31/1965	52	Male	
6	2	Visit 2	Concomitant Medications	1						
7	3	Baseline			Hamilton	Alexander	1755-01-11	I'm dead	Male	
8	4	Baseline			Burr	Aaron	1756-02-06	262	Male	

Exporting Data To SPSS

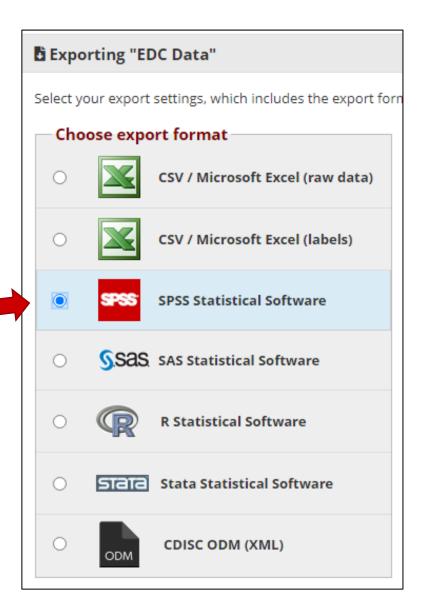


Export Options

Export as CSV file and upload manually

OR

- Export using SPSS Package
 - Ability to map CSV in SPSS without manual mapping

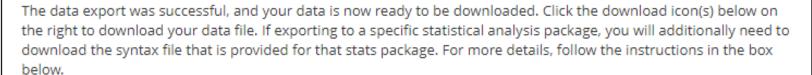




Files

- Includes 3 files:
 - Pathway Mapper (.bat file)
 - Special instructions for Mac
 - SPSS File
 (*.sps file) to
 open SPSS
 - Data as CSV

✓ Data export was successful!



Citation Notice

Please cite The Ohio State University Center for Clinical and Translational Science grant support (National Center for Advancing Translational Sciences, Grant UL1TR001070) in publications relating to this project.

Please also **cite the REDCap project when publishing manuscripts** (citation information and template methods language are <u>available here</u>).



SPSS Statistical Software

Download and save all 3 files on the right to a common location. First, double-click on the Pathway Mapper (.bat) file, which will run quickly and invisibly. (If you are not using a Windows operating system, such as Mac or Linux, please see the Additional Instructions.) Now double-click on the *.sps file, which will open SPSS. When the file is loaded and displayed, choose Run-->All from the top menu options. This action will launch the script that will automatically read in all data and manipulate data fields with labels, option values, etc. Additional instructions



Close

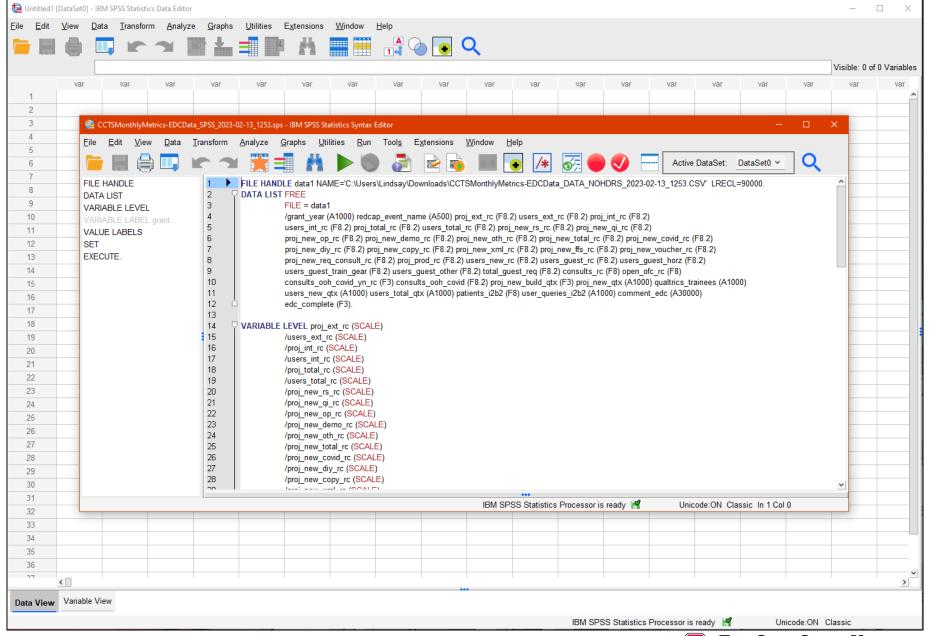


Running Pathway Mapper

```
C:\Windows\system32\cmd.exe
STEP #1: Pathway mapping is COMPLETE!
 NOW...
STEP #2: Double-click the *.SPS file, which will open SPSS.
STEP #3: Once SPSS has opened, choose Run->All from the top menu options.
 (Press ENTER to close this window)
```

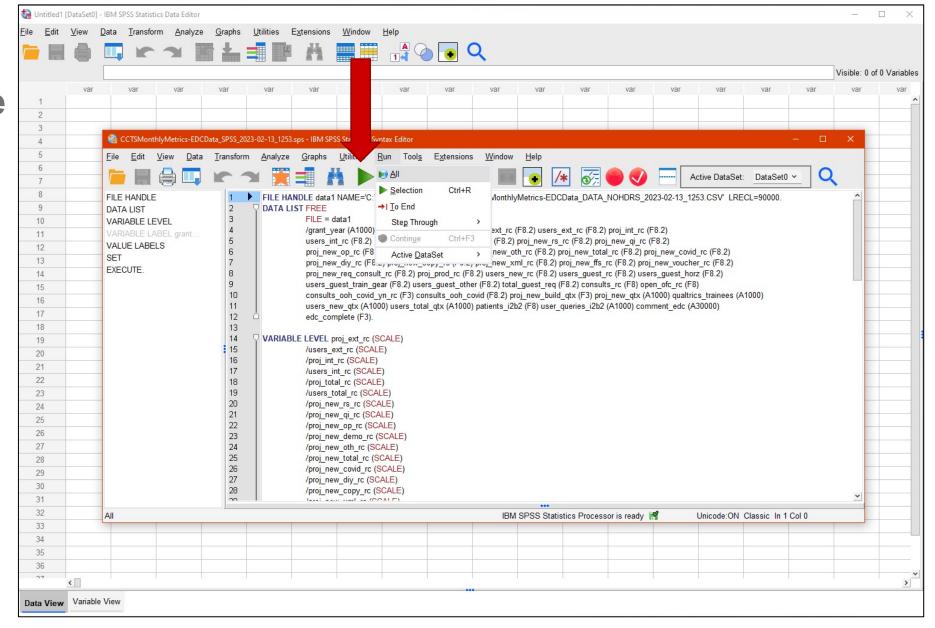


SPSS File

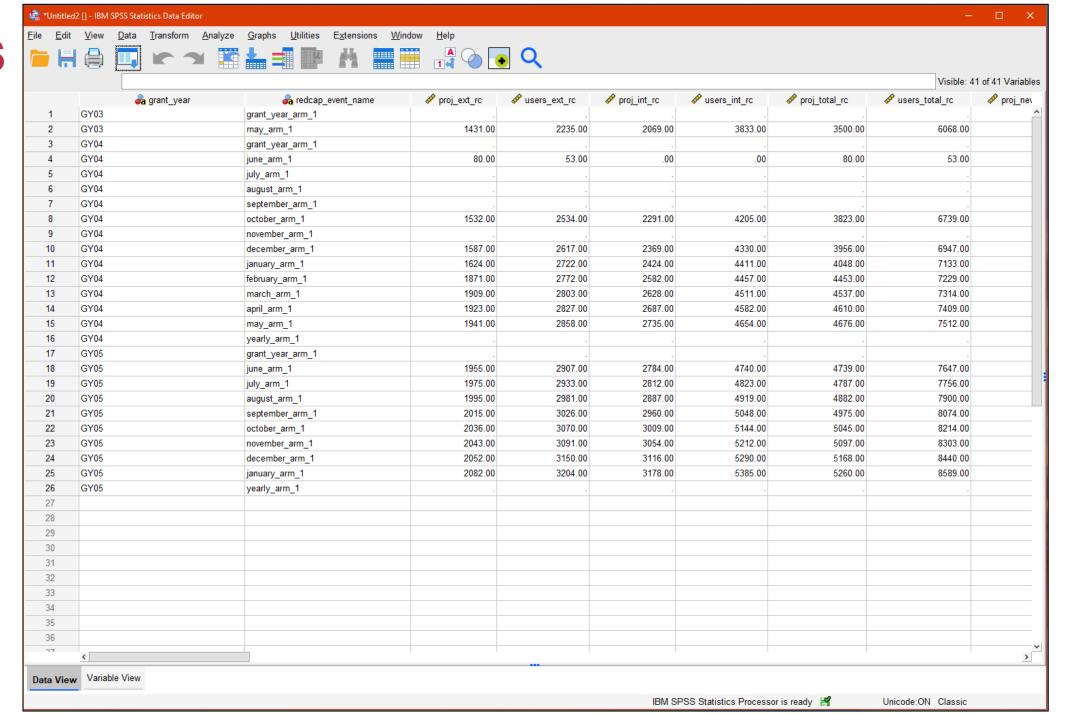




SPSSRun SPSS File







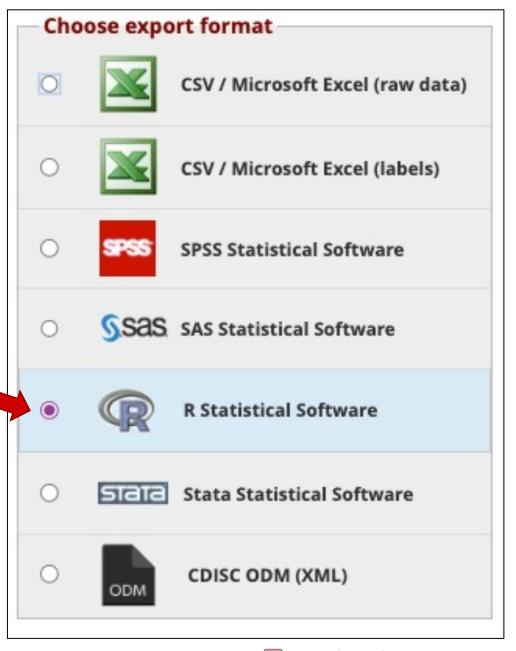
Exporting Data To R



R

Export Options

- Export as CSV file and upload manually
- OR
- Export using R Package
 - Ability to map CSV in R without manual mapping





R

Files

- R file
- Data as CSV

Data export was successful!

The data export was successful, and your data is now ready to be downloaded. Click the download icon(s) below on the right to download your data file. If exporting to a specific statistical analysis package, you will additionally need to download the syntax file that is provided for that stats package. For more details, follow the instructions in the box below.

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R Statistical Software

Instructions: Use command read.csv('filename') to read in data file.





CCTSMonthlyMetrics-EDCData_R_2... R 🖿 🕽 📗 🥛 Source on Save 📗 🔍 🎢 🗸 📗 R File rm(list=ls()) graphics.off() library(Hmisc) data=read.csv('CCTSMonthlyMetrics-EDCData_DATA_2023-02-13_1509.csv') label(data\$grant_year)="Grant Year" label(data\$redcap_event_name)="Event Name" label(data\$proj_ext_rc)="Projects - Multi-Center/External (Gray)" label(data\$users_ext_rc)="Users - Multi-Center/External (Gray)" label(data\$proj_int_rc)="Projects - Internal (Scarlet)" label(data\$users_int_rc)="Users - Internal (Scarlet)" label(data\$proj_total_rc)="Total Projects - REDCAP" label(data\$users_total_rc)="Total Users - REDCAP"

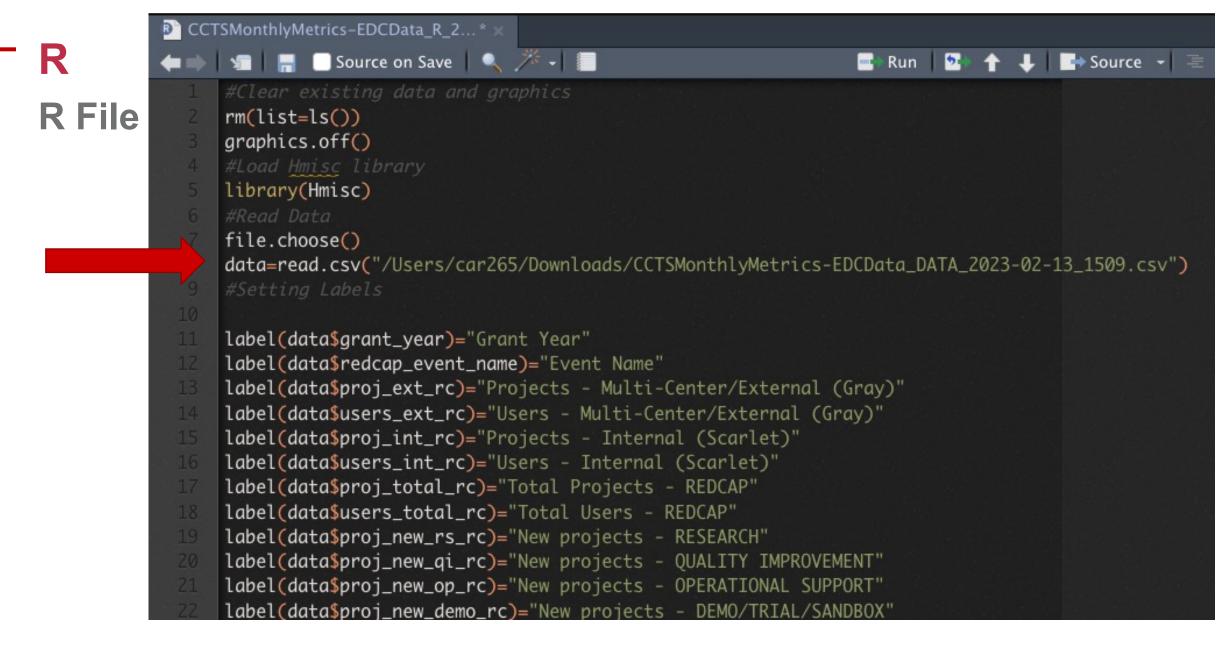
label(data\$proj_new_rs_rc)="New projects - RESEARCH"

label(data\$proj_new_qi_rc)="New projects - QUALITY IMPROVEMENT" label(data\$proj_new_op_rc)="New projects - OPERATIONAL SUPPORT"

label(data\$proj_new_demo_rc)="New projects - DEMO/TRIAL/SANDBOX"



Run





R

Run R File

```
CCTSMonthlyMetrics-EDCData_R_2... * ×
   ▼ Source on Save
                                                                                   Run
                                                                                   Run the current line
                                                                                   or selection (\#+)
   rm(list=ls())
   graphics.off()
   library(Hmisc)
   data=read.csv("/Users/car265/Downloads/CCTSMonthlyMetrics-EDCData_DATA_2023-02-13_1509.csv")
   label(data\arant_year)="Grant Year"
   label(data$redcap_event_name)="Event Name"
   label(data$proj_ext_rc)="Projects - Multi-Center/External (Gray)"
   label(data$users_ext_rc)="Users - Multi-Center/External (Gray)"
   label(data$proj_int_rc)="Projects - Internal (Scarlet)"
   label(data$users_int_rc)="Users - Internal (Scarlet)"
   label(data$proj_total_rc)="Total Projects - REDCAP"
   label(data$users_total_rc)="Total Users - REDCAP"
   label(data$proj_new_rs_rc)="New projects - RESEARCH"
   label(data$proj_new_qi_rc)="New projects - QUALITY IMPROVEMENT"
   label(data$proj_new_op_rc)="New projects - OPERATIONAL SUPPORT"
   label(data$proj_new_demo_rc)="New projects - DEMO/TRIAL/SANDBOX"
   label(data$proj_new_oth_rc)="New projects - OTHER"
   label(data$proj_new_total_rc)="Total NEW PROJECTS"
```



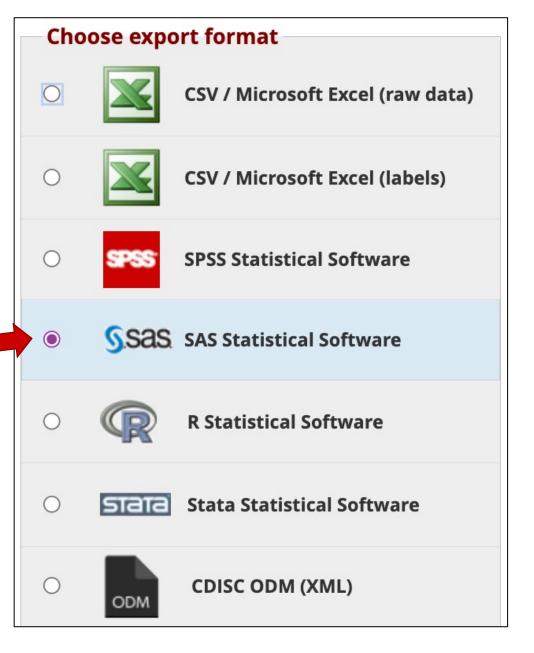
data ×						
4	ta ⇒ √a ▼ Filter					
*	grant_year ‡ Grant Year	redcap_event_name	proj_ext_rc	users_ext_rc	proj_int_rc	users_int_rc Users – Internal (Sca
1	GY03	grant_year_arm_1	NA	NA	NA	NA
2	GY03	may_arm_1	1431	2235	2069	3833
3	GY04	grant_year_arm_1	NA	NA	NA	NA
4	GY04	june_arm_1	80	53	0	0
5	GY04	july_arm_1	NA	NA	NA	NA
6	GY04	august_arm_1	NA	NA	NA	NA
7	GY04	september_arm_1	NA	NA	NA	NA
8	GY04	october_arm_1	1532	2534	2291	4205
9	GY04	november_arm_1	NA	NA	NA	NA
10	GY04	december_arm_1	1587	2617	2369	4330
11	GY04	january_arm_1	1624	2722	2424	4411
12	GY04	february_arm_1	1871	2772	2582	4457
13	GY04	march_arm_1	1909	2803	2628	4511
14	GY04	april_arm_1	1923	2827	2687	4582
15	GY04	may_arm_1	1941	2858	2735	4654
16	GY04	yearly_arm_1	NA	NA	NA	NA

Exporting Data To SAS



Export Options

- Export as CSV file and upload manually
- OR
- Export using SAS Package
 - Ability to map CSV in SAS without manual mapping





SAS Files

- SAS file
- Data as CSV

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Ssas

SAS Statistical Software

Download and save both files on the right to a common location. Double-click the syntax file to open it in SAS. In the syntax editor in SAS, enter the full path of the data CSV file on your computer into the second line of the .sas syntax file. For example, you will need to add something similar to the red text seen below. Your file name and folder path will look different from the example below. Once you have completed these steps, choose Run (or Run-->Submit) from the top menu options in SAS to load the data.

%let csv_file = 'MyProject_DATA_NOHDRS.csv';

The code above should be changed to something like the following:

%let csv_file = '/Users/JoeUser/Documents/MyProject_DATA_NOHDRS.csv';
OR

%let csv_file = 'C:\Users\JoeUser\Desktop\MyProject_DATA_NOHDRS.csv';

Click icon(s) to download:

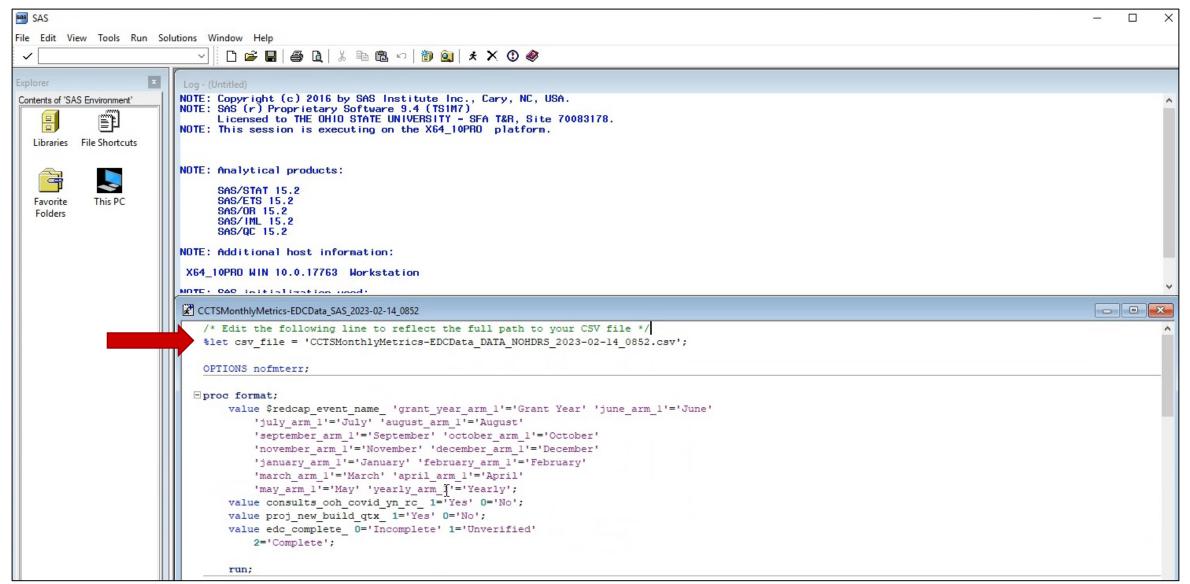




Send file?



SAS File

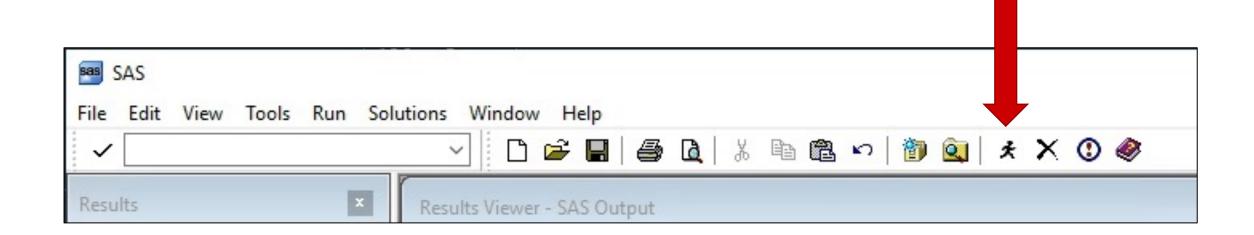


SAS File

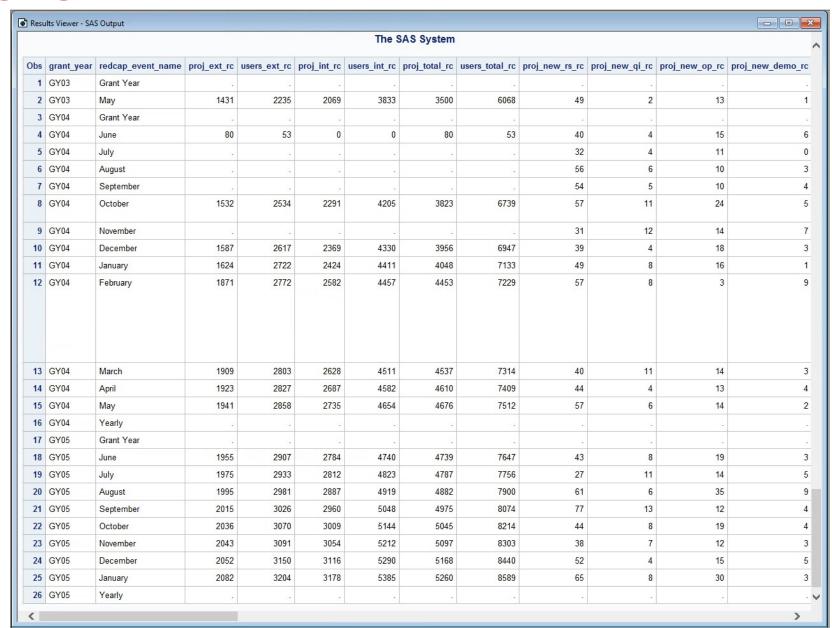
```
★ CCTSMonthlyMe
                -EDCData_SAS_2023-02-14_0852 *
                                                                                                                                                  0 0
   /* Edit the vollowing line to reflect the full path to your CSV file */
   $let csv file = 'C:\Users\hale75\OneDrive - The Ohio State University Wexner Medical Center\CCTSMonthlyMetrics-EDCData DATA NOHDRS 2023-02-14 0852.csv';
   OPTIONS nofmterr:
  proc format;
       value $redcap event name 'grant year arm 1'='Grant Year' 'june arm 1'='June'
           'july arm l'='July' 'august arm l'='August'
           'september arm l'='September' 'october arm l'='October'
           'november arm l'='November' 'december arm l'='December'
           'january arm l'='January' 'february arm l'='February'
           'march arm l'='March' 'april arm l'='April'
           'may arm l'='May' 'yearly arm l'='Yearly';
       value consults ooh covid yn rc 1='Yes' 0='No';
       value proj new build qtx 1='Yes' 0='No';
       value edc complete 0='Incomplete' 1='Unverified'
           2='Complete';
```



Run File









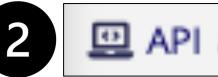
Exporting Data To Tableau



API

- 1. API access controlled by User Rights
- 2. API option appears under Applications Menu (left side)
- 3. Request to create token
- 4. Token created











Your API token for project "CCTS Monthly Metrics"

The API token below is ONLY for you and will work ONLY with this project. This token allows special access to REDCap data and should NOT be shared with others. If you think your token has been compromised, then please contact your REDCap administrator immediately AND either delete or regenerate your token by using the buttons below.

API Token:

reasons

CB7E414299111162BB1635322E1A8D73

Finished using the API for this project? If so, please delete your token for security reasons. Delete token Think someone else knows your token? If so, please regenerate your token for security

The following user(s) have API tokens for this project: carroll.773

"Other Export Options"

Tableau 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. Click the button to the right and follow the instructions to export your data into Tableau.

1 NOTICE: It is required to have an API token generated for the project in order to use this feature.

Why Tableau?

Tableau is a powerful and fastest growing data visualization tool used in the Business Intelligence Industry. It helps in simplifying raw data in a very easily understandable format. Tableau helps create the data that can be understood by professionals at any level in an organization.

Tableau is a visual analytics engine that makes it easier to create interactive visual analytics in the form of dashboards. These dashboards make it easier for non-technical analysts and end users to convert data into understandable, interactive graphics. View export instructions



Instructions

Tableau Connector Instructions

A REDCap user with an API token can have data from their REDCap project downloaded to their Tableau Desktop instance (v10.0+). Please follow the below steps to download data via the Tableau Web Data Connector.

Instructions

- 1. In Tableau 10.0+, go to Connect -> To a Server -> More and find "Web Data Connector"
- 2. Copy the URL below as the "web data connector URL" in the dialog, and press Enter:

- 3. In Tableau, enter your project API token into the text box and select/enter other options, as desired. Options available for customizing the extract are:
 - Raw data or labels
 - Include Data Access Group yes/no
 - Subset of fields: specify a comma or space-separated list export field names
 - Subset of records: specify a REDCap filter logic expression
- 4. Click "Submit", and your project data will be downloaded into Tableau.

(The web data connector will be executed and create a Tableau Data Source in your Tableau workbook.)

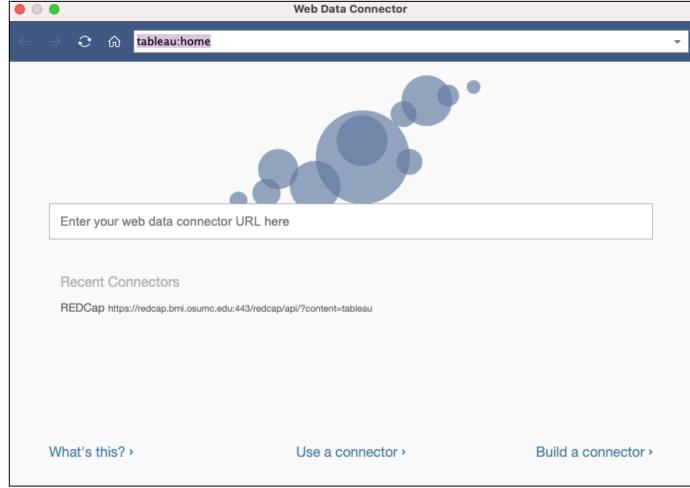
5. Click "Update Now" to extract your project data into the Data Source.



TableauInstructions Step 1

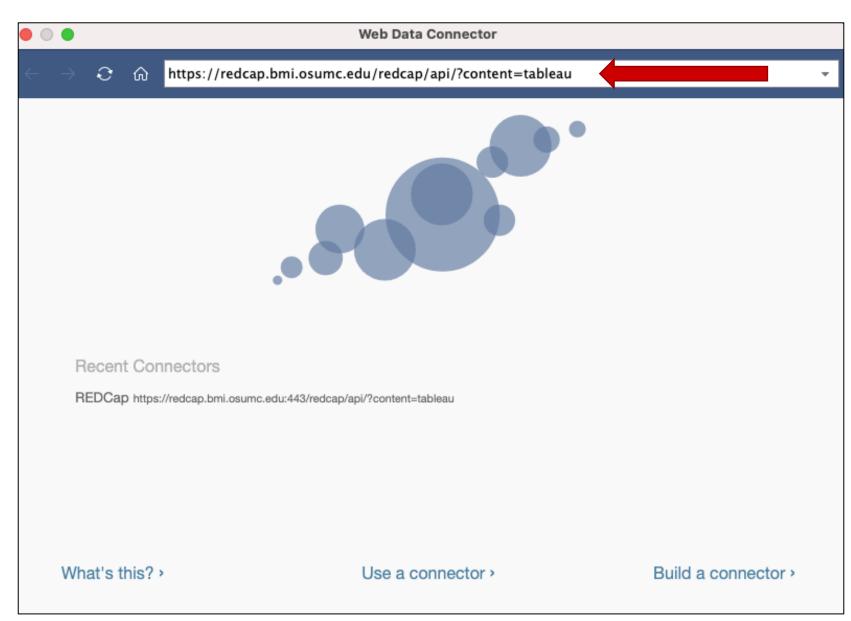


Web Data Connector



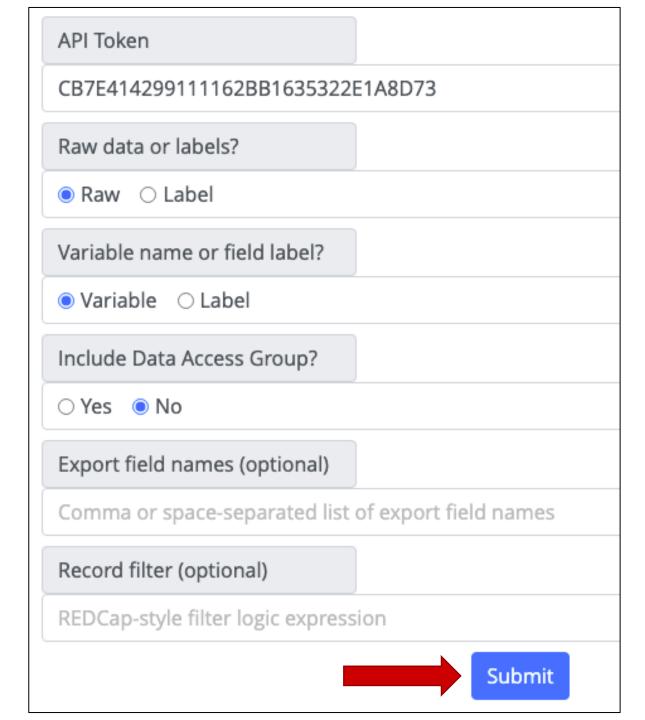


Instructions Step 2

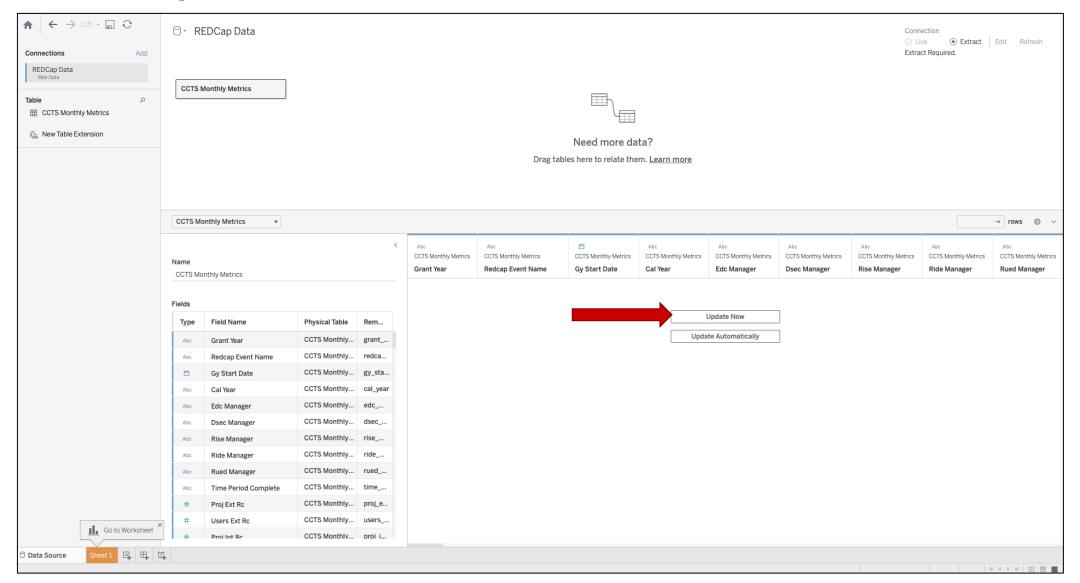


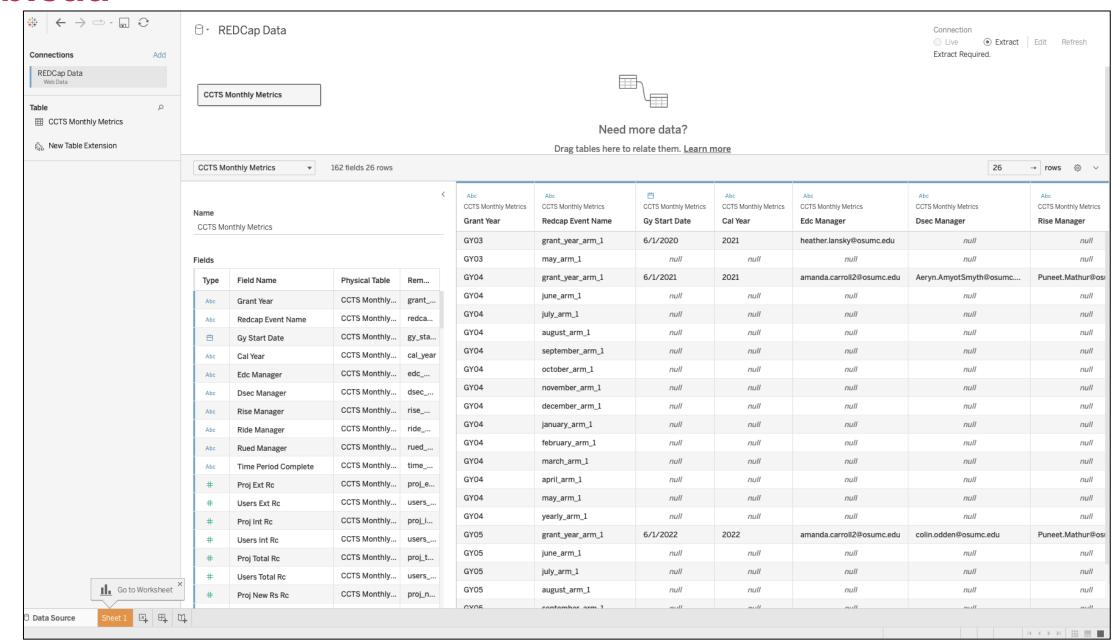
Instructions Step 3 & 4

- Enter project API token into the text box
- Options available for customizing the extract are:
 - Raw data or labels
 - Include Data Access Group yes/no
 - Subset of fields: specify a comma or space-separated list export field names
 - Subset of records: specify a REDCap filter logic expression



Instructions Step 5





Announcements

https://u.osu.edu/redcap/redcap-training-schedule/

- Grand Rounds Topics Request
 - https://go.osu.edu/grandrounds_topics
- Next REDCap Grand Rounds: Topic will be announced Friday!
 - Tuesday, March 14 @ 11am
 - Registration will open soon on website

- Next REDCap Training: Design 1
 - Wednesday, February 22 @ 12pm
 - Registration open on website



Questions?

CCTS-Informatics@osumc.edu



