REDCAP INTRODUCTION CLASS
June 7, 2016

REDCap
Research Electronic Data Capture

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LEARNING OBJECTIVES

- What is REDCap?

- How do I get started in REDCap?

- Basic design

- User rights

- Data collection

- Exporting data

Agenda

Overview	Getting access	Design	Testing	Data collection	Export
What is REDCap?	*Project Navigation*	*How to design your variables…*	*Testing your forms, user rights*	*Creating records*	*Exporting Data*

ITHS' Focus

- Speeding science to clinical practice for the benefit of patients and communities

- Promotes translation of scientific discovery by:
  - ❑ Fostering innovative research
  - ❑ Cultivating multi-disciplinary partnerships
  - ❑ Training the next generation of researchers

- More information: www.iths.org

Laboratory → **Clinic** → **Community**

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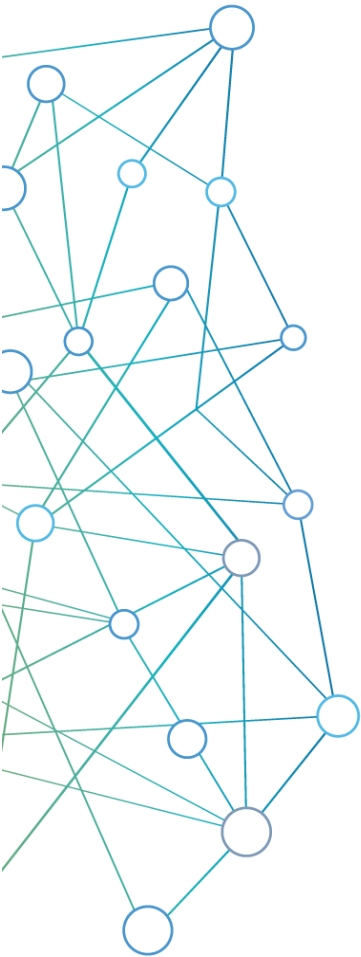Accelerating Research. Improving Health.

What is REDCap?

1,700-plus installations worldwide

► Electronic Data Capture (EDC)

► Web based

► Built for research

► HIPAA compliant

► User-friendly

► ITHS REDCap

  ► Free to use

  ► Highly secure

  ► Backed up daily

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Accessing REDCap

University of Washington net ID's

Use your UW net ID to login at:
https://redcap.iths.org
to create an account

Other University ID's

Select universities can log in with their ID's on our REDCap installation

Partner Institutions

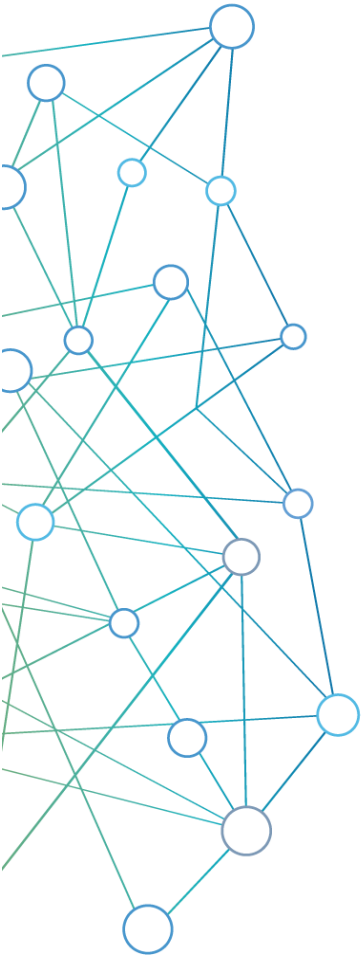*Fred Hutch, SCCA, Seattle Children's, PATH, and regional institutions can request ID's*

Others

Can use ITHS REDCap for free as long as they are affiliated with one of our partner institutions
ITHS new outside user request form

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Security

Web service setup

- *Managed by the UW*
- *Encrypted on secure servers (256 bit)*
- *UW HIPAA compliant*

Three tiered access

- *System login*
- *Project access*
- *User restrictions*

Audit trails

- *Logging feature*

De-identified data export

- *Identify variables as Personal Health Information (PHI)*
- *Export module with de-identifying option*

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Overall Navigation

Home

My Projects

Request New Project

Training Resources

Help & FAQ

My Profile

Project Request / Approvals
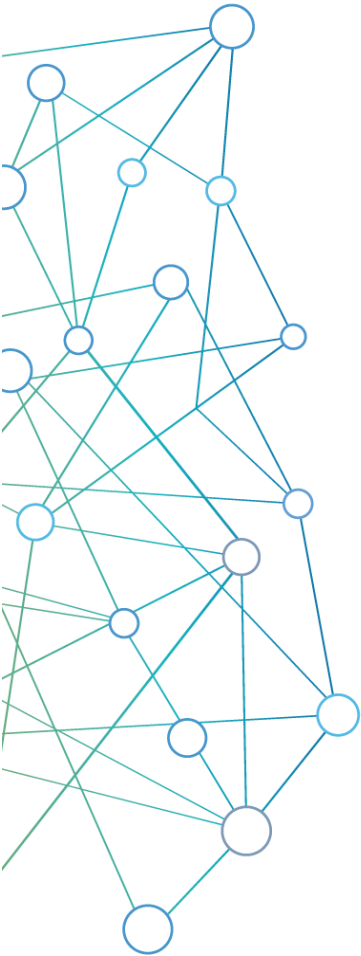
Project requests

Done within one business day

Needed information

- *Project title*
- *Purpose*
  - *Research*
    - *Principal investigator*
    - *IRB*
    - *Type of research*
- *Project folder*
- *Project notes*

Template, blank slates & XML files

- *Use a template to get started quickly*
- *Use the blank slate option to start from scratch*
- *Use a REDCap XML file to load an entire project*

Project-Level Navigation

Navigation

Data collection

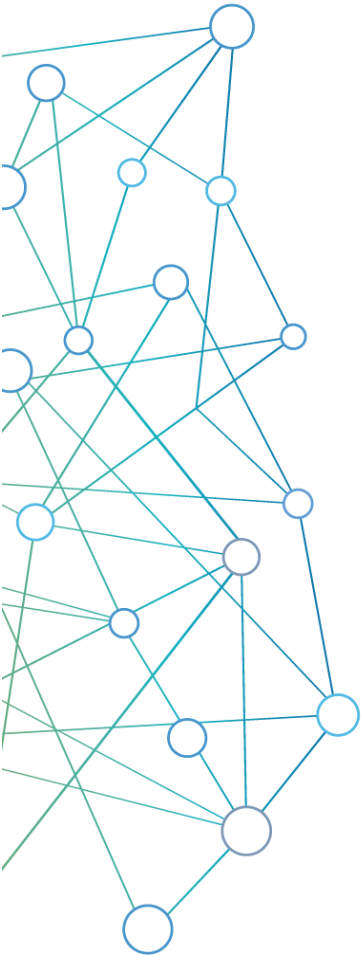Applications

Help & Information

Project Home

Project Setup

Other Functionality

Instrument Design

Online designer

- *Wizard type instrument design*
- *Very forgiving*
- *Great way to learn*

REDCap shared library

- *Quickest way to load an instrument*
- *Curated by Vanderbilt University*

Zip files

- *Import individual instruments from other projects*
- *Great for sharing commonly used instruments*

Data dictionary

- *Advanced feature that defines an entire project*
- *Excel file that you customize outside of REDCap*

Online Designer General
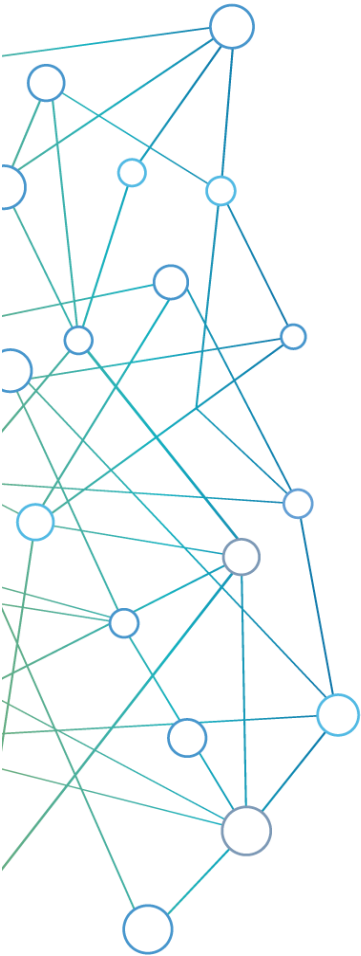
Instruments

- *Create, Import, Upload*
- *Rename, Copy, Delete, Download instrument ZIP*
- *No limit on the number of forms in a project*

Variables

- *Each instrument has to have at least one variable*
- *Variables can be deleted, edited, and moved within a project*

Variable limits

- *No real "technical" limit*
- *Best practices: No more than 1000 variables per form*

Surveys versus Instruments

- *Each instrument can be turned into a survey*
- *Any survey can still be filled out as a form*

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Variable Creation
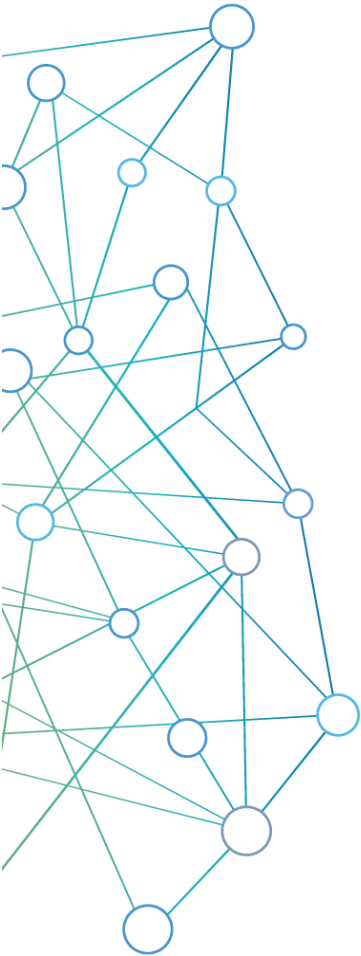
Necessary attributes

- *Field type*
- *Field label*
- *Variable name*

Optional attributes

Required, Identifier, Custom Alignment, Field note, Field Annotation, Action tags

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Conditional attributes

Validation, Minimum, Maximum, Ontology lookup, Choices

Matrix fields

Collection of variables

Field Types General

Unstructured field types

- *Free text*
- *Comment boxes*
- *Dates, numbers, etcetera*

Structured field types

- *Limited set of answers*
- *Pre-defined*

Special & calculation field types

- *Uploading files*
- *Doing calculations with entered data*

Display field types

- *Plain text, HTML, video, audio, pictures, files*

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Unstructured Field Types

Unstructured

Structured

Special

Calculations

Display

Matrix

Text box

► Free text

► Validation

   ► Dates, numbers, emails, phone numbers etcetera

   ► Minimum & maximum

► Bio-medical ontologies (Look-up tables)

   ► Over 400 different ontologies available

   ► e.g. ICD-9, ICD-10, Medications

Notes box

► Great for bigger pieces of text

   ► Clinical notes

   ► Comments on surveys

   ► Descriptions

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Structured Field Types

Unstructured
Structured
Special
Calculations
Display
Matrix

Single answer

► Drop down

► Radio button

► Slider

  ► 0 to 100 scale

► Pre-baked choices:

  ► Yes/No

  ► True/False

Multiple answer

► Checkboxes

  ► Stored differently as single answer

  ► Has different branching logic syntax

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Special Field Types

Unstructured

Structured

Special

Calculations

Display

Matrix

Signature

► Allows people to "sign"

► Captures a small jpeg file

► Preferable to the "check if agree" method

► Works on both computers and touch enabled devices

File upload

► Any file type is allowed

► REDCap just stores the file

► 100 Mb limit per upload

► Useful for:

   ► Photos

   ► Consent documents

   ► Scanned documentation

Calculation Field Type

Unstructured

Structured

Special

Calculations

Display

Matrix
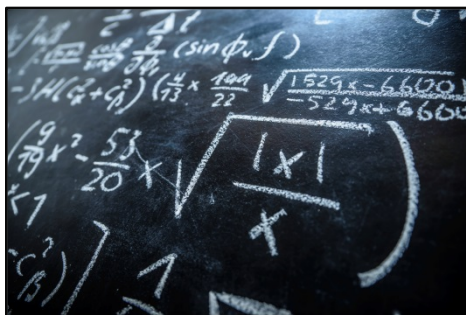
Calculations

► Always have to have a number as an end result

► Limited to variables in that particular record

► Same syntax as branching logic

► Special functions are allowed

 ► Datediff()

 ► Sum()

 ► Mean()

 ► Full list (FAQ special functions)

► Used for:

 ► Scoring tools

 ► Simple calculations (like BMI)

► Test out calculations in a test record

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Display Field Types

Unstructured

Structured

Special

Calculations

Display

Matrix

Descriptive field

► Text

    ► HTML is allowed

► Video

    ► Hosted outside of REDCap (YouTube, Vimeo)

    ► Inline or Inside popup

► Audio

► Picture

► Files

    ► 100 Mb limit

Section header

► Used to separate blocks of variables

► Can be used in surveys to create separate pages

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Matrix Field Types

Unstructured

Structured

Special

Calculations

Display
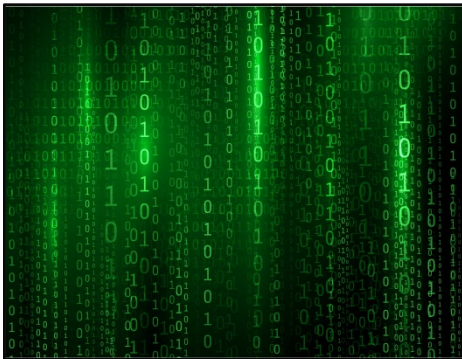
Matrix
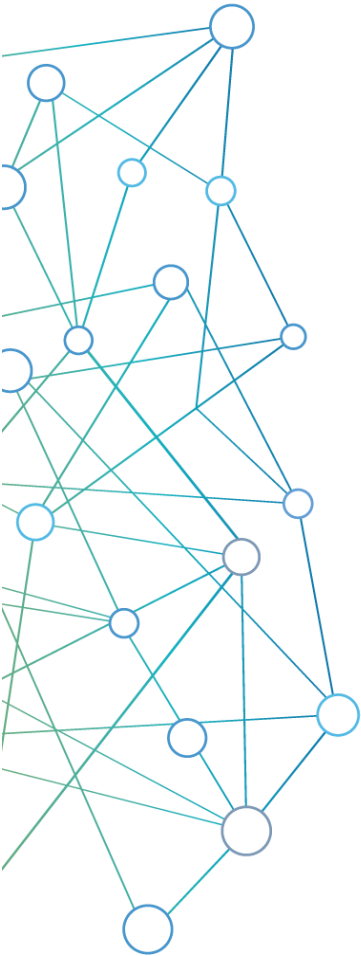

Matrix

► Groups a set a variables together

   ► Radio buttons

      ► Ranking

   ► Checkboxes

► Columns are the options

   ► All the options for all the variables have to match

► Rows are the questions/variables

► Branching logic is allowed on individual questions

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Branching Logic

Drag and Drop Method

The art of hiding fields

Set up a logic statement to be either true or false based on entered variables
A true outcome shows a field, a false one hides the field

Project limited

References values in other forms or events, but not other projects

Drag and drop method
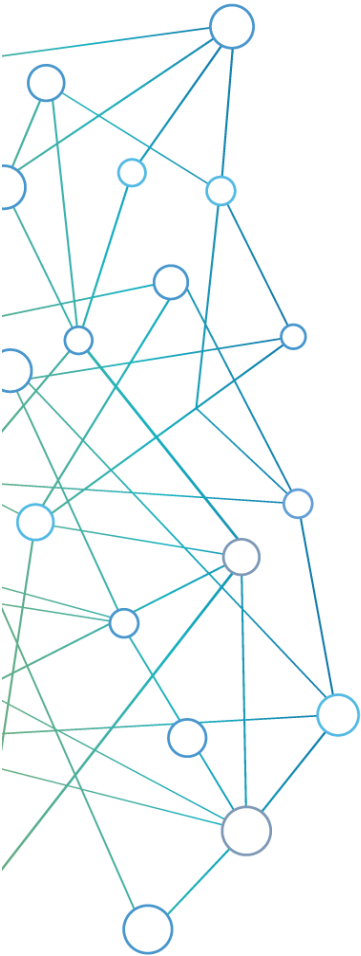
Allows you to craft logic without knowing the syntax or having any kind of programming experience

Syntax method

Allows for much more complex logic, but is difficult to set up correctly

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Basic User Rights

Adding users to your project

Anybody, that has a user account on the ITHS REDCap server can be added to your project as a user with a custom set of rights

Form rights

Hide forms completely, View-only mode or full access

Application rights

Give users only access to application they actually need

User roles

Useful for when you need to add a lot of users with the same rights quickly

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Approval process

Most of the time, you will not have contact with the REDCap administrator.

However there are some specific situations where there are some safety measures that require administrator involvement.
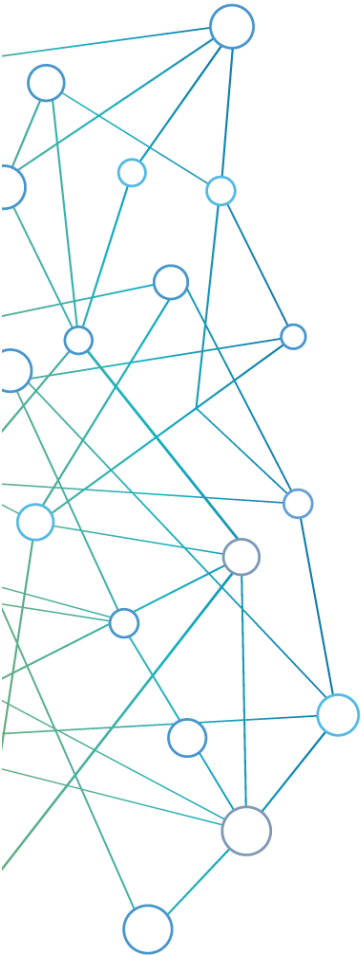
Project creation / Copy project	*Approved quickly and almost always* *Done to keep REDCap running smooth*
Change approval	*Approved within one business day* *Done to prevent inadvertent data loss* *You have final say*

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Basic Data Entry

Add / Edit Records

Located in the data collection menu. Entering a new record ID will create a new record. Entering an existing record ID will allow you to edit the record.

Data Search

Allows the user to search based on one of the capture variables, provided that they are unique enough to identify records.

Unique record ID's

Each REDCap record will have a unique ID. The ID is always stored in the very first variable of your very first instrument.

Deleting test records

Done by moving to production, erasing all data, or deleting individual records

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Record Status Dashboard

Study ID	Baseline Baseline (Arm 1: Intervention Drug A)	Field Type Demo Baseline (Arm 1: Intervention Drug A)	Follow up Month 1 (Arm 1: Intervention Drug A)	Medications Month 1 (Arm 1: Intervention Drug A)	Follow up Month 2 (Arm 1: Intervention Drug A)	Medications Month 2 (Arm 1: Intervention Drug A)	Follow up Month 3 (Arm 1: Intervention Drug A)
1 Obama, Barry	✔ (green)	● (red)	● (red)	● (yellow)	✔ (green)	● (green)	● (yellow)
2 Putin, Vladimir	● (yellow)	● (red)	○	○	○	○	● (red)
3 Merkel, Angela	● (green)	● (green)	● (green)	○	○	○	● (green)
4 Lagarde, Christine	● (yellow)	● (green)	● (green)	○	○	○	○
10 Rubio, Marco	● (red)	● (green)	○	○	○	○	○
12 Biden, Joe	● (red)	● (red)	○	○	○	○	○
14 Trump, Donald	● (green)	○	○	○	○	○	○
	○	● (green)	○	○	○	○	○
	○	○	○	○	○	○	○

Legend for status icons:
- ● Incomplete (red)
- ○ Incomplete (no data saved) [?]
- ● Unverified (yellow)
- ✔ Partial Survey Response (orange)
- ● Complete (green)
- ✔ Completed Survey Response (green)

Basic Data Export

You can export your entire data set in a few seconds in a couple of different formats.

You can also create and save custom reports that create subsets of your data. These subsets are exportable in the same way as the entire data set.

Choose export format

- CSV / Microsoft Excel (raw data)
- CSV / Microsoft Excel (labels)
- SPSS Statistical Software
- SAS Statistical Software
- R Statistical Software
- Stata Statistical Software

Advanced Classes
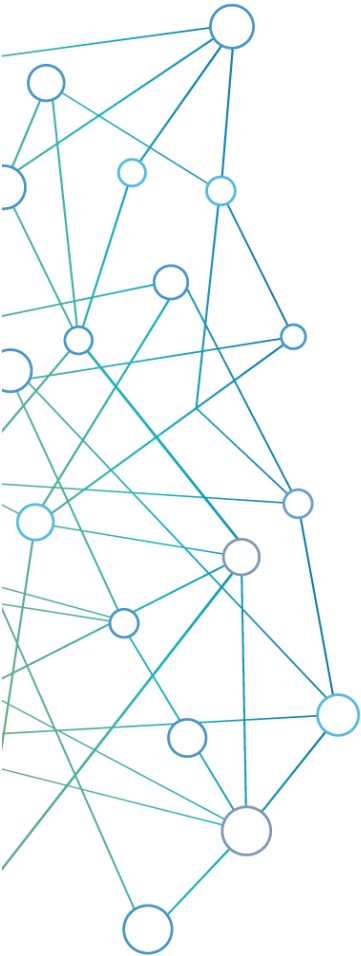
Data Dictionary

Learn how to use the data dictionary, advanced branching logic syntax and how to import and export large data sets.

Longitudinal Studies & Surveys

Learn how to properly set up longitudinal studies and how to best utilize survey functionality within REDCap.
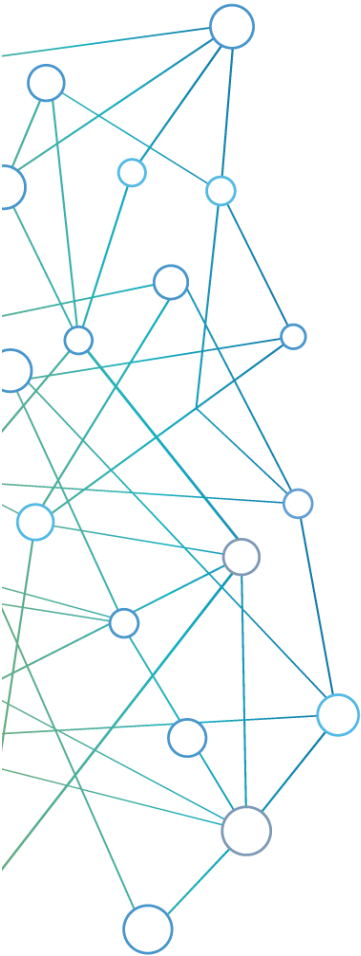
Best Practices

Learn about the advanced capabilities of REDCap and gain some best practices insight.

REDCap Class Schedule

For dates and sign up information click on the header.

Resources

Talking point

- **REDCap Class Schedule**

Talking point

- **REDCap Training Resources**
- **Help & FAQ**
- **ITHS Specific FAQ**
- **Tip of the Month Archive**

Talking point

EMAIL: iths_redcap@uw.edu
(REDCap community email list)
EMAIL: iths_redcap_admin@uw.edu
(REDCap administrators; last resort for help)

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Thank You

Questions?