Steps to Build a REDCap Project

1 IDENTIFY YOUR REDCAP TEAM

a. Who will be responsible for **building and maintaining** the REDCap project? (Tip: It's always a good idea to have more than 1 "REDCap lead" so you have a **backup** if someone is busy or sick).

b. Has everyone used REDCap before? If not, review the REDCap training videos "Just Getting Started" section before you begin.

2 DRAFT YOUR DATA COLLECTION MATERIALS IN MICROSOFT WORD (OR COMPARABLE SOFTWARE)

a. **Draft questions with community partners** to ensure questions are acceptable, understandable, and relevant.

b. Include **variable names**, **numeric values** associated with each answer choice, and notes on **branching logic** in your documents — this will make your REDCap programming more efficient.

c. **Consider functions beyond data collection** for your REDCap project — for example, administrative tracking forms — and draft those as well.

3 SUBMIT FOR IRB APPROVAL OF YOUR DATA COLLECTION MATERIALS

a. You can begin to build your project before receiving IRB approval, but you may need to make edits based on IRB feedback.

4 REQUEST A REDCAP PROJECT

a. Note that **different institutions have their own systems** for requesting new projects and paying for REDCap administrator support.

b. If you would like your data collectors to have a chance to practice data entry before starting real data collection, **consider requesting a training project** first.

i. Making a training project keeps "fake" data separate from real participant data. This method is highly recommended if you will be asking data collectors to practice data entry skills prior to beginning real data collection.

ii. Give this project the same name as your final project, with "Training" at the front.

iii. You can duplicate this project later and make the duplicate your "real" project.

CIRCLE is funded by the National Institute on Drug Abuse of the National Institutes of Health under award number P50DA058619. The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

5 BEGIN BASIC PROJECT SETUP

a. **Review the Project Setup page**. Despite the linear design of this page, project setup is often an **iterative** process. Which functions you use will depend on the needs of your study and team.

b. Review and edit the main project settings, as needed.

c. Set up **user roles** and **data access groups**, then begin adding users.
 i. Be mindful of which rights each user role has enabled. In general, the ability to rename or delete records and to lock/unlock records should be restricted to data managers. You may also want to show or hide specific forms for certain users.
 ii. While you are building your project, only users directly involved in programming or piloting should be added.

d. Enable optional modules and customizations (for example, surveys, randomization, etc.)

6 CREATE YOUR INSTRUMENTS

a. If your project will be large, consider breaking down the development process into sections. For example, you might assign specific people to program certain instruments.

b. **Add fields (questions) to your instruments**, using your IRB documents as a guide.
 i. The **Designer** interface is recommended for initial programming.
 ii. The **Data Dictionary** interface can be useful when making changes to many fields at once — for example, if you need to move a group of fields to a different instrument, or change the names of many variables.

c. There are many useful tools available in REDCap to make your instruments clear and efficient, including but not limited to branching logic, field validation, calculated fields, embedded fields, piping, action tags, smart variables, and more. To learn more about these tools, click on the "Learn How to Use" buttons on the right side of the screen in the Developer interface, or try an internet search to find training videos and other resources.

7 ORGANIZE YOUR INSTRUMENTS

a. For **longitudinal projects**, create **events** for each data collection timepoint and assign each instrument to the appropriate event.

b. For projects in which you will need to collect the exact same data multiple times, consider enabling and creating **repeating instruments**.

8 PILOT TEST YOUR PROJECT

a. Compare REDCap against your IRB-approved documents to **check for discrepancies**.

b. Enter fake data with varying answers to find **typos** and **awkward phrasing**, assess question **flow** and **transitions**, test **branching logic**, and determine **how long** the survey takes to complete. Involve community members in piloting to ensure the final survey is understandable and accessible.

c. If using the **REDCap Mobile App** for data collection, be sure to pilot in the app, not just in REDCap online.

9 SET UP ADMINISTRATIVE SYSTEMS

a. **Reports** allow you to view, sort, filter, and export tables of select datapoints.

b. **Dashboards** provide snapshots of instrument completion statuses.

c. **Email alerts** provide immediate notification of form changes based on set logic.

d. The **data quality module** allows you to set up rules and automatically check for outliers, unlikely values, missing data, etc.

10 MOVE YOUR PROJECT FROM DEVELOPMENT TO PRODUCTION STATUS

a. Before requesting this move, be sure to:
   i. Complete all piloting and editing
   ii. Mark all **identifier fields**
   iii. Inform all users that no further edits or testing may take place

b. If you have fake data in your project from pilot testing, be sure to choose the option to DELETE all data.

c. If you have created a training project, you may now **duplicate** it to create a project for your real participant data. Use the training project for data collector practice, and do not grant users access to the real project until they have demonstrated that they are able to collect data successfully.

d. Reminder: Most edits to REDCap projects in Production status will require **institution-level administrator approval** before going into effect.

ADDITIONAL LEARNING RESOURCES

- *REDCap Frequently Asked Questions: https://projectredcap.org/about/faq/*
- *REDCap Mobile App User Guide: https://kb.wisc.edu/smph/informatics/page.php?id=120725*