How to Use REDCap

Tools to assist with research data capture and storage

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Objectives

1. Present an overview of REDCap:
   - What it does
   - Where it is
   - How to get started.

2. Set up of a REDCap database

3. Present three example studies where REDCap is in active use.
Basics of ITHS REDCap

- REDCap (Research Electronic Data Capture) is a simple, fully web based EDC system
- Originally developed at Vanderbilt University specifically for clinical research studies
- Easy to get started designing your project(s), extensive online training resources
- I support the ITHS REDCap install used by about 50 projects and 300 users
Project title:
Joshua Fun Project
Title to be displayed on project webpage

Purpose of this project:
(How will it be used?)
Practice / Just for fun

Design your project:

STEP 1: Choose the type of project you want to build
- Single Survey
- Data Entry Forms (e.g., traditional database)
- Single Survey + Data Entry Forms (e.g., pre-screening survey with follow-up data capture)

STEP 2: Choose collection format for data entry forms
- Classic (each form available for use once for each subject/record)
- Longitudinal / repeating forms (each form available for use one or more times for each subject/record)

Enable the scheduling module? Tell me more

Send Request  Cancel
Basic project tasks: choose a patient record (above) and (below) for each form/event according to protocol
More REDCap basics

Step 1: Create a project

Step 2: Develop your study protocol in REDCap (data entry forms and visits/events)

Step 3: Go into “production” mode and enter your study data

Step 4: Export data, publish, and archive/delete project

Note: REDCap has a variety of project types, but for simplicity I am primarily covering Data Entry forms with multiple timepoints
What about compliance?

- Shared responsibility of HIPAA compliant ITHS does REDCap system; you do your study
- Prefer studies with minimal collection of Protected Health Information (PHI);
  - PHI data fields are flagged and can be removed or in some cases de-identified on export (hash study ID, shift dates, etc);
  - data exports and API can be restricted to key staff such as PI and biostatistician
- REDCap has a full audit log, who/what/when
How to Get Started

https://www.iths.org/BMI/redcap

or

https://redcap.iths.org

You just need a UWNetID
(or free ProtectNetworkID)
Three Example Studies Using REDCap

1. SHORE Cohort Study:
   Shoulder Outcomes Research

2. BOLD Registry:
   Back pain Outcomes using Longitudinal Data

3. LESS RCT:
   Lumbar Epidural steroid injections for Spinal Stenosis
Project 1: SHORE Cohort Study

Project Overview – Prospective cohort
• Setting: Scheduled to receive shoulder replacement surgery
  – Single site and one research coordinator
• Sample: 194 of 525 person target enrollment

Data Capture:
• Pre-op, 3, 6, 12, and 24-mo outcomes
• Phone, mail, web survey (Catalyst, REDCap)
• Single REDCap database
Project 2: BOLD Study

Project Overview – Cohort Design using BOLD Registry

• Setting: 3 large HMO recruitment sites (UW DCC)
  – Boston, Detroit, San Francisco
  – 20+ research coordinators

• Sample: 1,600 of 5,000 person target enrollment
  – 65 years and older, first visit for low back pain
  – ICD-9 based inclusion and exclusion criteria

Data Capture:

• Baseline, 3, 6, and 12-mo pain/function outcomes
• Phone (CATI), mail
• Two REDCap databases, augmented with web page
Project 3: LESS RCT

Project Overview – Blind (D) Randomized Controlled Trial
- Setting: 6 clinical recruitment sites (UW DCC)
  - 12+ research coordinators
- Sample: 75 of 400 person target enrollment
  - Age 50+, spinal stenosis, pain > 5 /10, ESI scheduled
  - Eligible after *many* screening & imaging criteria
- Intervention: steroid + local anesthetic vs. local anesthetic

Data Capture:
- Pain, functional outcomes through 12 months
- In-person, phone (CATI), mail
- Four REDCap databases, augmented with web page
Projects 2 and 3 – Augmented REDCap

- Screening / Patient Identification
- Crosswalk database linking patient ID to study participant ID
- Single Log-in BOLD Project Web Portal
- Application Programming Interface (API)
- Screening, Randomization
- REDCap Research study data
- Automated Follow-Up Reminders and Reporting
- Adverse Events
- Follow Up and Data Collection

Study Recruitment Site

UW DCC
Study Management Using REDCap

**Project 1 – SHORE Study**
- Direct access / entry to REDCap (https://redcap.iths.org/)
- REDCap scheduling modules enabled
- Monthly recruitment / follow-up reports to PI (via R script)

**Projects 2 and 3 – Augmented REDCap**
- Access / entry to REDCap through study web portal:
  - https://backpainproject.org/
- Patient screening performed on web page, not REDCap
- REDCap scheduling disabled – manage with web page
- Data access groups are key for multi-site study
- Nightly R reports for recruitment, follow-up, missing data
# GET SECRET TOKEN FOR REDCAP PROJECT FROM JOSHUA
secret_token = 'DC7B3329A7CA1E631D3884xxxxxxxxxx'

# Command: READ ALL Study Data into ‘x’:
x = postForm('https://redcap.iths.org/redcap/api/',
  token = secret_token,
  content='record',
  format='csv',
  type='flat')

# Now you have a Excel/CSV file to analyze:
write.table(x, file = "delete_file.csv", sep=";")
screeningdb = read.csv("delete_file.csv")
Thanks!

Questions?