

## Introduction to REDCap

**Research Electronic Data Capture (REDCap)** is an Electronic Data Capture (EDC) Software was developed by Vanderbilt University in 2004 to collect and store data and still actively developed.

### REDCap Provides:

- 1) a secure web platform for building and managing online databases and surveys
- 2) an intuitive interface for data entry (with or without data validation – your choice)
- 3) audit trails for tracking data manipulation and export procedures
- 4) automated export procedures for seamless data downloads to common statistical packages such as SPSS, SAS, Stata, R, and Excel
- 5) procedures for importing data from external sources
- 6) built-in project calendar, a scheduling module, ad hoc reporting tools, and advanced features, such as branching logic, file uploading, and calculated fields

## Advantages of REDCap

### Availability

- It's freely available to all HNLHD staff

### Security

- Users access REDCap through a secure login page
- All traffic between the web browser and the application is encrypted
- Collected data is stored behind a secure demilitarized zone (DMZ) network to protect internal local-area network (LAN) from untrusted traffic and collected data
- Provided sophisticated user rights management give you control over what users can do in your project
- Audit trails provide accountability
- REDCap Messenger allows messages to be sent securely to other users and team members without having to use the email systems

### Ease of Use

- No prior database knowledge is required
- Built-in training resources (how-to-videos) allow you to learn at your own pace

### Speed of Implementation

- Intuitive user interface allows you to build simple studies in few minutes
- REDCap Shared Library provides hundreds of project templates which allows you to import complete projects in an instant. All provided instruments are approved for inclusion by the REDCap Library Oversight Committee (REDLOC) after review for research relevance, accuracy in function and coding, and copyright issues.

### Autonomous utilization

- Research groups have complete autonomy and control to add new users and assigned user roles to individuals and groups

### Collaboration

- Projects can be used by researchers from multiple sites and institutions
- Project design and data entry can take place from anywhere in the world
- Supports collaborative studies through Data Access Groups (DAGs) where users at each site should only be able to view data from their site but not any other sites

## Reliability

- At the time of writing, REDCap is used by 5,343 institutions worldwide in 142 countries
- There were over 1,900,000 REDCap users around the world at the time of the writing who developed over 1,300,000 projects and produced 15,000 articles
- The software was developed by a team at Vanderbilt University REDCap and is locally supported by HNELHD staff who have access to an active user support community
- REDCap is installed on a secure demilitarized zone (DMZ) network and is backed up daily

## Features

- REDCap supports a broad range of project types from simple surveys through complex longitudinal clinical trials.
- New functionality is added frequently

## Enhanced Data Quality

- REDCap supports basic data quality features such as:
  - Structured data dictionary
  - Skip logic
  - Mandatory fields
  - Range checking
  - Form locking/unlocking
  - Missing value indicators
- The data quality module provides customized data quality checks
- Data resolution workflow allows for data queries to be raised and resolved.

## Enhanced Output

- Simple reports and graphs can be generated directly in REDCap
- Reports can be viewed online, exported, or shown as stats and charts
- Reports can be created using drag-n-drop and re-ordering of report variable fields
- Data can be exported in a choice of formats to work with popular statistical packages such as SPSS, Stata, SAS and R. (You can also export data and work with it in Excel)
- Secure data can be exported de-identified with "Remove all tagged identifier fields"

## Advanced Functionality

- In addition to its standard support for data collection REDCap also includes support for:
  - Survey scheduling
  - Data quality workflows
  - Participant randomization
  - Text and voice messaging
  - Online consenting