What is REDCap?

Research Electronic Data Capture (REDCap) is a secure web-based application for building and managing online surveys and databases. It was developed as a tool to help researchers collect and manage data effectively and responsibly, doing so in a secure and fully transparent manner.

Data entry occurs online, completed by users logged into REDCap (on the database) or via surveys, where a link is provided and no access to REDCap is required to complete the data entry. Each project consists of forms called instruments, which consist of data fields which are fully customisable by the user. Each instrument in a project can be turned into a survey.

The system was developed by a multi-institutional consortium based at Vanderbilt University. A Northern Sydney Local Health District instance of REDCap exists, hosted on a server at Royal North Shore Hospital and managed by the REDCap Administrator based within NSLHD Executive.

Why use REDCap?

Security

Information is captured and stored securely on a NSLHD Server, supported, maintained and governed by NSLHD ICT. This prevents data from floating around on an individual's USB, desktop or other miscellaneous locations, which may be subject to issues of data loss with hardware failure, viruses, staff turnover or even the breach of privacy should they be lost. Users must be an NSLHD staff member or collaborating on a project based at NSLHD. To request access, a user request form must be completed at https://rnsapmredcap.nslhd.health.nsw.gov.au/redcap/surveys/?s=ET9DTHFPWJ.

To access REDCap, users will be authenticated against a directory when logging in. Users will only have access to projects they create themselves or are given rights to access. Within each individual project, users can have their access limited to relevant portions of the data. For example, users may be given rights to only add data to certain forms, forbidden from extracting any data or granted view-only privileges. These 'User Rights' are on a project level and can be modified at any time by users with the appropriate privileges.

Documentation

There is automatic, continual documentation of all data and user activity, which protects your data. Every action is logged and the history of each data entry field listed. This audit trail prevents the intentional deletion of data, which would otherwise be difficult to do so accidentally.
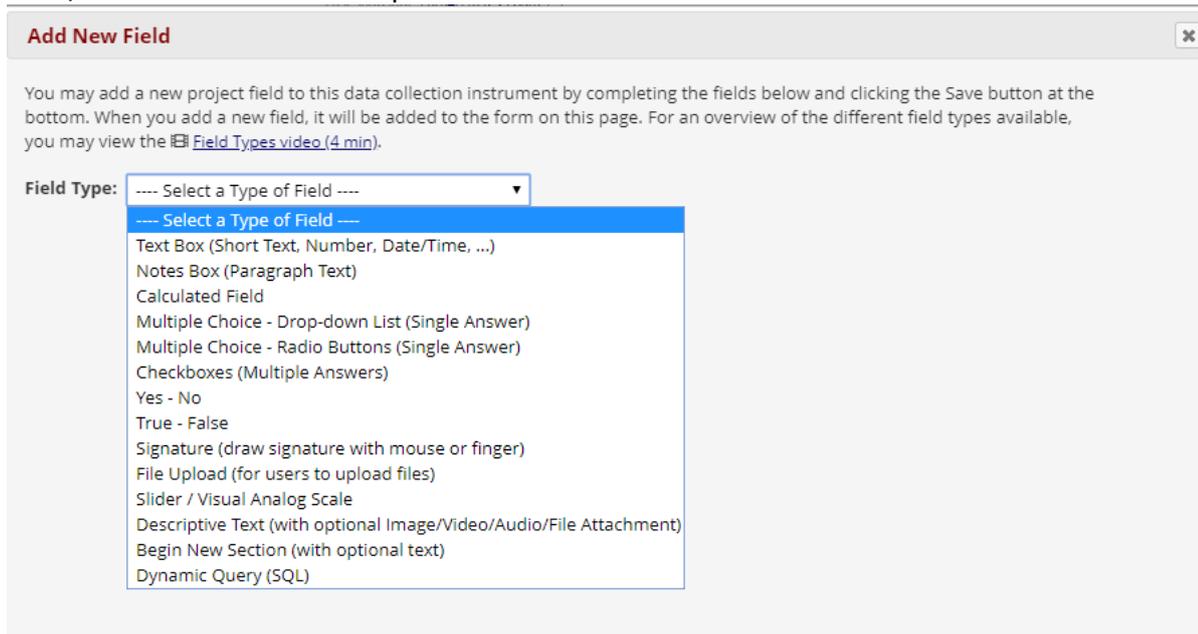
Centralised, online access

Since REDCap is web-based, it can be accessed anywhere with internet connection. This allows multiple individuals to simultaneously access the same project and make live changes. This is especially valuable for projects involving large teams or multi-site projects. In terms of multi-site projects, users from different sites can contribute data to the same database but have their own access limited so they can only view data from their own institution. This can be done utilising 'Data Access Groups'. Only relevant users requiring full access will have access to the entire dataset.

Data quality

Real-time data quality checks occur to ensure good quality data is collected from the start.

Different field types can be utilised to capture data in an appropriate format. By capturing data in specified formats, analysis can be done with no delay from data collection. For example, by designating multiple-choice options, responses are automatically assigned to a certain category. As a result, the number of responses for each category can be quickly compared using the stats/charts viewer on REDCap.
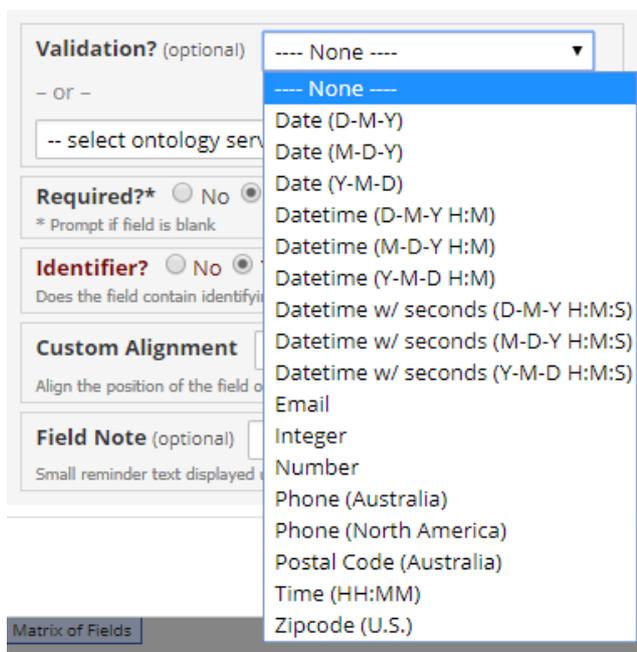

Add New Field

You may add a new project field to this data collection instrument by completing the fields below and clicking the Save button at the bottom. When you add a new field, it will be added to the form on this page. For an overview of the different field types available, you may view the ⊞ Field Types video (4 min).

Field Type: ---- Select a Type of Field ----

- ---- Select a Type of Field ----
- Text Box (Short Text, Number, Date/Time, …)
- Notes Box (Paragraph Text)
- Calculated Field
- Multiple Choice - Drop-down List (Single Answer)
- Multiple Choice - Radio Buttons (Single Answer)
- Checkboxes (Multiple Answers)
- Yes - No
- True - False
- Signature (draw signature with mouse or finger)
- File Upload (for users to upload files)
- Slider / Visual Analog Scale
- Descriptive Text (with optional Image/Video/Audio/File Attachment)
- Begin New Section (with optional text)
- Dynamic Query (SQL)

Validation? (optional) ---- None ----

- ---- None ----
- Date (D-M-Y)
- Date (M-D-Y)
- Date (Y-M-D)
- Datetime (D-M-Y H:M)
- Datetime (M-D-Y H:M)
- Datetime (Y-M-D H:M)
- Datetime w/ seconds (D-M-Y H:M:S)
- Datetime w/ seconds (M-D-Y H:M:S)
- Datetime w/ seconds (Y-M-D H:M:S)
- Email
- Integer
- Number
- Phone (Australia)
- Phone (North America)
- Postal Code (Australia)
- Time (HH:MM)
- Zipcode (U.S.)

– or –

-- select ontology ser

Required?* ○ No ⦿

* Prompt if field is blank

Identifier? ○ No ⦿

Does the field contain identifyi

Custom Alignment

Align the position of the field o

Field Note (optional)

Small reminder text displayed

Matrix of Fields

Free text fields in the project can be validated, restricting the format and the range of acceptable data that can be entered.

Fields can also be marked as required which provides a warning should the field be skipped. Calculations can be inputted to carry out numeric functions such as scoring questionnaires, calculating date/time differences or a range of novel uses, the only caveat being that the answer must be a number.

In addition to the real-time data quality checks, data quality tools can be utilised to quickly assess missing values, outliers or any other potential data issues in the entire project prior to analysis.

Study progress can be monitored and evaluated quickly utilising the 'Record Status Dashboard' which quickly shows the data entry status of all the individual forms in the database or the reporting module, which allows the creation of customisable reports to view the responses of any field in the database. The ability to monitor and evaluate study progress minimises any lag time between data collection and analysis.

REDCap is primarily a data collection tool, which provides basic stats and graphs with customisable ad-hoc reporting. For further analysis, data can be exported to common data analysis packages such as Microsoft Excel, SAS, Stata, R or SPSS. Any identifiable fields can be marked in the database and hidden from these exports.

Customisable
REDCap projects are fast and flexible to design and implement, with minimal computer skills required to create projects.

Examples of REDCap capabilities:
- Projects can be modified mid-study.
- Fields can be linked using 'branching logic' to appear when required.
- Multiple forms can be implemented in one database.
- Forms can be repeated an infinite amount of times or repeated at specific designated time-points (called events) where they are collected eg. certain follow-up time-points in a longitudinal study.
- Unique surveys can be created.
- Public survey links can be utilised to run anonymous surveys.
- A list of emails can be sent unique survey links which can be tracked, with responses going straight into that individual's record in the database.
- There is a built-in calendar to organise events to schedule and track events.
- Survey invites can be automated.
- Randomisation procedures for studies can be implemented.
- Double data entry is supported.
- Data can be imported into the database from external sources via csv format.
- Files can be stored on the database either in a 'file repository' or uploaded to a relevant record on the database.
- PDF copies of forms can be printed out, with or without data.

Is there a cost to use REDCap?
REDCap is available to use at NSLHD free of charge.

To request access to REDCap please complete the form at the following link:
https://rnsapmredcap.nslhd.health.nsw.gov.au/redcap/surveys/?s=ET9DTHFPWJ

System availability

REDCap is a secure web-based application that is accessible both within and outside of NSLHD.

REDCap is updated on average every three months which requires REDCap to go offline for approximately 60 mins. This ensures users have access to the latest tools, and that security is continually improved. Planned outages will be accompanied by a notification ahead of time.

How to access REDCap?
The NSLHD REDCap can be accessed at the following
URL: https://rnsapmredcap.nslhd.health.nsw.gov.au/redcap/

To gain access, please request a REDCap account using the REDCap access
form https://rnsapmredcap.nslhd.health.nsw.gov.au/redcap/surveys/?s=ET9DTHFPWJ

The best way to learn to use REDCap is by watching the Training Videos and practising building a project. As REDCap has a myriad of different uses, having a specific project in mind would be recommended to ensure that your practice is directed to functions that will be utilised in your project.

If you have a project in mind and require support in implementing the project or require additional information/ support with REDCap, please contact us using the REDCap support request
form https://rnsapmredcap.nslhd.health.nsw.gov.au/redcap/surveys/?s=R9EJ9LFFR4

When creating and testing your project, your project will be in 'development mode'. Once you are happy with your project please move it to 'production mode' for real data collection. 'Production mode' is safer once you are collecting real data as any database changes that affects existing data will be accompanied by a warning. This prevents the accidental loss of data which may occur if fields or events are changed in any way whilst in 'development mode'.