REDCap™
Research Electronic Data Capture

REDCap Background

- REDCap was developed by an informatics core at Vanderbilt University
- A free, secure, web-based application designed to support data capture for research studies
- Facilitates informatics support for clinical researchers
- Collaborative network of institutional researchers who share and support REDCap as a common research tool
- REDCap is available at no charge to institutional partners

VANDERBILT UNIVERSITY

REDCap Features

Build online surveys and databases quickly and securely

- Create and design your project with form-based tools instead of table based
- No software download/installation is required
- Project data entry forms can be accessed from any device that supports internet browsing
- Conception to production-level survey/database in less than one day

REDCap Features

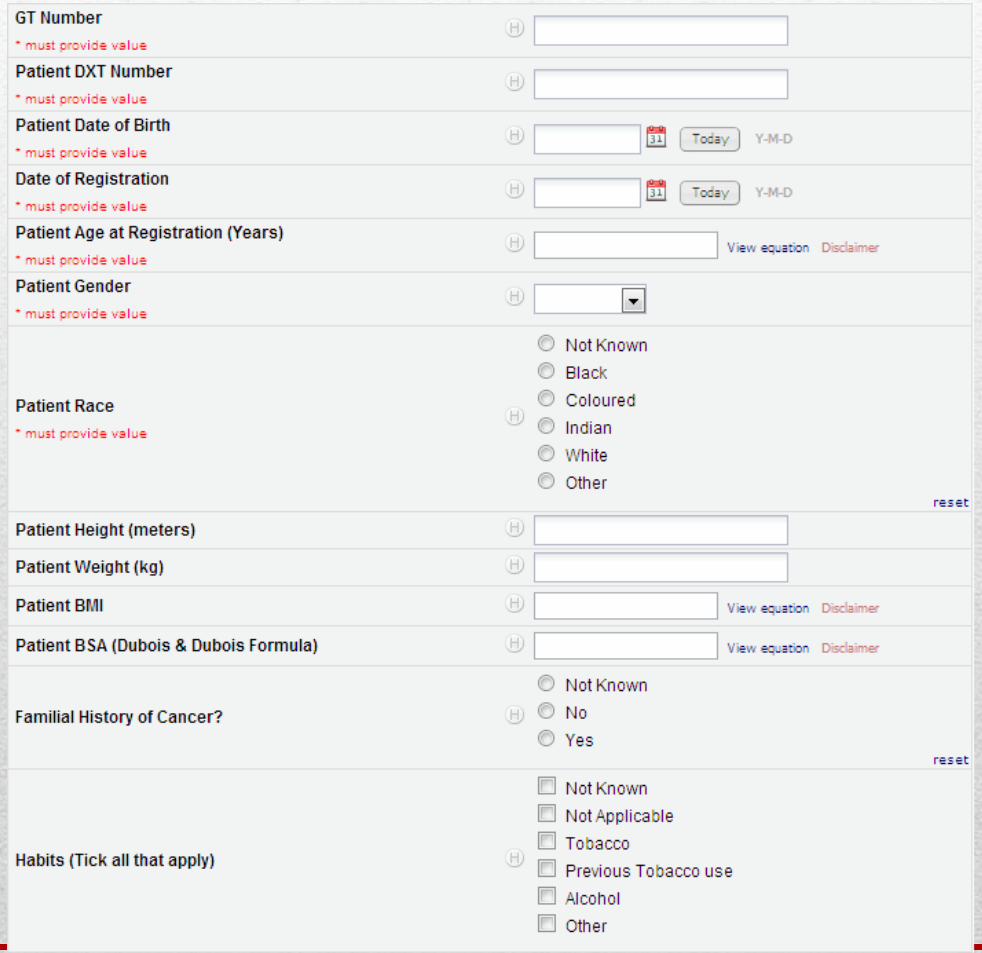
Different project types according to your needs

- Two types of instruments are available, surveys and data collection sheets
- A project can have only surveys, only data collection sheets or a combination of both
- Instruments can be used longitudinally for follow up or once off

REDCap Features

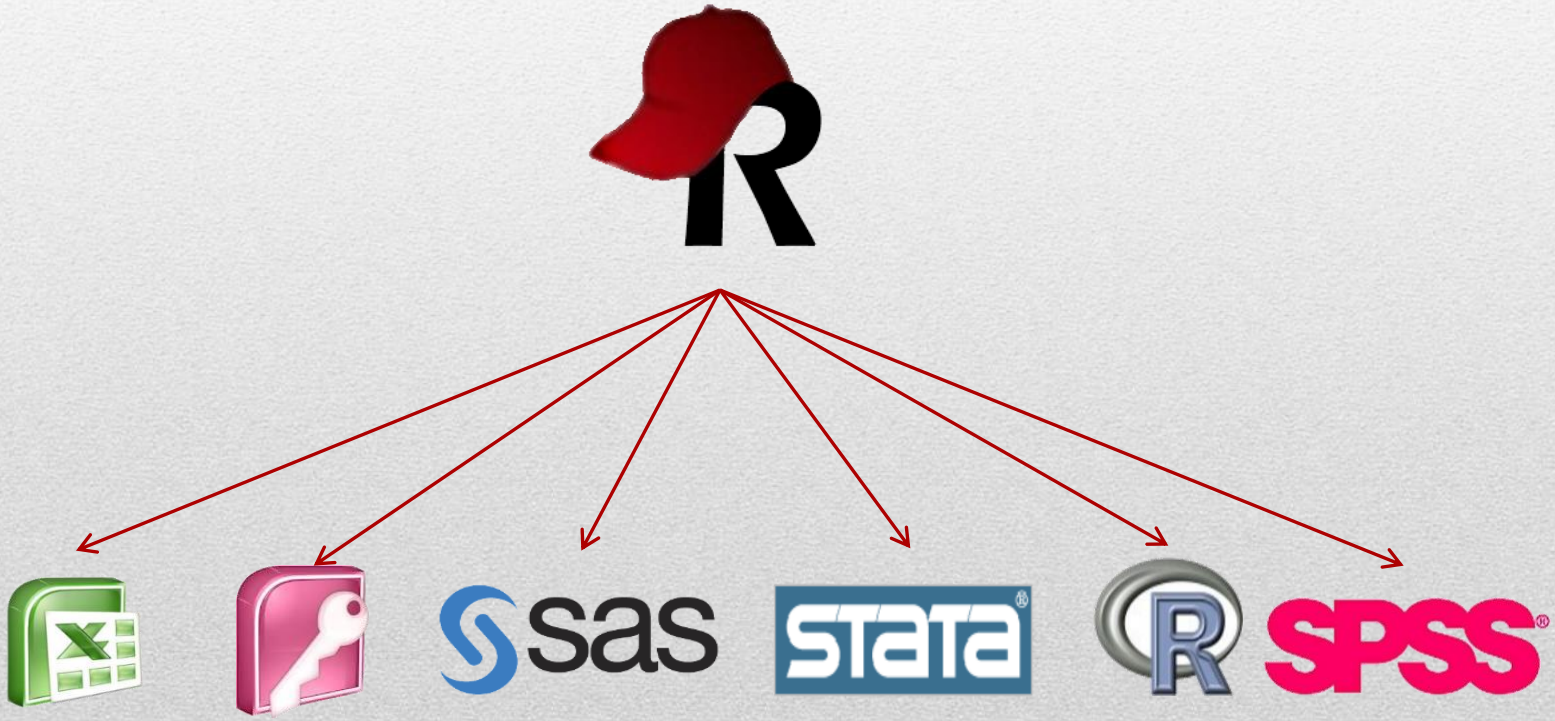
Intuitive interface

- Project design with easy to use tools and intuitive visual interface
- Faster data entry by using text boxes, radio buttons, tickboxes, drop-down lists and visual analog scales



REDCap Features

Export data to common data analysis packages



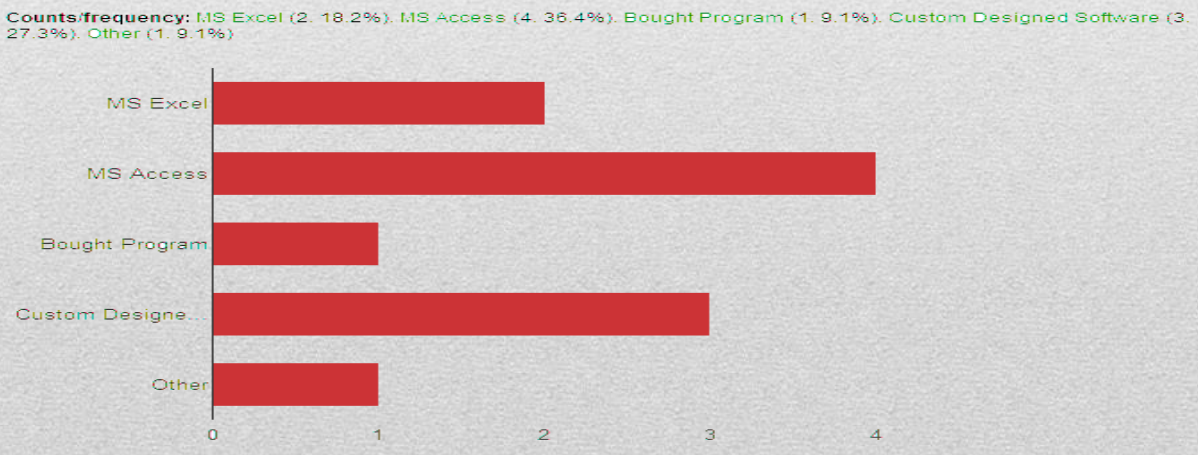
REDCap uses CSV format for exporting, which is supported by most statistical and database applications

REDCap Features

Ad Hoc Reporting

- Create custom queries for generating reports to view or download
  - Specific records for patient management
  - De-identified bulk data for research

- Graphical Data View automatically visualizes data for inspection or reporting



REDCap Features

Save your data collection instruments as a PDF to print

- Generate a PDF version of your forms and surveys for printing to collect data offline

Confidential

Patient Race	☐ Not Known ☐ Black ☐ Coloured ☐ Indian ☐ White ☐ Other
Specify Patient Race	_____
Patient Height (meters)	_____
Patient Weight (kg)	_____
Patient BMI	_____
Patient BSA (Dubois & Dubois Formula)	_____

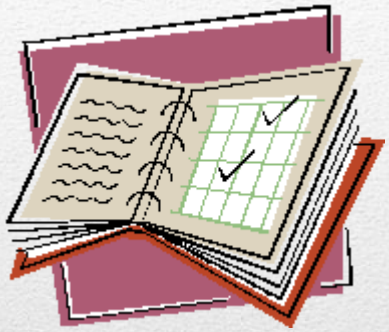
History

Familial History of Cancer?	☐ Not Known ☐ No ☐ Yes
Details of Familial History of Cancer (What type of cancer, which family member?)	_____
Habits (Tick all that apply)	☐ Tobacco ☐ Previous Tobacco use ☐ Alcohol ☐ Other
Describe the 'other' habit and state how frequently it is used	_____
How long has the patient been smoking? (Years)	_____
How many cigarettes does the patient smoke per day?	_____
How long did the patient smoke before quitting? (Years)	_____
How many cigarettes did the patient smoke per day before quitting?	_____
When did the patient stop smoking?	_____
Time abstained from smoking (months)	_____
How many units of alcohol does the patient use per week? (1 unit = 1 beer, 1 standard glass of wine, 1 shot (30ml) of spirits)	_____
Co-Morbidities	☐ None ☐ Diabetes ☐ Cardiovascular ☐ Hypertension ☐ Renal Impairment ☐ Hepatic Impairment ☐ Rheumatoid Condition ☐ Other
Describe 'Other' Co-Morbidity	_____
Do you want to add another co-morbidity?	☐ Yes ☐ No

REDCap Features

Scheduling

- Built-in project calendar
  - Organize data capture events
  - Schedule patient visits
  - Order follow-up investigations



NEW Participant ID **1**

Data Collection Instrument	Events							
	Registration (1)	Investigations & Staging (2)	Treatment (3)	Follow Up1 (4)	FU2 (5)	FU3 (6)	FU4 (7)	FU5 (8)
Demographics and Presentation	●							
Investigations		●		●	●	●	●	●
Staging		●		●	●	●	●	●
Treatment			●	●	●	●	●	●
Acute Toxicity				●	●	●	●	●
Late Toxicity				●	●	●	●	●
Outcome and Survival				●	●	●	●	●

REDCap Features

Easily manage a contact list of survey respondents or create a simple survey link

- Build a list of email contacts
- Create custom email invitations
- Track who responds
- Create a single survey link to email out or post on a website.

REDCap Features

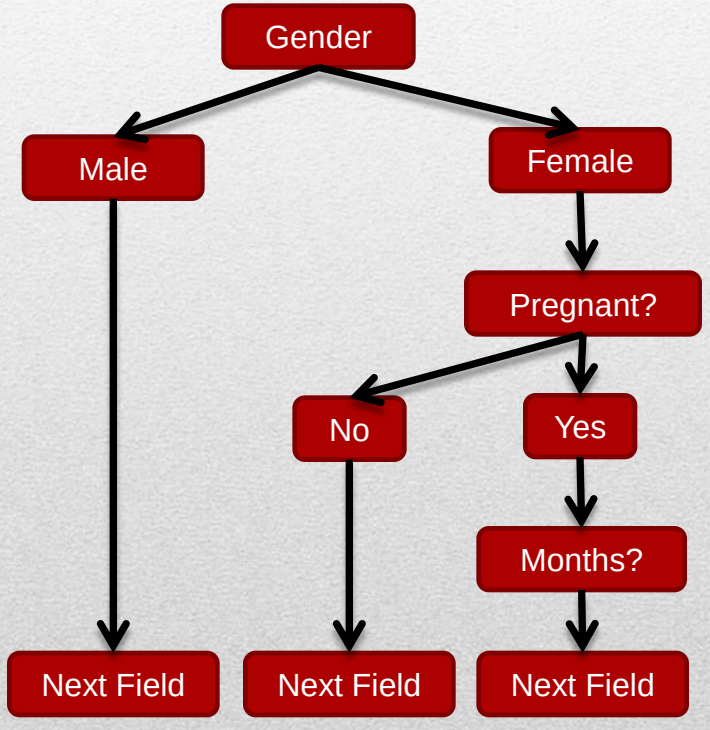
Send files to others securely

- Using 'Send-It', upload and send files to multiple recipients:
  - Project documents that are too large for email attachments
  - Documents that contain sensitive data

REDCap Features

Advanced features

- Branching/skip logic – Fields only become available as certain conditions are met
- Auto-validation and Data Quality rules– Data can be validated as it is entered
- Calculated fields – Calculate age from date of birth or BMI from height and weight, including conditional logic (if/then/else)
- File uploading – Data capturers can upload documents to be stored in the record, like pathology reports or radiology results



REDCap Features

User accounts and Access control

- Each researcher/data capturer has own account
- Other users cannot access projects that you create and records that you store
- You can give another user permission to access your project, and decide whether he can
  - View or modify fields in project design
  - Enter or change data
  - View/download identified or de-identified data
- Faculty administrator has access to all accounts, able to assist with troubleshooting, project design, report building, integration with existing databases

REDCap Features

Audit Trail

- Log of which users access a project
- Detailed record of actions taken by user
- History of field values before each change was made

Security

- The Wits REDCap server is located on Main Campus, in a secure server room
- Physical access to the server is controlled
- Network access is secured by firewall and encryption of all data traffic
- Data is backed up by using RAID 6, a copy of the disc is kept in a separate machine and the data is also regularly backed up off-site

REDCap Features

REDCap API

- External applications connect to REDCap remotely in a programmatic or automated fashion
- Vanderbilt continues development and refinement of REDCap

REDCap @ Wits

Contact the REDCap Administrator (redcap.health@wits.ac.za) if you have any questions, or for access to the Wits REDCap website