



CAHS Research Education Program Research Skills Seminar

Using REDCap for Data Capture and Management

5 May 2023



Presented by

Dr Jane Mugure GithaeCAHS Research Education Program
Research Fellow







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Child and Adolescent Health Service, Department of Research

Department of Health, Government of Western Australia

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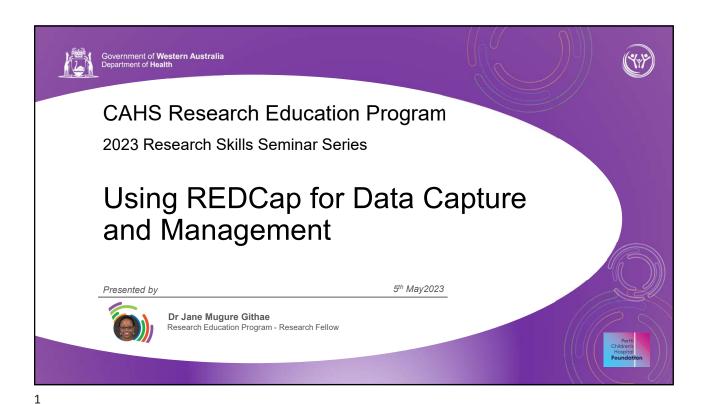
Using REDCap for Data Capture and Management

PRESENTATION SLIDES



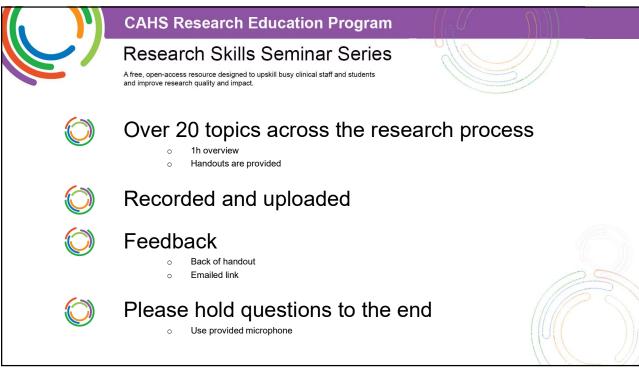


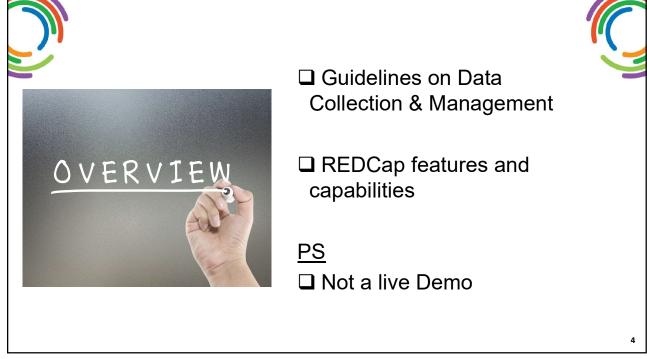
CAHS Research Education Program Research Skills Seminar Series



Acknowledgement of country

I would like to acknowledge the traditional custodians of the land, the Noongar Whadjuk people, and pay my respects to their elders, past, present and future.







Data Management

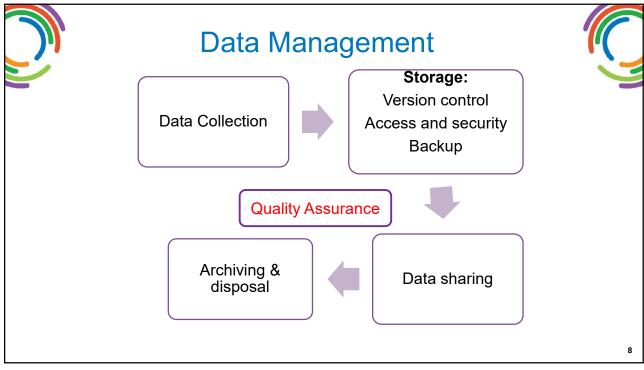
Organization & documentation of data within the processes of a research project

- ✓ Ensures efficiency of research processes DATA MANAGEMENT
- ✓ Enables collaboration
- ✓ Necessity for funding
- ✓ Data security
- ✓ Shareable data enables audits



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Guideline



- Australian Code for Responsible Conduct of Research(2018):
 - Institutions
 - Researchers



"Now, now, now, there's no reason to be intimidated by compliance."

Management of Data and Information in Research NHMRC

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Institutional responsibilities



- ☐ Training of researchers
- ☐ Ownership, stewardship and control of research data and primary materials
- ☐ Storage, retention and disposal
- ☐ Safety, security and confidentiality
- ☐ Access by interested parties

Management of Data and Information in Research NHMRC

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Researcher responsibilities



☐ Data management plan:

- Security
- Policies & procedures
- Licensing agreements
- Training team members
- Data collection form
- Retention & publication

Management of Data and Information in Research NHMRC

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The 7 Habits of Highly Effective People

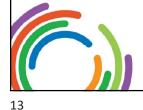
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Data Collection

Consider:

- 1. Research aim / objectives
- 2. Type of data required
- 3. Methods and procedures for:
 - Data collection
 - Storage
 - Analysis





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Data Collection Strategy



- ☐ Study flow
 - Number of data collection forms
- ☐ Users:
 - Research team &/or self-administered tool
- ☐ Access:
 - Limited or public
- ☐ Statistical analysis plan
- □ Timeframe
 - Testing, training, ease-of-use





What is REDCap?

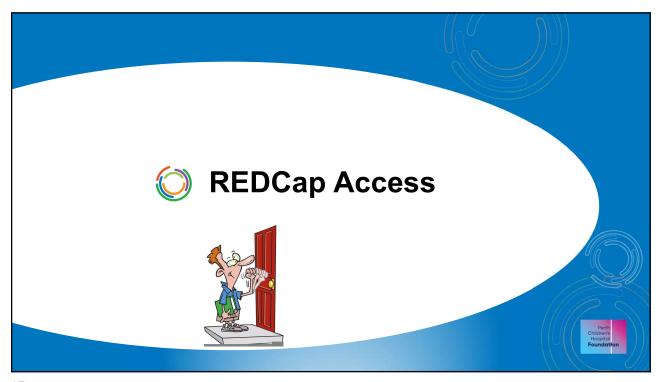


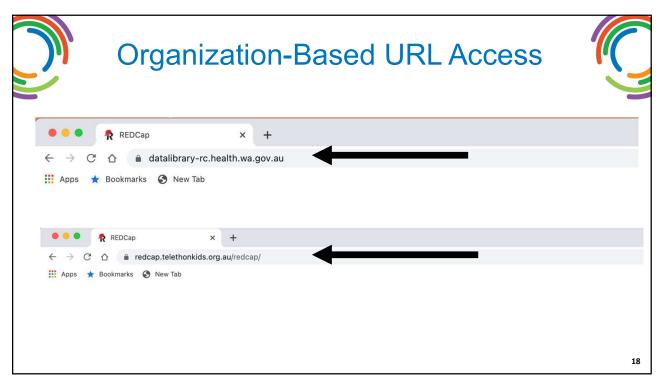
John Ruskin

- Web application
- Vanderbilt University (2004)
- · Available to:
 - Institutional Partners (WA DoH, TKI)
 - REDCap consortium: NGOs
 - REDCap Cloud: Fee based
 - Vanderbilt's REDCap system

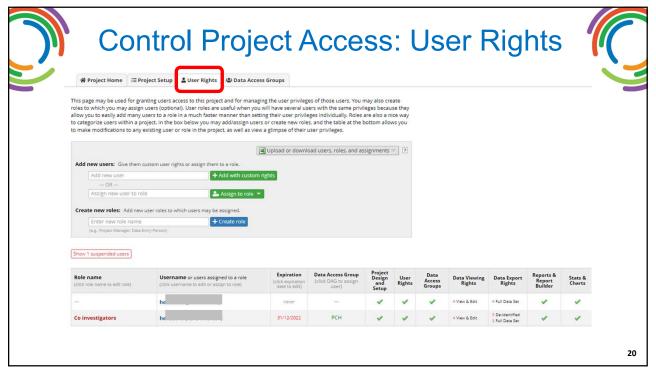


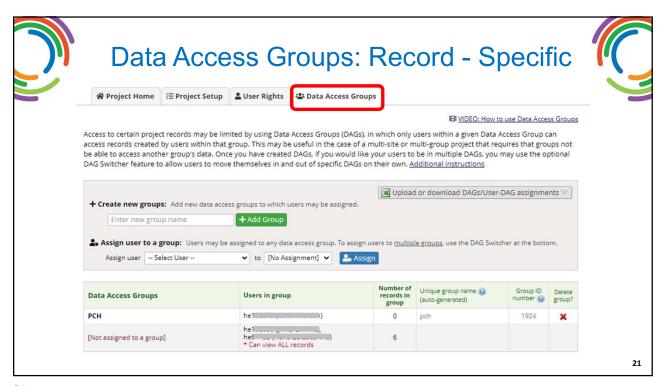
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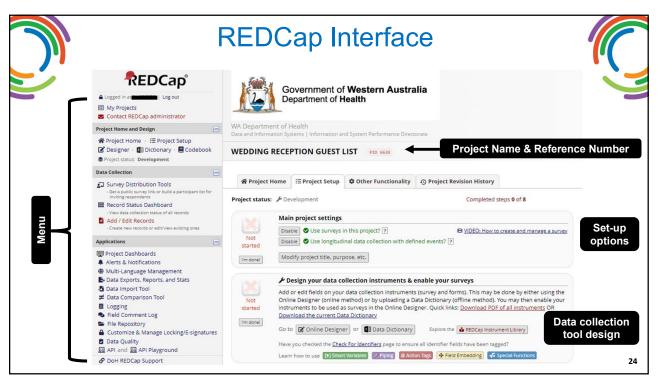


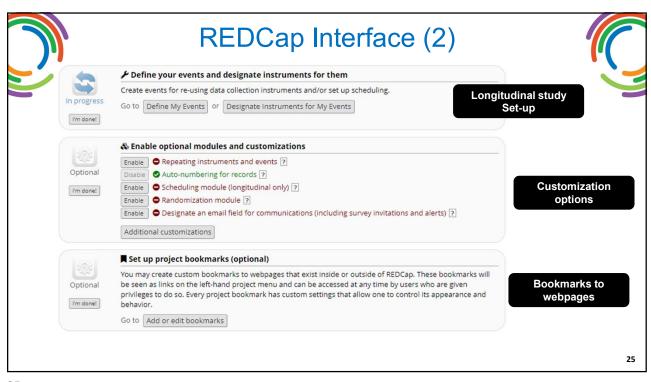


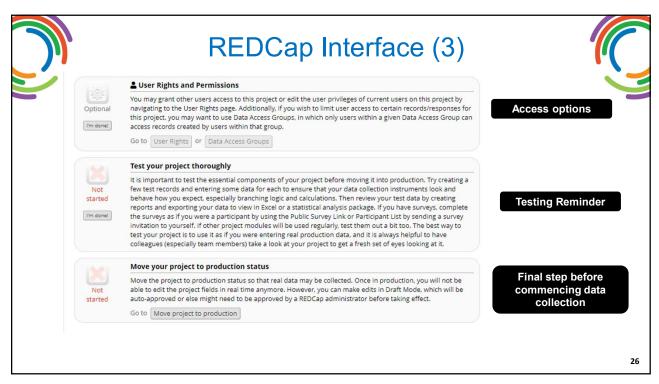


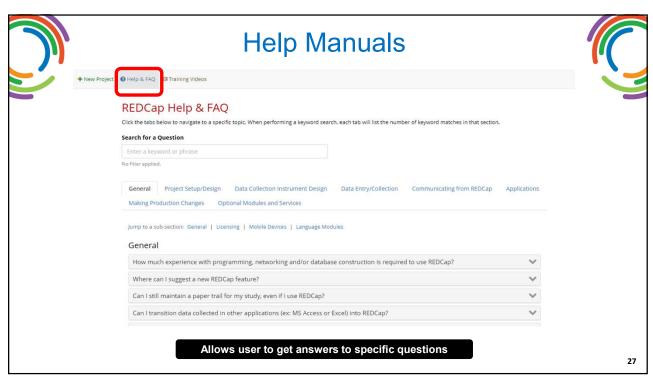


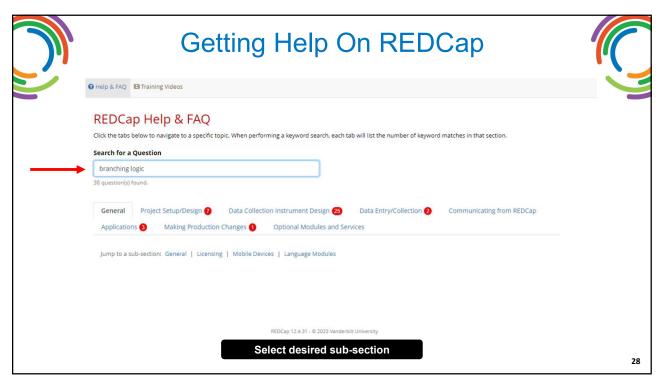


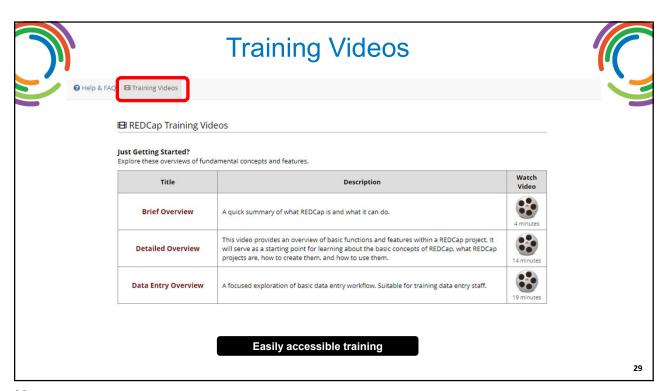


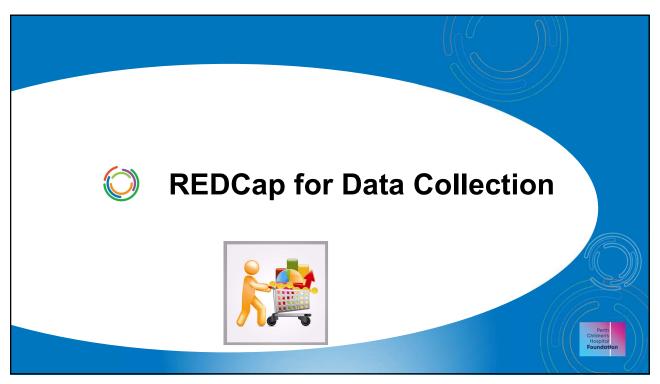














REDCap for Data Collection



- □ Web browser
- □ REDCap Mobile App
- ☐ CSV / CDISC ODM (XML) import
- MyCap
- ☐ PDF print out of the form

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Project Setup



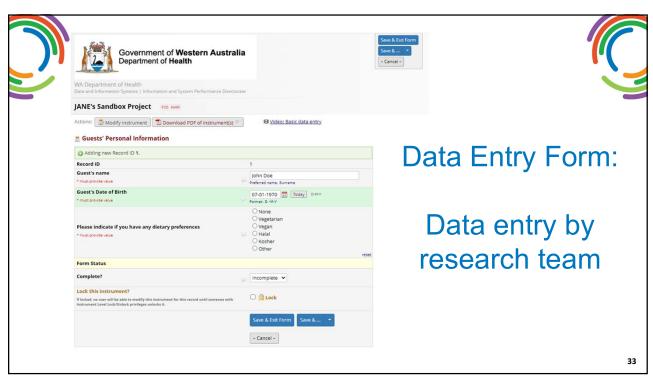
Data Collection Tool

- Data Entry Form
- Survey
- Both

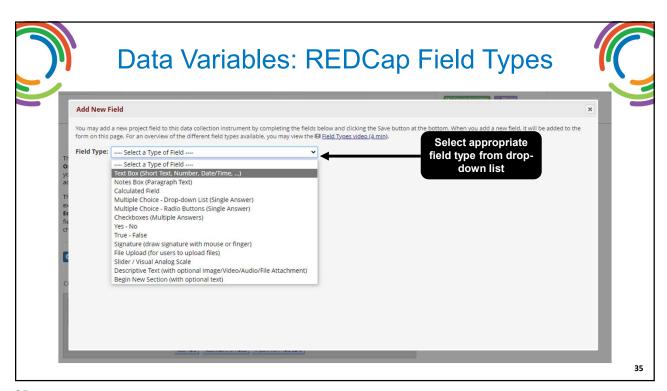
Data Collection Format

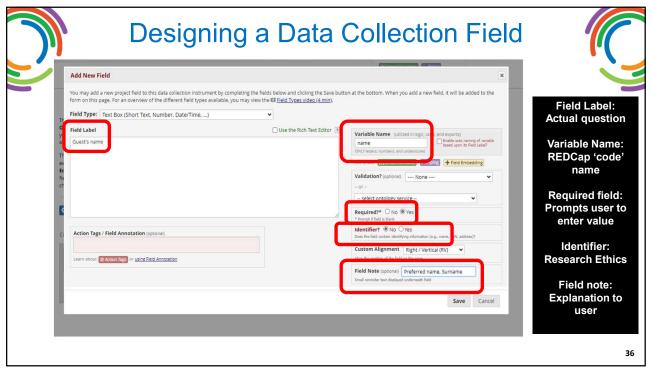
- Classic study
- Longitudinal study

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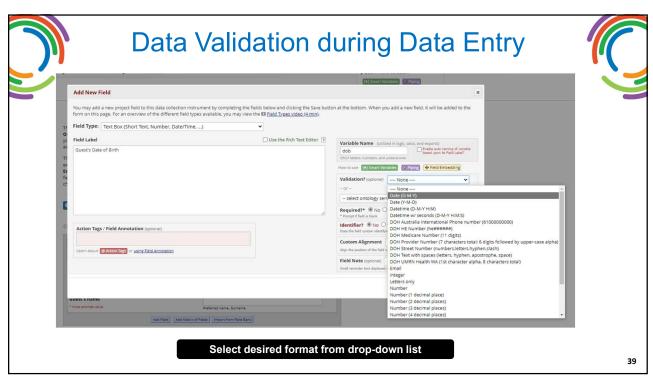


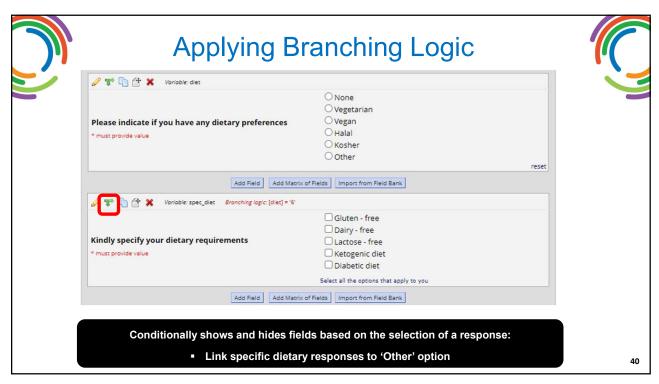


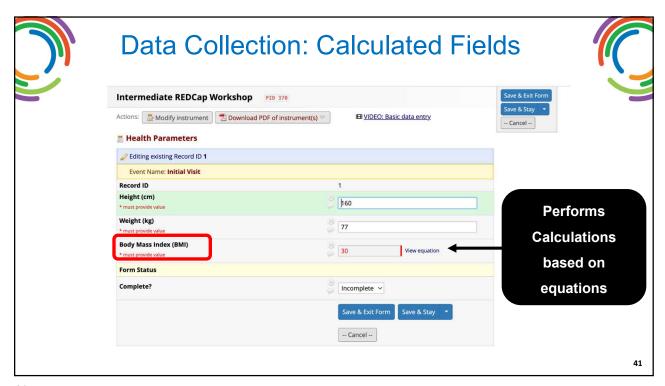


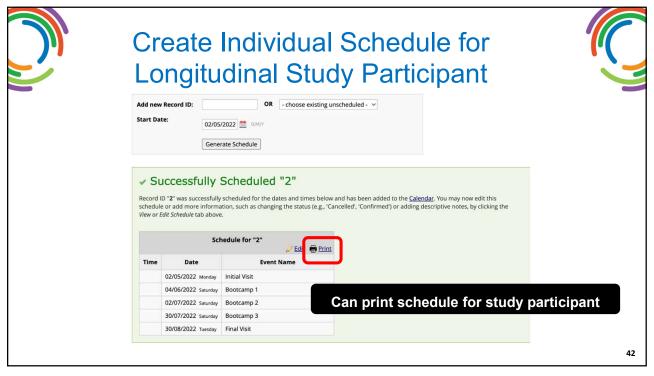
Current instrument: Lifestyle							Return to edit vie	
NOTE: Please be aware that branching pages and data entry forms.	g logic and calculate	ed fields will	not function	on this page.	They only	work on the s	urvey	
Please select the choices that indicate your weekly routine for the following activities								
	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	
Aerobics								
Weight training								
Drinking alcoholic beverages	U							

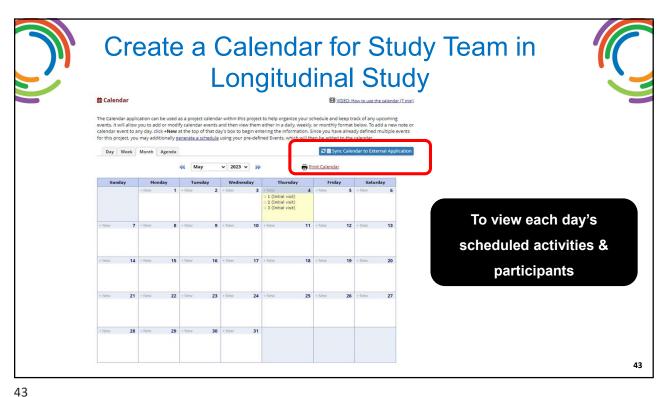


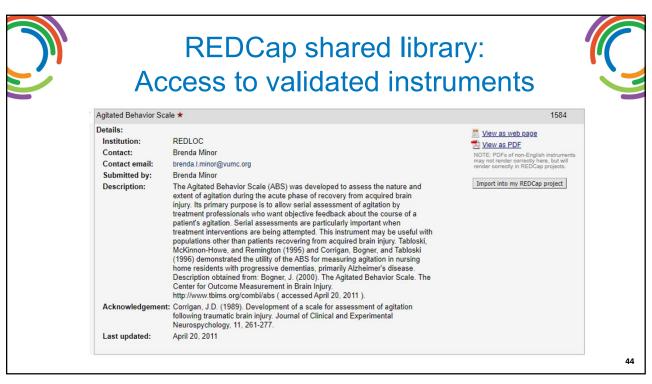


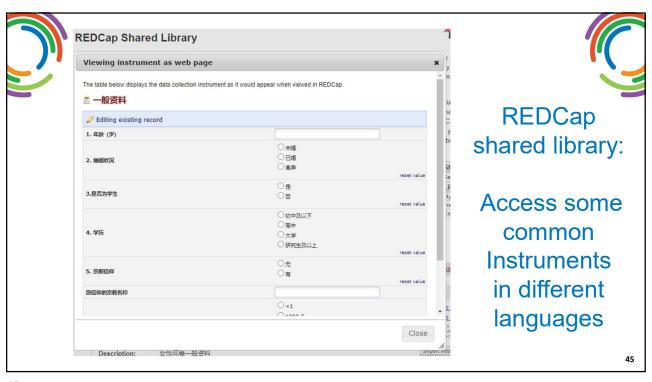


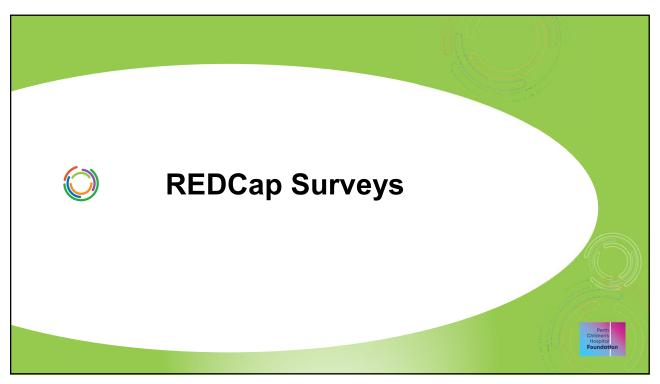


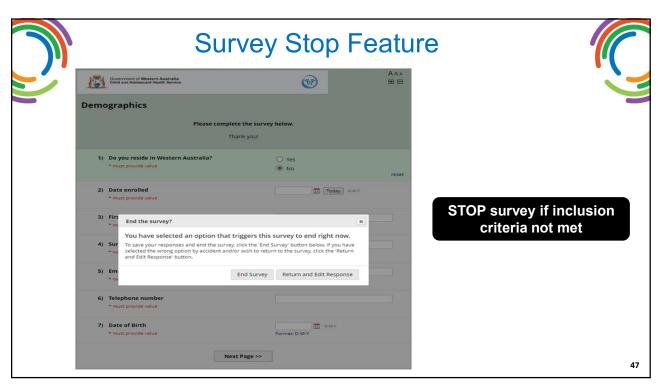


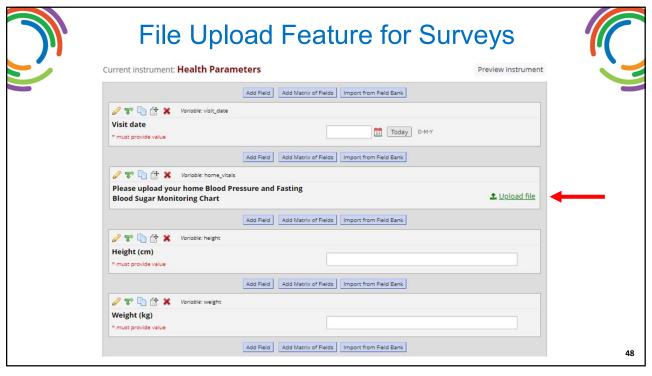


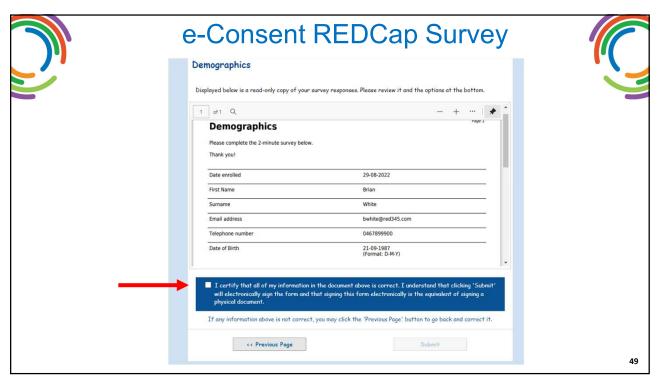


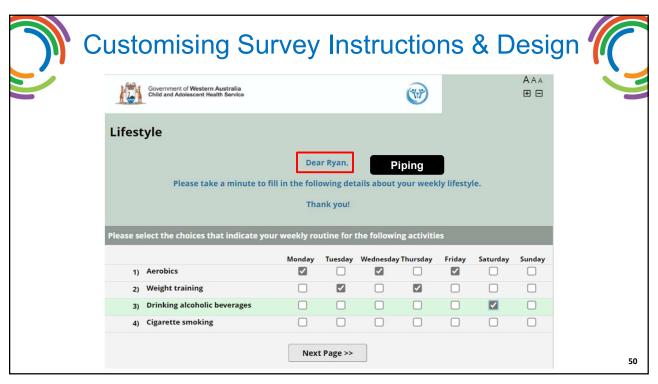


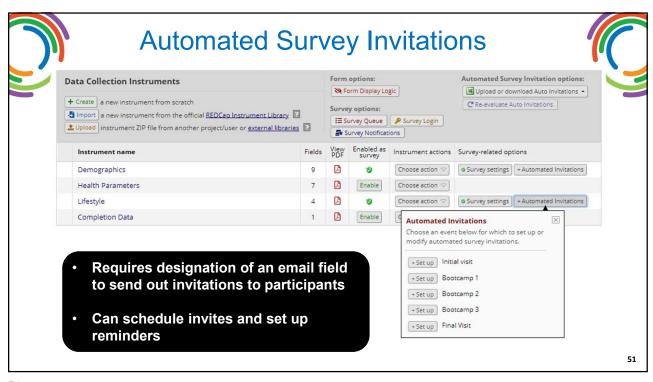


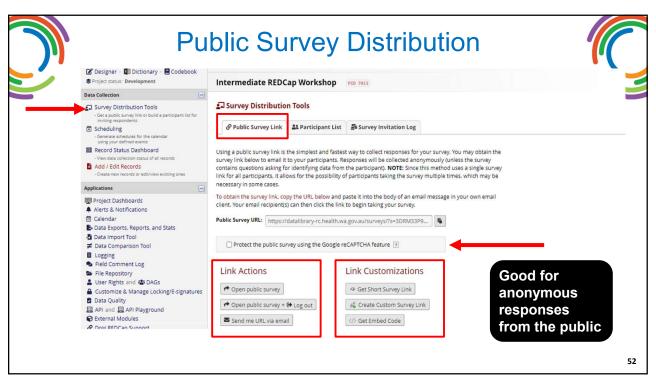


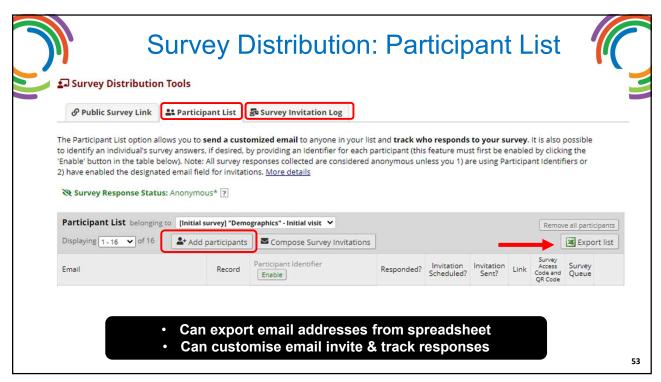


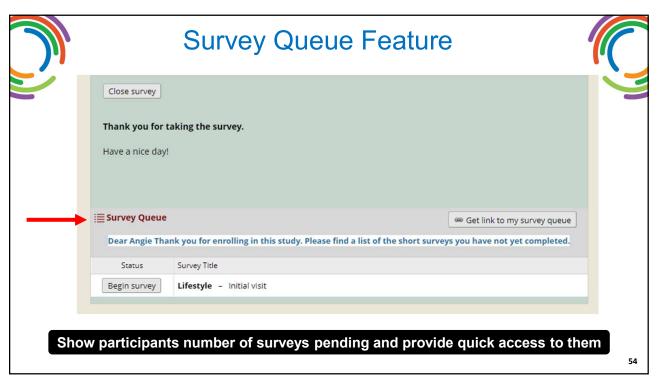


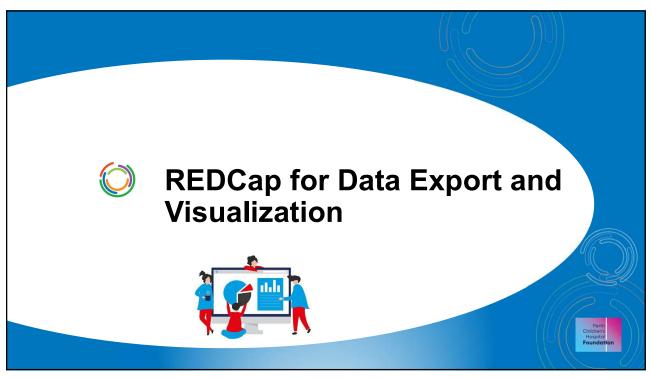




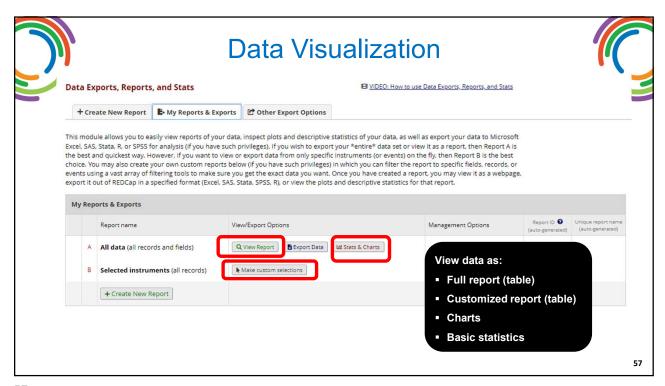


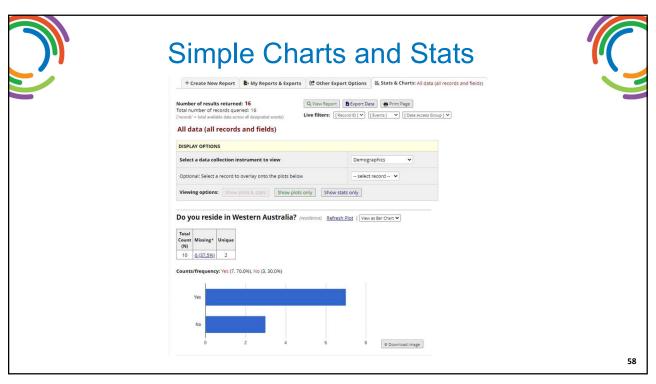


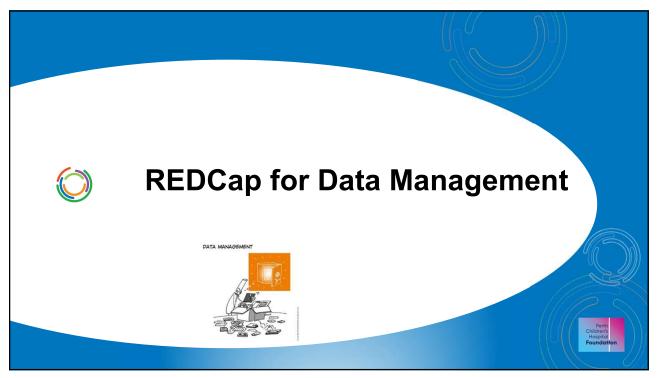


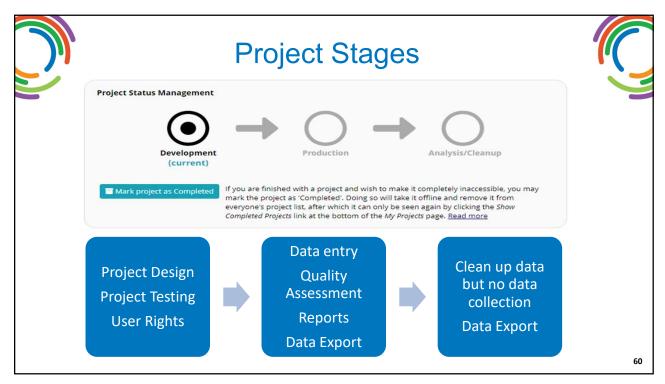


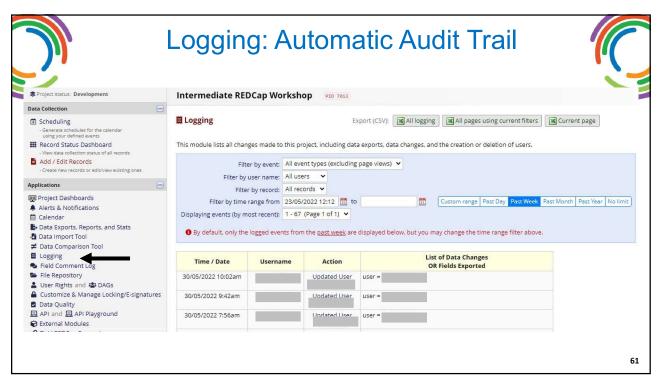


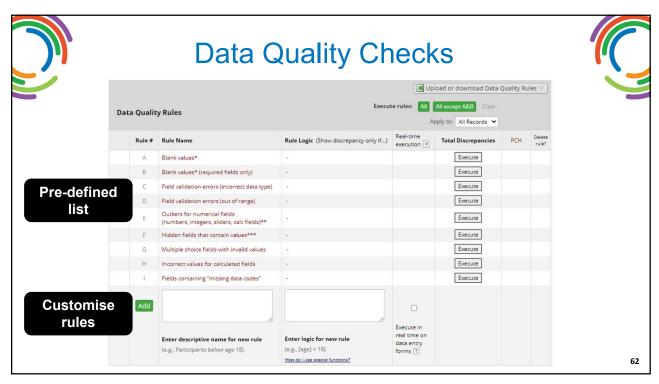


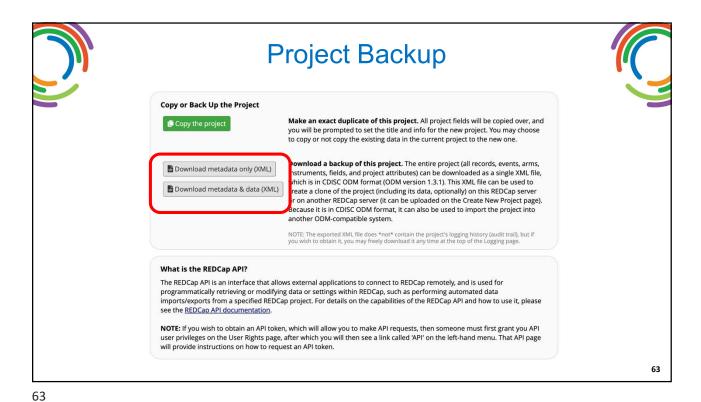












Project Migration Exporting "Entire project (metadata & data)" Export Entire Project (metadata & data) De-identification options (optional) Advanced data formatting options The options below allow you to limit the REDCap Project (XML) Set CSV delimiter character Set the delimiter used to separate values in the CSV data file (only valid for CSV Raw Data and CSV Labels export formats): amount of sensitive information that you are R The entire project (all records, events, arms, instruments, fields, and project attributes) can be downloaded as a single XML file, which is in CDISC ODM format (ODM version 1.3.1). exporting out of the project. Check all that , (comma) - default 🗸 Known Identifiers: Force all numbers into a specified decimal format? Remove all tagged Identifier fields (tagged in Data You may choose to force all data values containing a decimal to have a specified decimal character (comma or period/full stop). This will be applied to all calculations and number-validated text values in the export file. This XML file can be used to create a clone of the project (including its data, optionally) on this REDCap server or on another REDCap server (it can be uploaded on the Create New Project page). Because it is in CDISC ODM format, it can also be used to import the project into another ODM-compatible system. Hash the Record ID field (converts record name to an Use fields' native decimal format (default) Free-form text: Remove unvalidated Text fields (i.e. Text fields other than dates, numbers, etc.) NOTE: Your data formatting selections above will be remembered in the future and will be pre-selected upon your Remove Notes/Essay box fields next export. Date and datetime fields:

Remove all date and datetime fields

OR —

Shift all dates by value between 0 and 364 days (shifted amount determined by algorithm for each record) What is date shifting?

Deselect all options

Export Entire Project (metadata & data)

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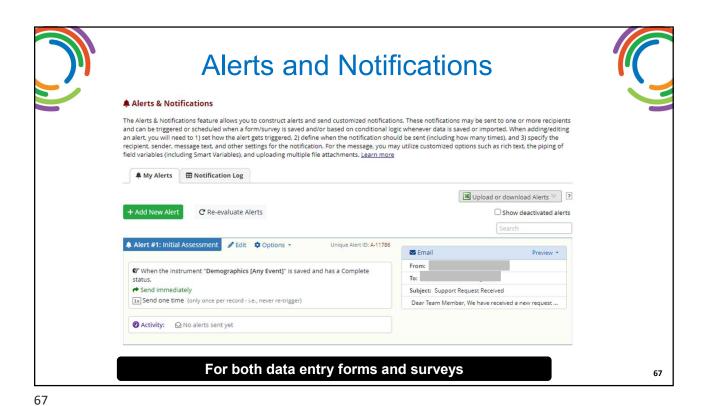
Multi-language Management

- Feature that shows data entry form or survey in multiple languages thus enabling data entry in preferred language
- Does not auto-translate:
 - Provides tools so one can easily translate





Multi-Language Management (vanuerpiit.eau)



Other Functions

- ☐ REDCap Application Programming Interface (API)
- ☐ Twilio SMS & Voice call services for surveys
- External modules
- ☐ Plus many more



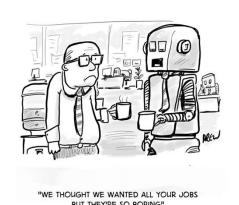
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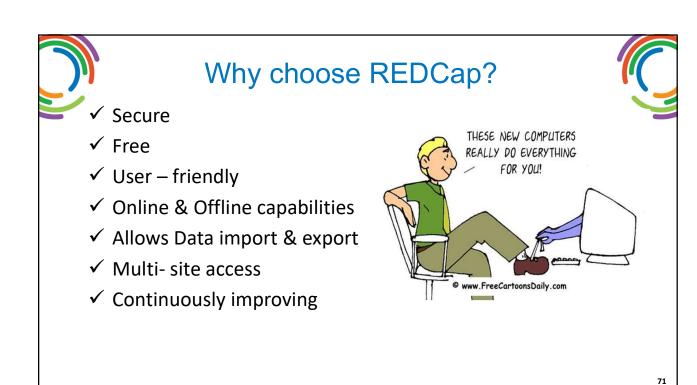
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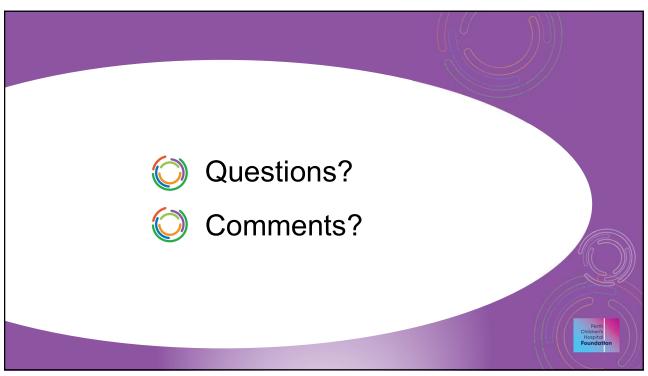
REDCap Limitations

- Does not support billing
- Simple statistical analysis only
- Not a workflow tool as some tasks need manual intervention
- Link to EMR (in progress)



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Upcoming Research Skills Workshops + Seminars

- 12 May Using Social Media in Research Dr Kenneth Lee, UWA
- 19 May Getting the most out of Research Supervision
 - A/Prof Sunalene Devadason
- 26 May Research Impact
 - Dr Tamika Heiden, Research Impact Academy, Vic

We love feedback

A survey is included in the back of your handout, or complete online https://tinyurl.com/surveyUsingREDCap

 ${\color{red} \boxtimes} \ \underline{ResearchEducationProgram@health.wa.gov.au} \ \textcircled{\o} \ \underline{cahs.health.wa.gov.au/ResearchEducationProgram}$

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Using REDCap for Data Capture and Management

RESOURCE NOTES









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1. About REDCap and WA Department of Health

- REDCap is a secure, web-based tool for data collection and management. It was initially developed in 2004 at Vanderbilt University in the United States for clinical research purposes.
- The REDCap Consortium, also founded by Vanderbilt, is a collaborative network of more than 6,500 institutions from over 153 countries that freely contribute to ongoing development of the software.
- REDCap is free to use by non-profit or governmental institutions.
- REDCap is used worldwide by over 1.6 million users, particularly in the academic research community and informatics teams.
- FAQ REDCap (projectredcap.org)
- In Western Australia, REDCap is currently used by the University of Western Australia (UWA), Curtin University, Telethon Kids Institute and Western Australian Health Translation Network (WAHTN).
- Additionally, REDCap is currently used by WA Health employees on independent internal (behind firewall) instances within the South Metropolitan Health Service (SMHS) and North Metropolitan Health Service (NMHS).

Key features

- Simple, powerful interface for building surveys, forms and databases
- Free to use by all WA Health employees
- Secure and web-based integrated into WA Health Active Directory with two-factor authentication
- Only requires internet access users do not need to download software
- Has offline capabilities
- Project owner control of user permissions
- Easy to send surveys/forms and track responses
- Full Audit trails of data access, entry and revision
- Advanced features such as calculated fields, branching logic, file uploading and data piping
- API (Application Programming Interface) automated integration into applications such as PowerBI
- Export data into analysis packages e.g., Microsoft Excel, R, SAS, STATA and SPSS
- Ad hoc reporting tools
- Download forms and surveys as PDFs
- Free and established online training resources.

Advantages for WA Health

Deployment of REDCap across WA Health will directly enhance outcomes for patients and the whole system, improving the:

- quality and compliance of data collections
- · processes and procedures in Safety and Quality initiatives
- quality and compliance of research projects





- streamlining and digitisation of paper-based processes
- collaboration and sharing of data
- automated capture of Patient Reported Outcome Measures (PROMs).

Some other benefits include:

- compliance with the <u>Information Management Policy Framework</u>
- delivers on <u>Sustainable Health Review</u> recommendations surrounding investment in digital healthcare, using data wisely and innovation for sustainability
- alignment with the <u>2020-2030 WA Health Digital Strategy</u>.

2. Support for the WA Health instance of REDCap

The Department of Health WA also provide access for researchers and clinicians to their own instance of REDCap.

To set up an account or to find out more visit the <u>Department of Health Support Page for REDCap</u>.

The support page includes links to other documents such as a "How To" guide and "Project Migration" guide.

Enquiries

For general enquiries please email DataLibrary@health.wa.gov.au

Useful links

- About REDCap
- Login to REDCap
- Register for REDCap

Resources

- REDCap How-to guide (1Mb pdf)
- REDCap FAQs (284kb pdf)
- REDCap project migration guide (321kb pdf)

Other training outside of CAHS

When you login to REDCap, there are Help and FAQ and Training Videos tabs at the top of the screen. Help & Information is also available on the bottom left of the screen when you enter projects.

Vanderbilt has developed a free online training course on clinical data management though <u>Coursera</u>. REDCap is used for the applied parts of the course.





Having such a large global user-base, there are range of REDCap resources available online. Many institutions have prepared user guides that provide step-by-step instruction for the most commonly used features of REDCap.

3. Support for the Telethon Kids Institute instance of REDCap

REDCap is a self-use system and email-support is not available for users of the TKI instance, unless your query relates to either:

- 1. an account/permission related issue
- 2. a request to engage in consultation

Online resources

There are substantial resources online to help researchers troubleshoot issues and/or upskill in REDCap.

These include:

- a number of video tutorials within the application to provide additional insight into its functionality (located on the top menu bar of the REDCap home page or on the left hand menu under 'Help and Information'); and
- the REDCap Help & FAQ page (Under 'Help and Information' at the bottom of the left hand menu).

Data management support

Limited Data Management support is available to researchers through the Telethon Clinical Research Centre (TCRC) who facilitate limited short (30 or 60 minutes) bookable consultations, Monday and Wednesday mornings (9-12pm), where you can discuss your study design and set-up in REDCap with an experienced Data Manager.

In order to access this, please register your study with the TCRC via the <u>enquiry form</u> (if you have not already done so) then you can <u>book a consultation</u>.

Further information can be found on the home page of the Telethon Kids Instance of REDCap.





4. REDCap Workshops at PCH

The Research Education Program (REP) in collaboration with the Telethon Kids Institute (TKI) present a finite number of workshops throughout the year to walk participants through the basic functionalities and provide initial support for project set-up and maintenance.

For a detailed schedule, visit the <u>CAHS REDCap page on Healthpoint</u> (WA Health staff only).

2023 Schedule

Topic	Day	Date	Registration link
Workshop 5 Intermediate Walkthrough	Tuesday	6 June 2023	Register
Workshop 6 Creating Surveys	Tuesday	27 June 2023	Register
Workshop 7 Basic Walkthrough	Tuesday	1 August 2023	Register

Registrations open one month before workshop date. For more information follow our Eventbrite page or register for our mailing list.

Who can attend?

Only staff working within the Perth Children's Hospital campus are able to access these workshops as the Telethon Kids Instance is used to provide the training. Participants must be from either Telethon Kids Institute or Perth Children's Hospital.

Recorded training - open access

Our <u>Basic Walkthrough</u> and <u>Intermediate Walkthrough</u> workshops from 2022 and <u>Creating Surveys</u> workshop from 2023 have been recorded and are available to follow-along at your own pace. Support material is also available to download from these links once a short access form is completed.

5. Training Videos

REDCap Mobile App

REDCAP MOBILE DEVICE APPLICATIONS – REDCap (projectredcap.org)

Multilanguage management

Multi-Language Management (vanderbilt.edu)





Research Skills Seminar Series 2023

A free, open-access resource designed to upskill busy clinical staff and students and improve research quality and impact

Using Social Media in Research

12th May 2023

12.30-1.30pm

As a researcher, it is difficult to reach the public and broadcast your work. Building and maintaining your "brand" will help set you apart.

This seminar provides the tools to connect with other researchers, build your network, and in the long run, effectively translate your research to a wider audience.

Perth Children's Hospital Auditorium

Level 5, 15 Hospital Ave Nedlands Accessible via pink or yellow lifts

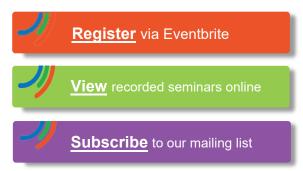
- OR -

Access online via Teams or Avaya

- OR -

Watch live from a hosted video-conferencing site

- Bunbury Hospital
- Fiona Stanley Hospital
- Lions Eye Institute
- Royal Perth Hospital









Dr Kenneth Lee Senior Lecturer - Pharmacy Practice, **UWA**

As a clinician, Dr Lee works in a large medical centre as the in-house pharmacist, as well as in private consultancy, where he primarily delivers comprehensive medication management review services to domiciliary patients.

Dr Lee is passionate about integrating practice, research, and teaching.











Research Skills Seminar Series 2023

staff and students and improve research quality and impact Getting the most out of Research Supervision

19th May 2023 12.30-1.30pm

This seminar covers the importance of understanding the rights and responsibilities of both supervisors and supervisees doing research, whether for a formal degree or a small project, and how to get the best out of both roles. It also provides practical tips related to the selection of suitable research projects, supervision frequency and time allocation, different supervision styles, remote supervision and working with multiple supervisors.

Perth Children's Hospital Auditorium

Level 5, 15 Hospital Ave Nedlands Accessible via pink or yellow lifts

- OR -

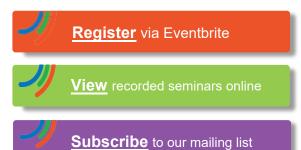
Access online via Teams or Avaya

- OR -

Watch live

from a hosted video-conferencing site

- **Bunbury Hospital**
- Fiona Stanley Hospital
- Lions Eye Institute
- Royal Perth Hospital





Meet the presenter



A free, open-access resource designed to upskill busy clinical

A/Prof Sunalene Devadason Senior researcher at PCH. **Graduate Research Coordinator, UWA Medical School**, Division of Paediatrics.

Sunalene has extensive experience on both sides of research governance process as a reviewer and a researcher.





















Research Skills Seminar Series

A free, open-access resource designed to upskill busy clinical staff and students and improve research quality and impact.

2023 Seminar Schedule

Interactive in pdf format Last updated 27/4/23

	DATE	TOPIC	PRESENTER	ENROL	WATCH
1	3 Mar	Research Fundamentals	Dr Kenneth Lee, UWA	-	<u>2023</u>
2	17 Mar	Introductory Biostatistics	Michael Dymock, TKI	-	2023
3	28 Apr	Scientific Writing	A/Prof Tony Kemp, UWA	-	<u>2023</u>
4	5 May	REDCap for Data Capture and Management	Dr Jane Mugure Githae, CAHS	REGISTER	2021
5	12 May	Using Social Media in Research	Dr Kenneth Lee, UWA	REGISTER	2022
6	19 May	Getting the Most out of Research Supervision	A/Prof Sunalene Devadason, UWA/CAHS	REGISTER	2022
7	26 May	Research Impact	Dr Tamika Heiden, Vic	REGISTER	2022
8	2 Jun	Survey Design & Techniques	Dr Jane Mugure Githae, CAHS	REGISTER	2021
9	9 Jun	Conducting Systematic Reviews	Prof Sonya Girdler, Curtin Uni	REGISTER	2022
10	16 Jun	Consumer & Community Involvement in Research	Belinda Frank, TKI	REGISTER	<u>2022</u>
11	23 Jun	Project Management	Melanie Wright, SMHS	REGISTER	2022
12	30 Jun	Sample Size Calculations	Michael Dymock, TKI	REGISTER	2022
13	21 Jul	Introduction to Good Clinical Practice	tbc	REGISTER	<u>2021</u>
14	28 Jul	Data Collection and Management	DoH Data Library, tbc	REGISTER	2022
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