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Customising REDCap® for Clinical Registries

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AGENDA

- What is REDCap?
- What is Clinical Registry?
- Why customise?
- What can you customise?
- Findings – Lesson Learned
- Q/A

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ABOUT REDCap™

- Developed and Licensed by Vanderbilt University Medical Center, USA
- Free to non-profits around the world (not open source!)
- Must be installed by the institution's IT staff and at the institution's infrastructure
- Only the institution's own staff could access the REDCap code

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ABOUT

Clinical Registry

Clinical registries are databases that systematically collect health-related information within an overall governance and management structure on individuals.

Clinical quality registry (CQR) collects quality indicators and assess them and report this back to institutions and/or clinicians.

"Monash University manages 45 of the 111 national registries and is the largest academic provider of CQRs in Australia, and one of the largest internationally."

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WHY

CUSTOMISE?

ABOUT

Helix

Helix is a team at Monash University that specialise in health (sensitive) data.

Helix build and support clinical registries and clinical trials applications at Monash University, majority for the School of Public Health and Preventive Medicine (SPHPM).

We support and maintain the REDCap™ instance at Monash University.

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REDCap Con 2018

5 years and 2 month ago ....

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REDCap Developer Tools:
Documentation for Plugins, Hooks, & External Modules

Introduction to Plugins, Hooks, & External Modules

This is the official documentation for developers of hooks, plugins, and external modules in REDCap. It provides an introduction to the basics of what hooks, plugins, and modules are and how they might be used. It includes FAQ pages for frequently asked questions regarding hooks, plugins, and modules, and it also serves as documentation for all the official REDCap developer methods that may be used in a REDCap hook, plugin, or module.

REDCap hooks, plugins, and modules serve the purpose of allowing one to extend and add to REDCap's functionality without having to modify the REDCap base code. In the past, if some institutions wanted to add a feature or functionality to REDCap, they would have to modify the REDCap code in order to do so. However, this becomes hard to maintain over time since such changes will thus have to be made for each subsequent upgrade performed afterward. Some institutions had even modified REDCap so much that at some point it became impossible for them to upgrade REDCap any further, which meant that they ended up being stuck on that version of REDCap forever. So essentially, modifying the REDCap base code is not viewed as a very prudent thing to do. But hooks, plugins, and modules allow one to add new features and functionality to REDCap without having to modify the REDCap code. Additionally, another benefit of utilizing hooks, plugins, and modules is that their code does not have to be modified as you upgrade to new versions of REDCap.

What are hooks, plugins, and modules? How are they different?

REDCap hooks, plugins, and modules are very different animals, so to speak, and serve very different purposes. They are all PHP scripts utilized by REDCap, in which a programmer will write the hooks, plugins, and modules, and then those scripts will be placed on the REDCap web server so that they can be accessed by REDCap. Hooks, plugins, and modules are meant to be written by a programmer who is part of (or associated with) the REDCap team at the local institution. Hooks, plugins, and modules have the ability to access both your web server and database server directly, so they will have access to your web server's file system and all REDCap data stored in MySQL. Thus only trusted, high-level individuals should be given the ability to author hooks, plugins, and modules. While the REDCap API is a user-level feature, hooks, plugins, and modules are not. Although they may indeed get used by end-users, hooks, plugins, and modules will not be created by end-users. (If hooks, plugins, or modules are ever created by technically knowledgeable end-users, which is not advised in most cases, it is highly recommended that a programmer associated with the REDCap team at the local institution review the code thoroughly for security and quality purposes before the hook or plugin is placed on the REDCap web server.)

A **REDCap plugin** is essentially a custom PHP script or a collection of PHP scripts (and may also include HTML, CSS, or Javascript files) that exist independently of - but work in conjunction with - the official REDCap base code. Plugins allow developers to build scripts that connect to the REDCap framework from outside of REDCap in order to utilize REDCap's many resources. This includes REDCap's authentication, the database connection to REDCap's MySQL back end, and all available PHP variables, constants, and functions that are defined by and utilized by REDCap. Plugins are autonomous scripts that live outside of REDCap. Thus plugins can never alter the look or behavior of existing REDCap pages. Plugins allow you to take advantage of REDCap's resources in a webpage that sits outside of REDCap proper. Plugins can also render REDCap's web page headers and footers on your custom plugin web page so that it appears as if you are actually in REDCap proper by having your page framed with the official REDCap header/footer, which is completely optional. So plugins can look and act as if they are a REDCap page,

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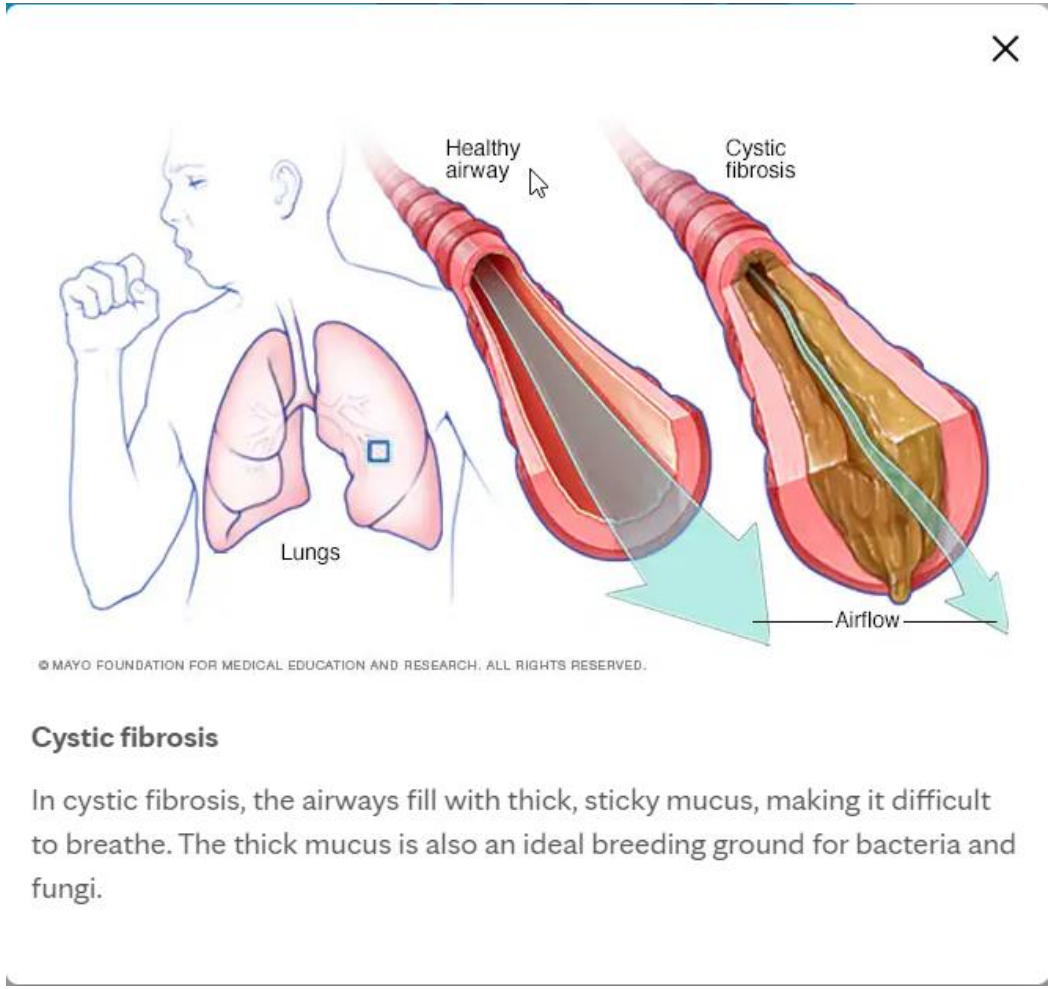
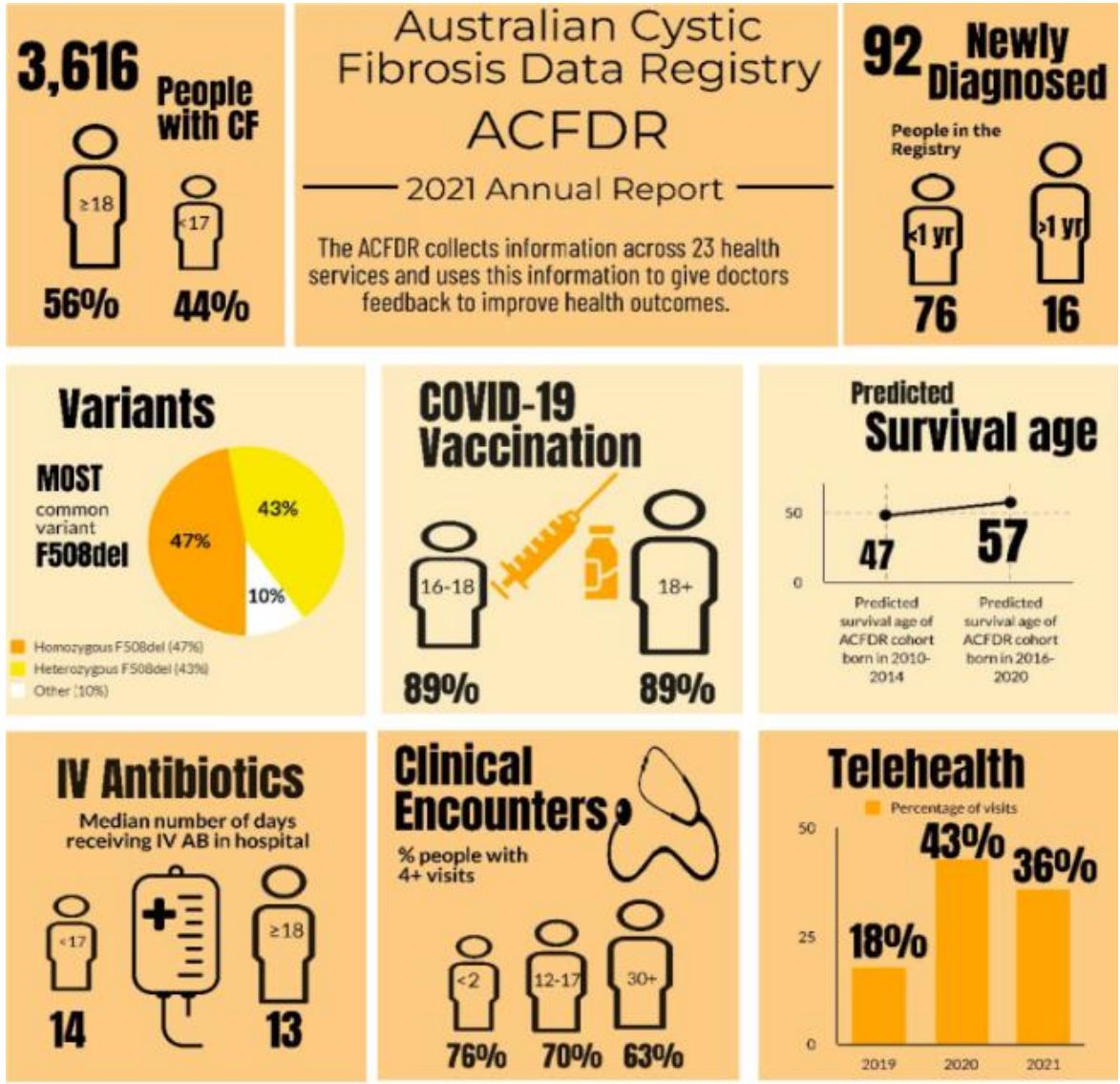
Australian Cystic Fibrosis Data Registry (ACFDR)





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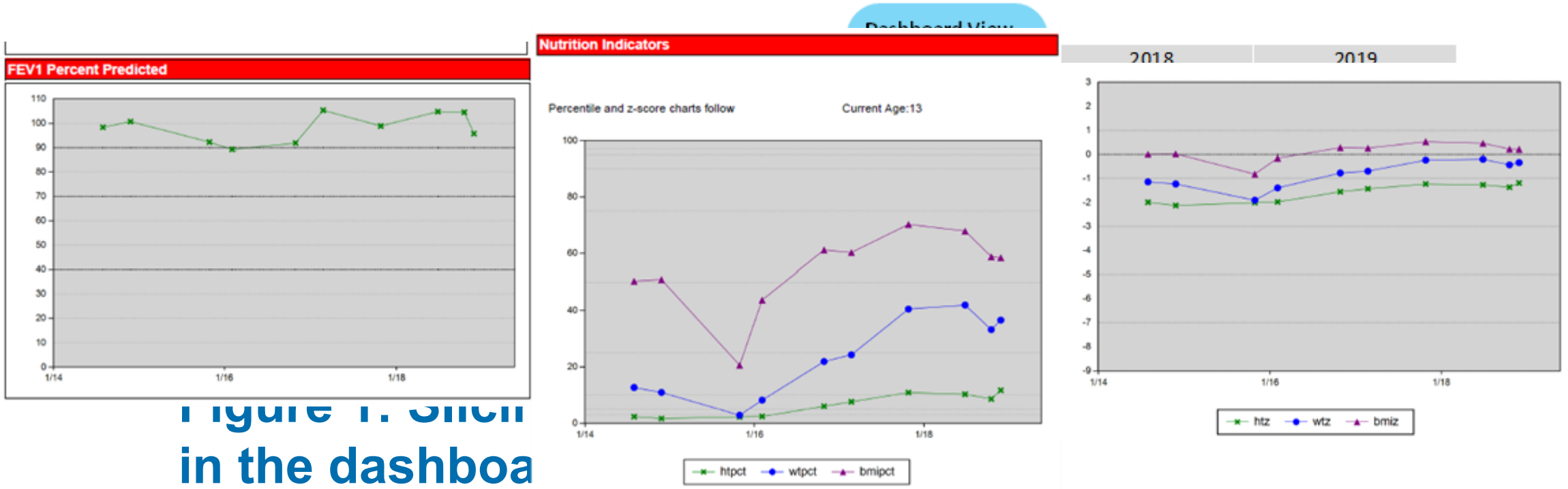

Figure 1. Slicer
in the dashboa

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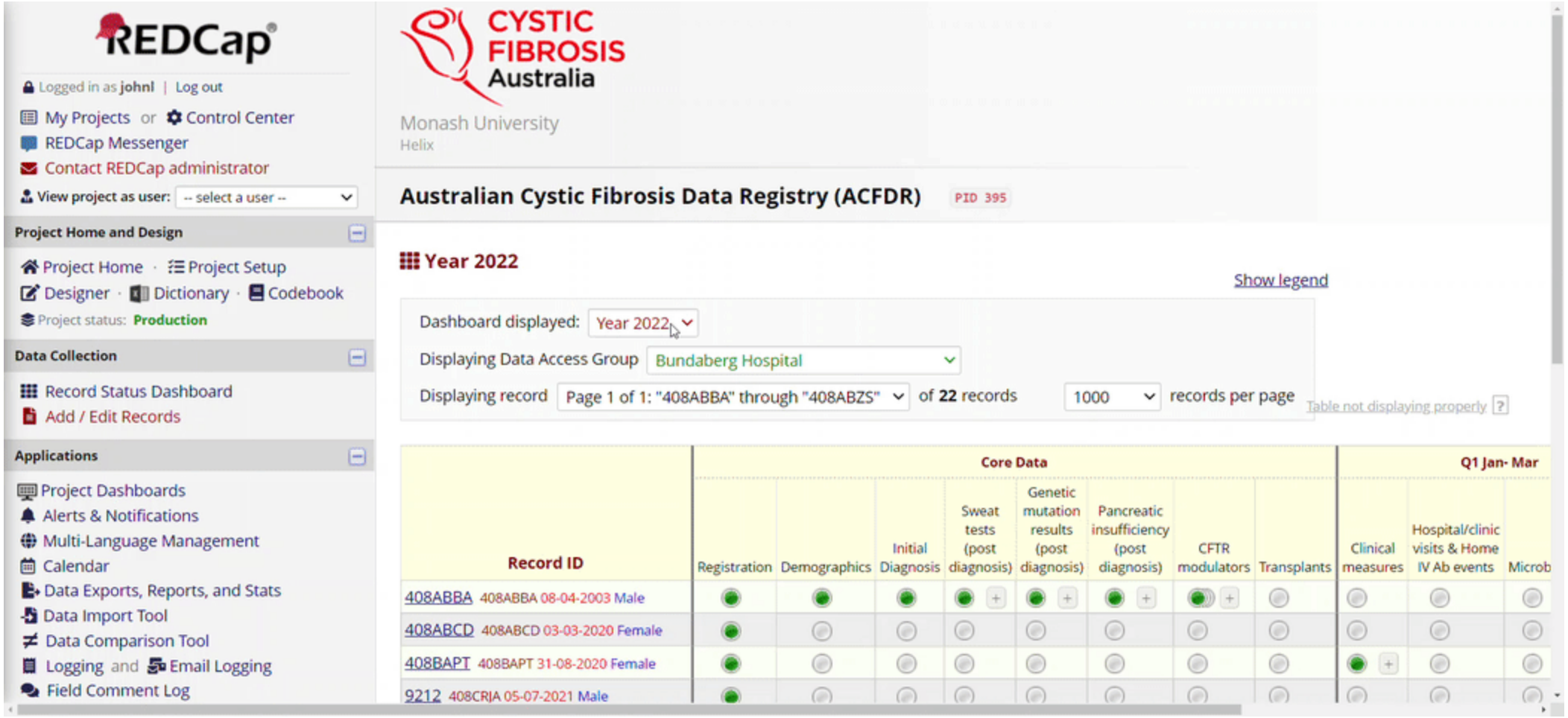
WHAT

CAN YOU CUSTOMISE?

Australian Cystic Fibrosis Data Registry (ACFDR)



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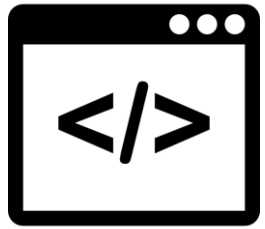
CYSTIC FIBROSIS Australia

Australian Cystic Fibrosis Data Registry (ACFDR)

ACFDR Project Specific Features - 1.0

5 months or 190 hours (~24 days)



Around 14,000 lines of code in 22 files

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FINDINGS

LESSON LEARNED

Advantages:

- Good alternative to custom build software as it is faster to develop and deploy.
- Some changes can still be DIY.
- Able to utilise other REDCap features, e.g. User Management, Data Import, Data Quality Check, and Data Exports.
- Meet all requirements that the user needs.

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Disadvantages:

- Other changes may require IT involvement (impact analysis, security assessment, etc).
- Loose the flexibility to DIY.
- Need to be tested prior to every REDCap upgrade or every PHP upgrade or server changes

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Lesson Learned

- Use the out of the box functionality as much as possible.
- Consult or Search the REDCap community.
- Start small.
- Break it down to smaller modules.
- Think generic (reusable / configurable).

REDCap Repo

Repository of External Modules

Module title and description	First Submitted	Most Recent Update	Downloads (Installs only - Excludes updates)	
Auto Complete Form Status Based on Required Fields *(auto_complete_form_status_on_required_fields_v1.3)* View on GitHub View Stats *Description:* This external module will set the Form Status 'Complete?' dropdown automatically to 'Complete' when all required fields are entered, and set to 'Incomplete' when not all required fields are entered. *Author:* John Liman (Monash University)	2021-08-24	2023-06-08	183	Download Already downloaded

Showing 1 to 1 of 1 entries (filtered from 292 total entries)

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ANZ REDCap Community – 2022

THANK YOU

CONTACT US AT HELIX-ENQUIRIES@MONASH.EDU

WEBSITE: https://www.monash.edu/researchinfrastructure/helix