

Rheumatic heart disease: an Australian overview and RHDAustralia resources

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Case presentation



- 29 year old Indigenous man. Careflight transfer to RDH from community. Previously well. Football player, has wife and 2-yr old daughter, non-smoker, non-drinker.
- Presented with severe, progressive febrile illness, initially managed as community-acquired pneumonia:
 - Fever up to 38.5; sore throat, productive cough, haemoptysis, central pleuritic chest pain, nausea, vomiting, diarrhoea, right elbow then shoulder pain
- On arrival: unwell, in pain, 37.9, sinus tachycardia (120), tachypnoea (30). Left knee effusion. Systolic murmur audible. Chest clear.

- Hb 125, WCC 30
- troponin 320
- CRP 334
- ASOT 426
- Bili 23, ALT 125
- Cr 399, peaked at >600
- ECG: sinus tachycardia
- CXR: enlarged heart size, no failure



Case presentation

- Initial working diagnoses:
 - ARF
 - APSGN
 - DDx: infective endocarditis
- Empirical ceftriaxone + vancomycin initially for possible infective endocarditis
- Aspirin 900mg q6h (~50mg/kg)
- Careful fluid management
- Contact tracing – BPG for household contacts

Evolution of echocardiographic findings

- Initial bedside echo in ED, 23/12/2016:
 - Mitral Valve: Rheumatic mitral valve leaflets with at least moderate eccentric incompetence.
 - Aortic Valve: Mobile trileaflet valve with mild incompetence.
- 26/12/2016:
 - Mitral Valve: Rheumatic mitral valve appearance with severe eccentric mitral incompetence.
 - Aortic Valve: Minor thickening of the leaflet tips. Moderate incompetence.
- 4/1/2017
 - Mitral Valve: Thickened, rheumatic mitral valve leaflets with moderate to severe MS (mean PG 10.2mmHg) and moderate MR.
 - Aortic Valve: Thickened, rheumatic aortic valve with mild AR. No stenosis.
 - 10/4/2017

Progress

- Stormy hospital course with severe acute renal failure, progressive carditis, AF, later also hospital-acquired pneumonia
- From day 3 - prednisolone 80mg day with slow wean (1 recurrence of pericarditic pain during initial wean)
- Post discharge:
 - Excellent adherence to monthly BPG
 - Valve surgery July 2017
- Key points
 - Atypical features; comorbidity
 - ARF recurrence on background of existing unrecognised RHD vs severe first episode
 - Major morbidity impact for young family

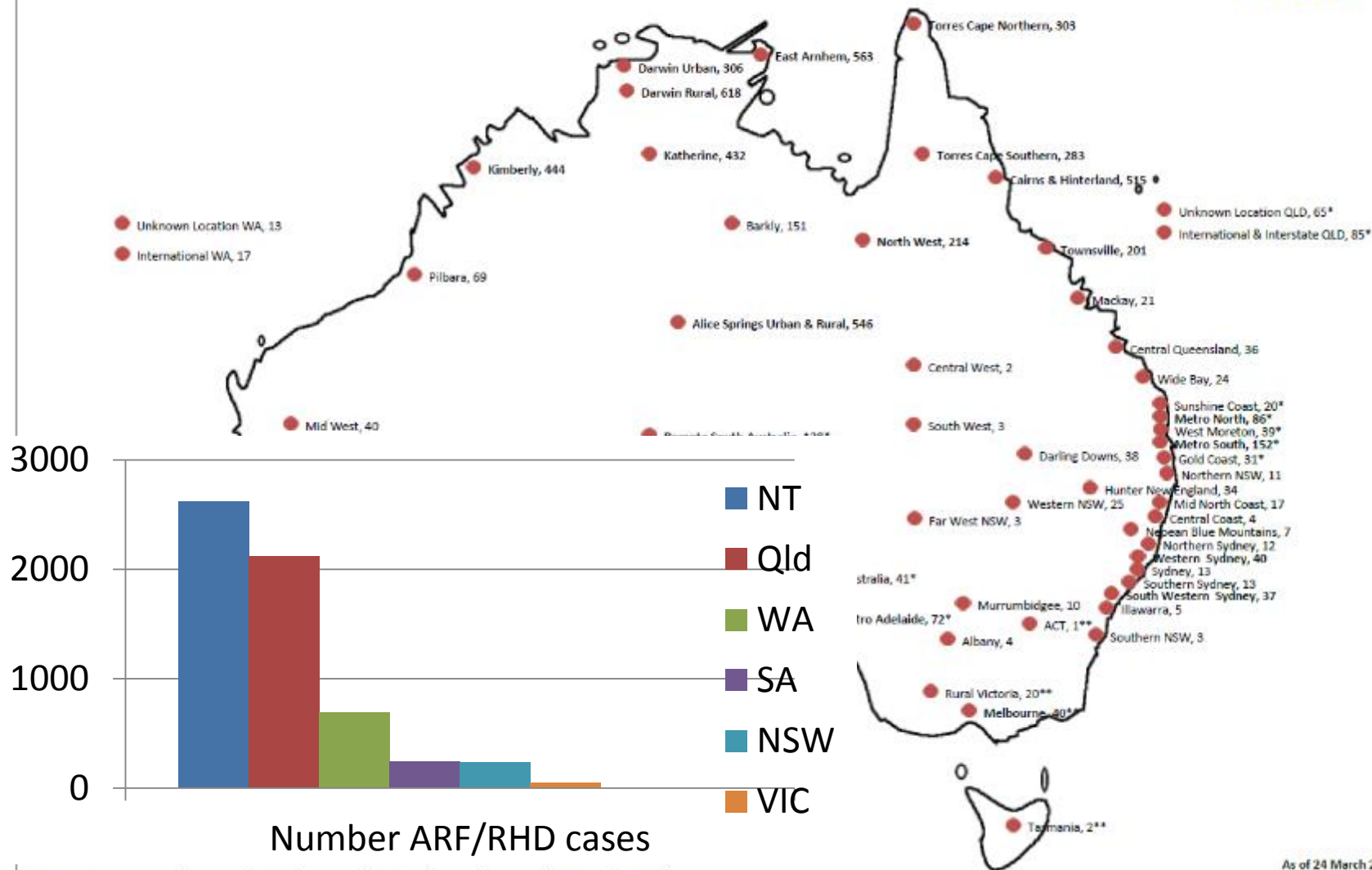


33 million people living with RHD.

>300 000 deaths annually, most among in people <30 years.

Carapetis JR, Beaton A, Cunningham MW, et al. Acute rheumatic fever and rheumatic heart disease. Nat Rev Dis Prim 2016; 2: 15084.

Number of **known** patients with ARF and RHD in Australia by Health Districts



Roberts KV, Maguire GP, Brown A...Carapetis J. Rheumatic heart disease in Indigenous children in northern Australia: differences in prevalence and the challenges of screening.
Med J Aust 2015; 203(5): 221 e1-7.

4 Cases of rheumatic heart disease (RHD) in Indigenous children from four remote regions of northern Australia

	Top End	Central Australia	Far North Queensland	Kimberley	Total	<i>P</i> (χ^2)
Definite RHD						
New cases	7	4	5	2	18	0.06
Known cases	8	2	1	5	16	
Prevalence	15.0/1000	6.7/1000	4.7/1000	8.9/1000	8.6/1000	
95% CI	8.4–24.6	2.5–14.5	1.7–10.2	3.6–18.2	6.0–12.0	
Borderline RHD						
New cases	17	14	23	8	62	0.41
Known cases	1	1	2	0	4	
Prevalence	18.0/1000	16.8/1000	19.8/1000	10.2/1000	16.7/1000	
95% CI	10.7–28.3	9.4–27.5	12.8–29.0	4.4–20.0	13.0–21.2	
Total screened	1000	895	1265	786	3946	

NT: 8.5 per 1000 (passive surveillance); up to 15.0 per 1000 (active surveillance)

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Rheumatic Heart Disease is 100% Preventable

[Things you need to know ➡](#)

What is Acute Rheumatic Fever?

There is currently no single test to diagnose Acute Rheumatic Fever. Diagnosis is a doctor's decision based on the identification of a number of known symptoms.

[Find out more ➡](#)

What is Rheumatic Heart Disease?

Rheumatic Heart Disease (RHD) is chronic damage to the valves in the heart caused by repeated cases of Acute Rheumatic Fever (ARF). This can be prevented.

[Find out more ➡](#)

How is it Prevented?



















The prevention of RHD can be implemented at a number of different stages. This includes Primordial, Primary, Secondary and Tertiary prevention.

[Find out more ➡](#)

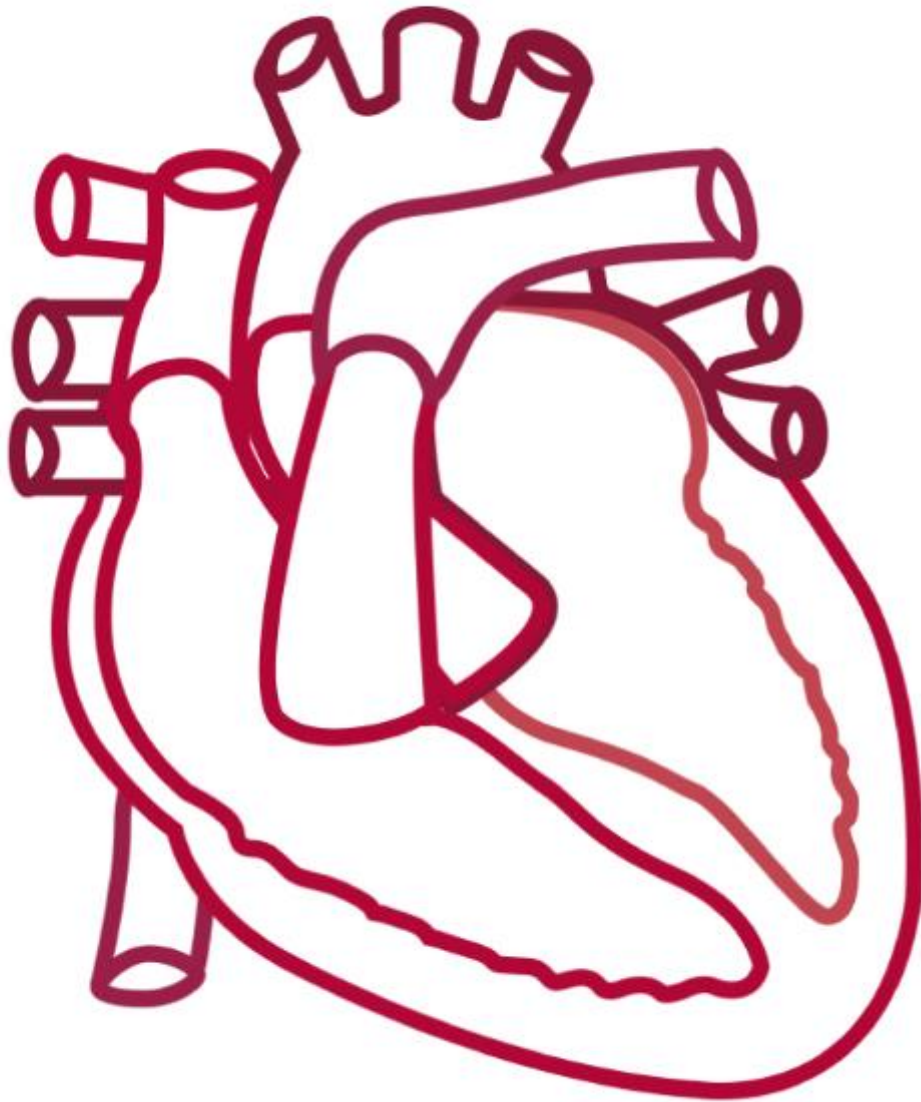
How is it Diagnosed & Treated?

The prevention of RHD can be implemented at a number of different stages. This includes Primordial, Primary, Secondary and Tertiary prevention.

[Find out more ➡](#)

Title	Link	File
Patient Story - SA Health Rheumatic Heart Disease Awareness		
Rheumatic Heart Disease publications Australian Indigenous HealthInfoNet		
Benny's Journey in English - Children's cartoon		
Benny's Journey in Torres Strait Kriol - Children's cartoon		
Eddie Masina with a Stayin' Strong health message		
Take Heart - What is Rheumatic Heart Disease		
BPG Injection sites and methods video		
Administering BPG: Injection sites and methods - Information flyer		
Clinical Impact and Costs of Echocardiographic Screening for Rheumatic Heart Disease - Editorial		
Rheumatic Heart Disease Severity, Progression and Outcomes: A Multi-State Model		
Echocardiographic Screening for Rheumatic Heart Disease in Indigenous Australian Children: A Cost-Utility Analysis		
Paper Tracker radio show – Prof Carapetis on rheumatic heart disease [Radio program 249]		
Invasive Group A Streptococcus (iGAS) infection information flyer		
Video of Q&A Panel Event 2016 - Forgotten but not gone: Why does a third world disease exist in Australia		





ARF

Acute rheumatic fever is an **illness caused by a reaction** to a bacterial infection with group A Streptococcus which can affect the heart joint, brain and skin, cause fever, joint pain and other symptoms, **lead to hospitalisation**, cause heart damage called rheumatic heart disease.

RHD

Rheumatic heart disease is **damage to the heart** caused by one or more episodes of acute rheumatic fever. When the heart is damaged in this way, the heart valves are unable to function adequately, and heart surgery may be required. RHD is a chronic, disabling and sometimes **fatal disease**.

NEARLY 100%

of all recorded new or recurrent cases of ARF are:



AMONG INDIGENOUS PEOPLE

PER 100,000



The incident rate of ARF is approximately 53 cases among indigenous people and less than 1 case for non indigenous

8x MORE



Indigenous people are up to **8 times more** likely than other Australians to be hospitalised for ARF and RHD

20x MORE

Indigenous people are **20 times more** likely to die from ARF and RHD



GOOD NEWS

Policy and research initiatives to understand and reduce the burden of RHD are **underway**.

The knowledge and opportunity exists to significantly reduce morbidity and mortality associated with RHD and, ultimately, **eliminate RHD in Australia**.



Having problems?

T: +61 8 8946 8654

E: info@rhdaustralia.org.au

Monday - Friday || 8:30 am - 4:30 pm

ENGLISH ▾

eLearning Modules



Register Here

Please use your username NOT your email address to sign in

Please do NOT USE INTERNET EXPLORER

NEW USERS please click on the word 'register' next to 'lost password'

If you are having trouble logging in or viewing the modules please check the following:

[Lost password - Register](#)

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[Privacy Policy](#)

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E-LEARNING MODULES

Learning Management System

Health Care Worker Package

- 5 short learning modules provide the fundamentals on understanding of best practice approaches to the prevention, diagnosis and management of ARF & RHD

Clinician Modules

- 15 modules provide a more detailed understanding of best practice approaches to the prevention, diagnosis and management of ARF & RHD
- CAN and RHAC Accredited modules and CPD points
- <http://www.rhdaustralia.org.au/e-learning-discussion-forum>

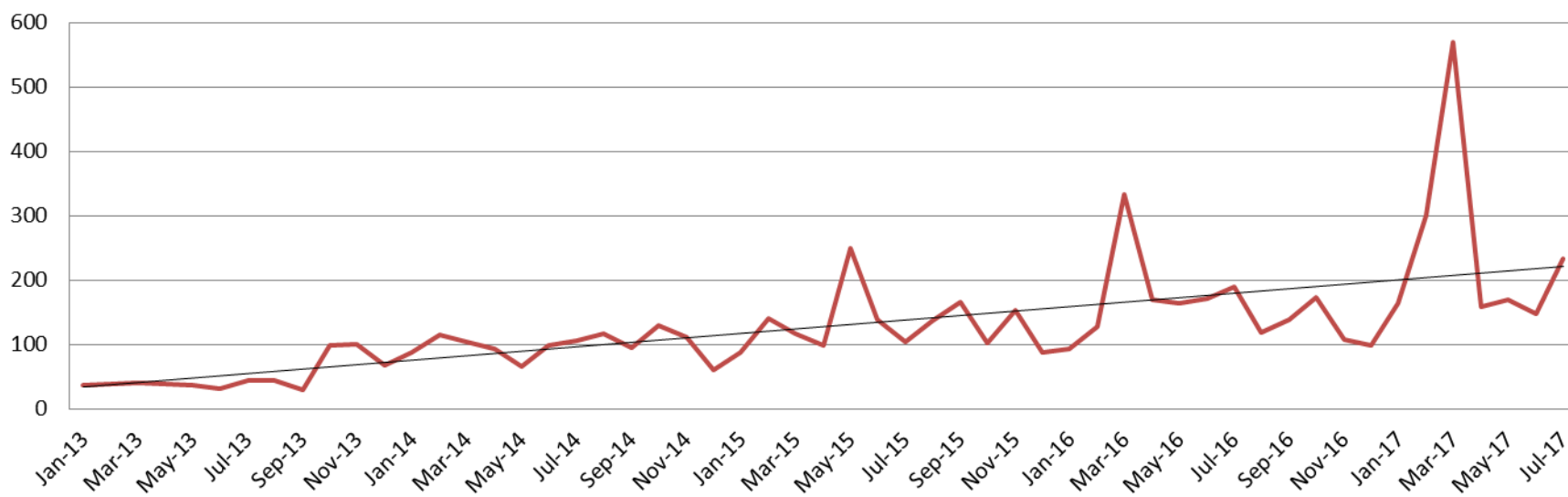
SMART PHONE APPS



Guideline & Diagnosis Calculator APP



Downloads of RHDAustralia Diagnosis Calculator & Guidleine APP by month



Treatment Tracker is a smartphone reminder app for young people on secondary prophylaxis. Designed to:

- ✓ Remind users of their injection due date
- ✓ Motivate them to get their injections on time

Take Heart app, Take Heart and Laynhapuy Community



Fight the Fever app, Auckland District Health Board, New Zealand

Home

You are on a 21 day cycle

OVERDUE INJECTION:
protection low
Injection was due 15 - 19 June

Request Appointment

Get your injection?
LgoIt

PROTECTION TODAY

LOW

DAYS SINCE LAST INJECTION

21

PROTECTION OVER LAST 6 MONTHS

high

low

none

Dec Jan Feb Mar Apr May

Appointment Feedback

Close

All feedback is optional and anonymous. The person receiving it does not know who sent it.

Pain while needle going in

Pain afterwards

How did you feel with the person

Overall rating

Nurse Rita

Comment Didn't even use my name.

Send feedback

Contact Service

You are on a 28 day cycle

change service

Greenlane

HOURS

Mon-Fri:
7.30-4pm
5.30-7pm
Weekends:
8am-4.30pm

LOCATION

A+ Links Home Health
Building 17
Greenlane Clinical Centre

PHONE

021 933 101

Call Service

MaryLou

Create My Profile

First Name

Barry

Last Name

Heartkid

Date of Birth

09-Mar-2003

Next

injections

Progress

Store

Users

MaryLou

Your Treatments

When was your last injection?

Last injection date

☒ I don't remember

Next

injections

Progress

Store

Users

MaryLou

Choose Your Avatar

☒ Male ☐ Female

Done

injections

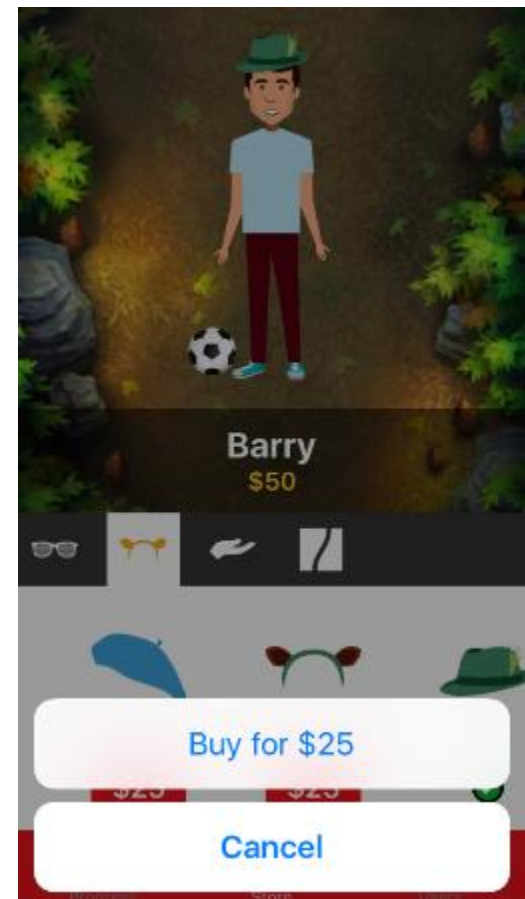
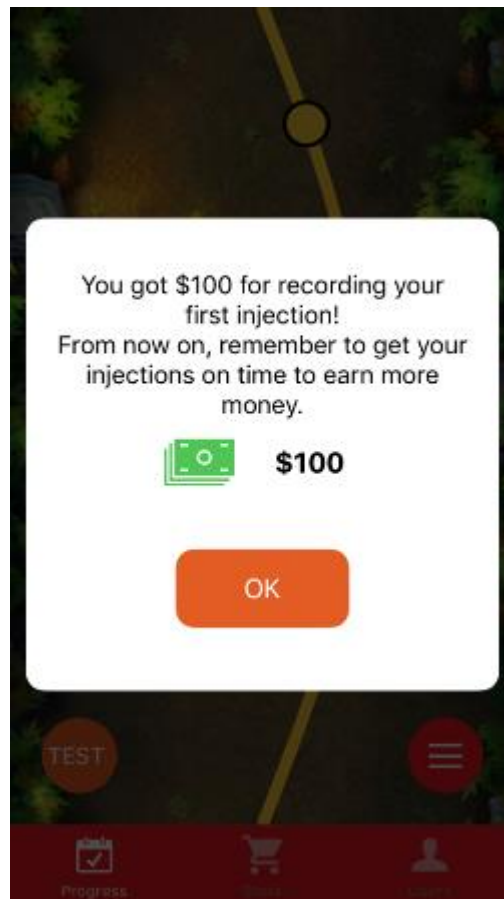
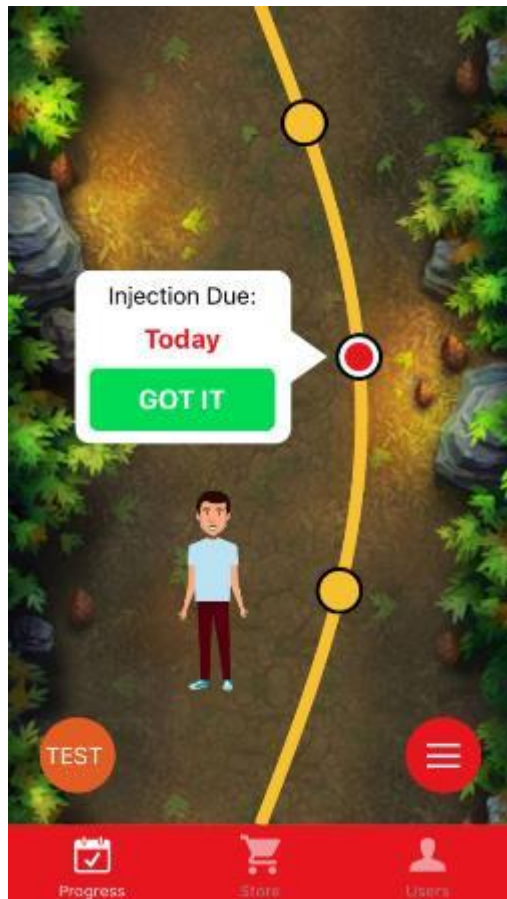
Progress

Store

Users

RHD Australia

menzies
school of health research



Next steps



- Phase 2 testing: health professionals and patients
- Limited pre-launch field testing



- RHDA
 - Claire Boardman
 - Sean Rung
 - Cath Halkon
 - Bart Currie