



Government of Western Australia  
WA Country Health Service



# RHEUMATIC HEART DISEASE IN PREGNANCY

Cheryl Liddiard Clinical Nurse Specialist  
WA RHD Register & Control Program

WA Rural  
Health  
Conference  
11/03/2023



Government of **Western Australia**  
WA Country Health Service



Hello, I am Cheryl Liddiard

I am privileged to live and work  
on Whadjuk Boodja, the lands of the  
Noongar Nation here in Perth





# Rheumatic heart disease in pregnancy

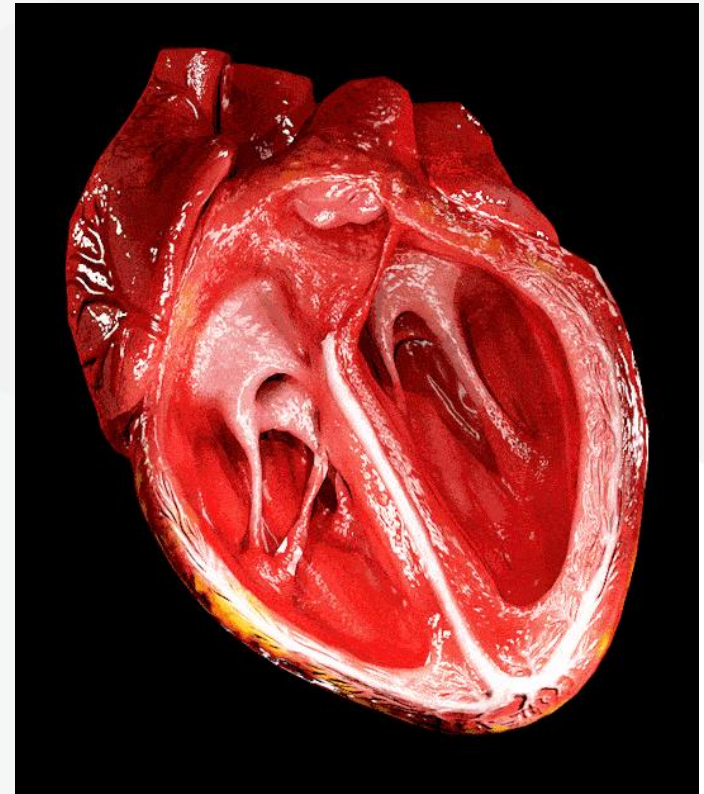
- Brief overview of rheumatic heart disease (RHD)
- Describe the care for women with rheumatic heart disease in pregnancy
- What can you do to support pregnant women and families in your care with RHD
- Share how WA RHD Register can support you with caring for people with RHD





## Rheumatic Heart Disease (RHD)

chronic damage to heart valves caused by a single or recurrent episode(s) of ARF.



### STENOSIS



DOESN'T OPEN PROPERLY



NORMALLY OPEN

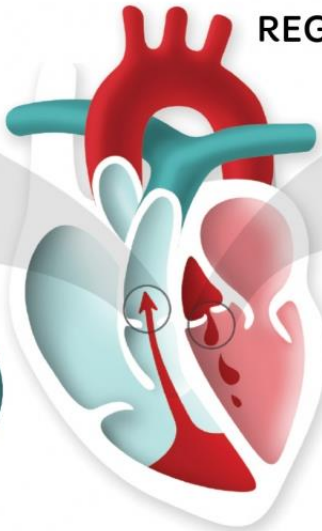
### REGURGITATION



DOESN'T CLOSE PROPERLY

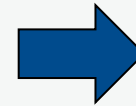


NORMALLY CLOSED





# Rheumatic heart disease



- **P1:** Severe RHD, <5yo, multiple recurrences or pregnant high risk
- **P2:** Moderate RHD
- **P3:** Borderline/ Mild RHD / ARF only

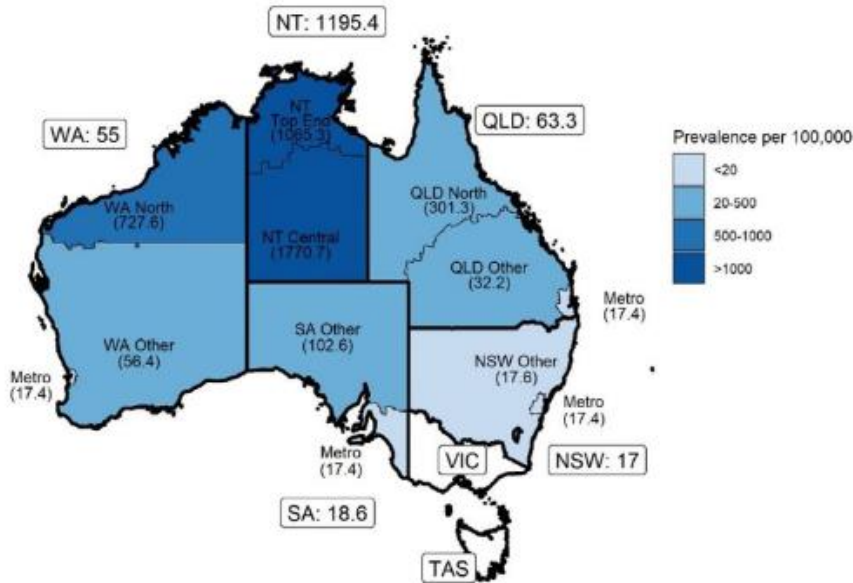


# Burden of disease

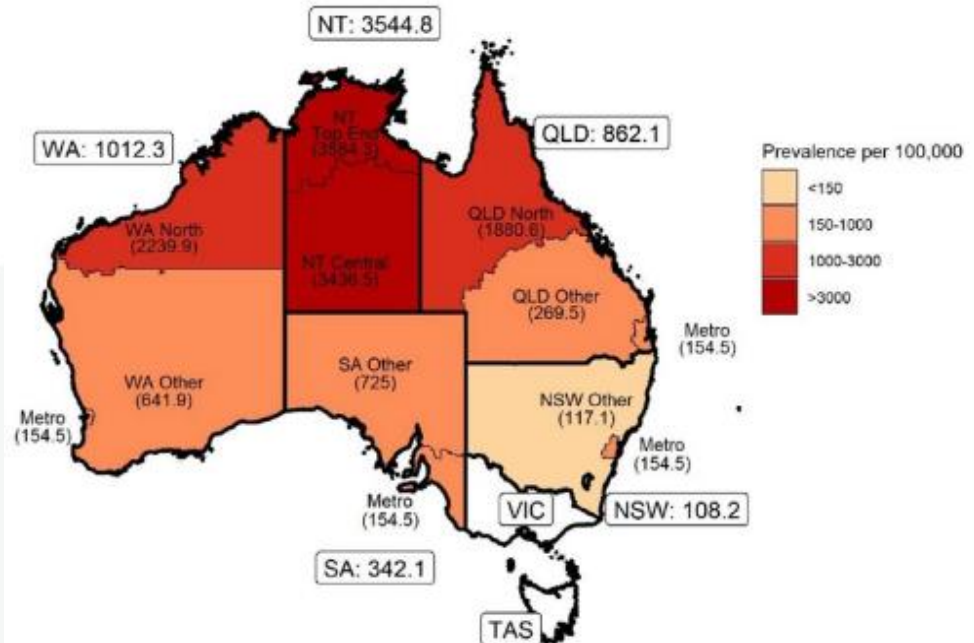
**Figure 4.** Total population (A) and Indigenous (B) age-standardized prevalence (per 100 000) of acute rheumatic fever or rheumatic heart disease in five Australian jurisdictions, by Indigenous Region Categories.

Within jurisdictional geographic regions are aggregations of 33 separate Indigenous Regions provided by the Australian Bureau of Statistics (see Data S1). NSW indicates New South Wales; NT, Northern Territory; QLD, Queensland; SA, South Australia; TAS Tasmania; VIC, Victoria; and WA, Western Australia.

## A Total population



## B Indigenous population



Katzenellenbogen JM, Bond-Smith D & Seth R et al., 2020 Contemporary incidence and prevalence of rheumatic fever and rheumatic heart disease in Australia using linked data: the case for policy change, *J Am Heart Assoc*, 9, 1-26

All Registers: >9,000 patients  
WA Register: >1,300 patients

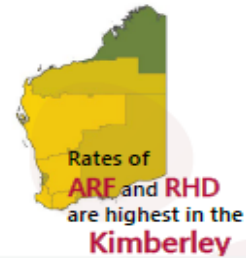


# Fast facts

## ARF & RHD IN WESTERN AUSTRALIA

2016 - 2020

**97%** of the  
**ARF** reported  
in Western Australia  
is among Aboriginal  
and Torres Strait  
Islander people



Most  
**HEART VALVE  
SURGERIES**  
occur among people  
aged **25-34 YEARS**

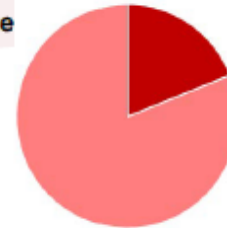


Acute rheumatic fever and  
rheumatic heart disease are  
**PREVENTABLE** and  
**MANAGEABLE**

**MORE THAN 1300**  
PEOPLE ARE LIVING  
WITH ARF OR RHD  
IN WESTERN  
AUSTRALIA



**19%** of people  
have  
**SEVERE** disease at  
**FIRST RHD**  
diagnosis





# Women with RHD during pregnancy

Hearts with RHD poorly tolerate the increasing demands due to compromised heart function

- blood volume 30-50%
- heart rate by 15 beats per minute
- cardiac output

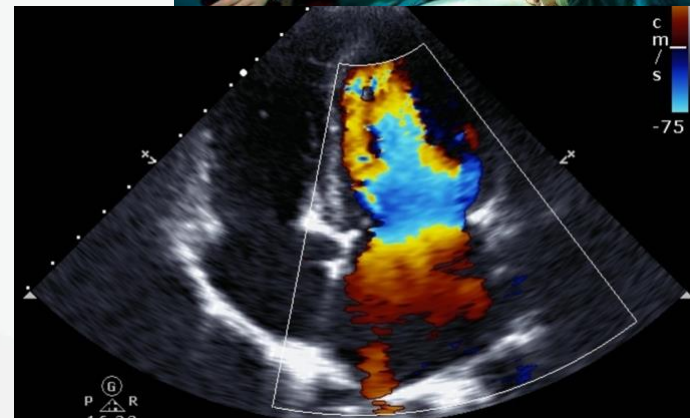
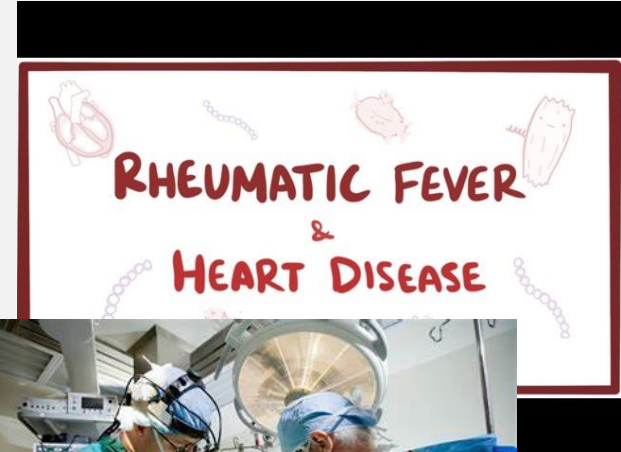






# RHD conditions

- A woman's journey often starts well before pregnancy
- Known moderate or severe RHD – most at risk
- RHD could be silent





# RHD – mitral stenosis

Most concerning valve lesion

## Severe mitral stenosis

With increasing cardiac demand

- obstruction worsens
- heart failure
- pulmonary oedema
- Atrial fibrillation

### Normal and adverse cardiovascular clinical symptoms and signs during pregnancy

Usual symptoms/  
signs of  
pregnancy

- Breathlessness on exertion
- Intermittent palpitations
- Mild fluid retention
- Mildly elevated jugular venous pressure
- 3rd heart sound
- Soft systolic murmur
- Resting tachycardia

Symptoms/signs  
suggestive of  
cardiac pathology

- Extreme breathlessness
- Chest pain
- Orthopnoea, paroxysmal nocturnal dyspnoea, nocturnal cough
- Tachycardia >100 bpm
- 4th heart sound
- Harsh systolic or diastolic murmurs
- Pulmonary oedema
- Pleural effusion

Adapted from Thorne et al.<sup>4</sup>



## RHD – prosthetic valves

Associated with higher risk in pregnancy

### Anticoagulant therapy

Very challenging to manage

- heart failure
- Atrial fibrillation
- Infective endocarditis



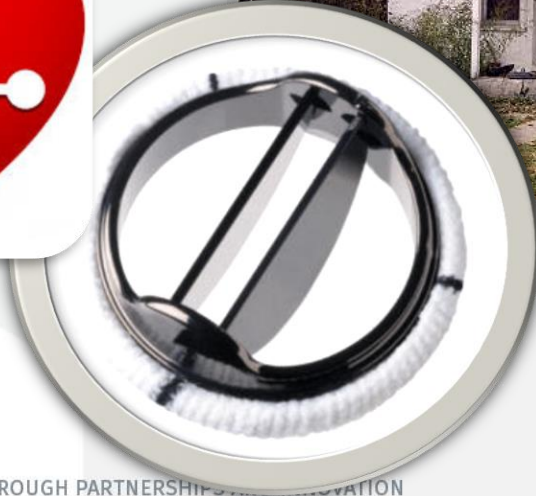
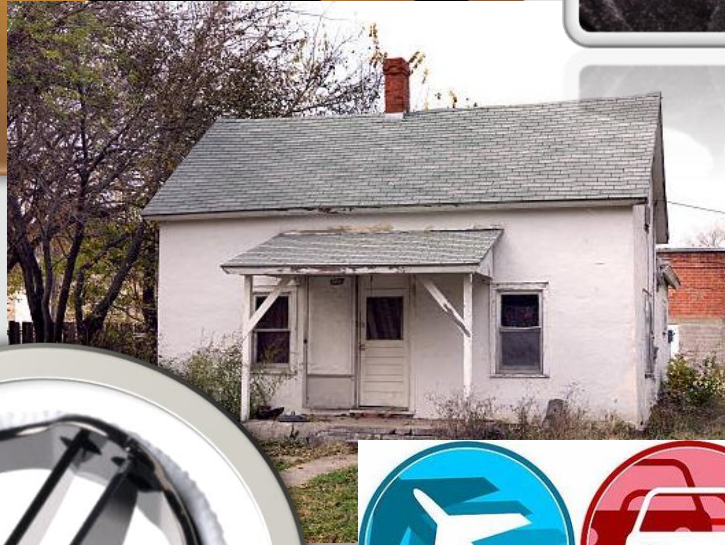
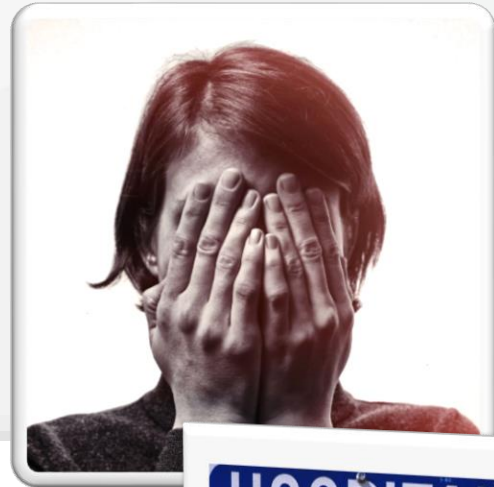
Mechanical and Tissue Mitral Valves

**Warfarin**





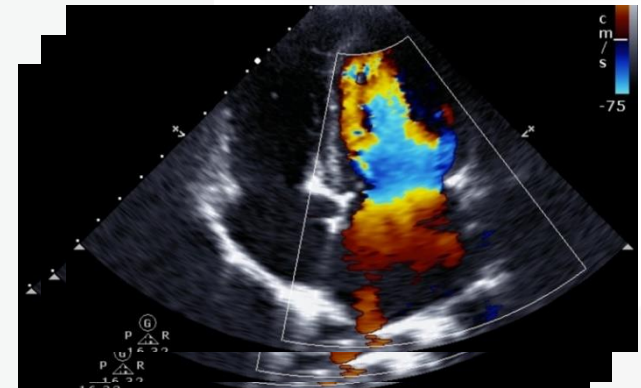
# Factors impacting pregnancy





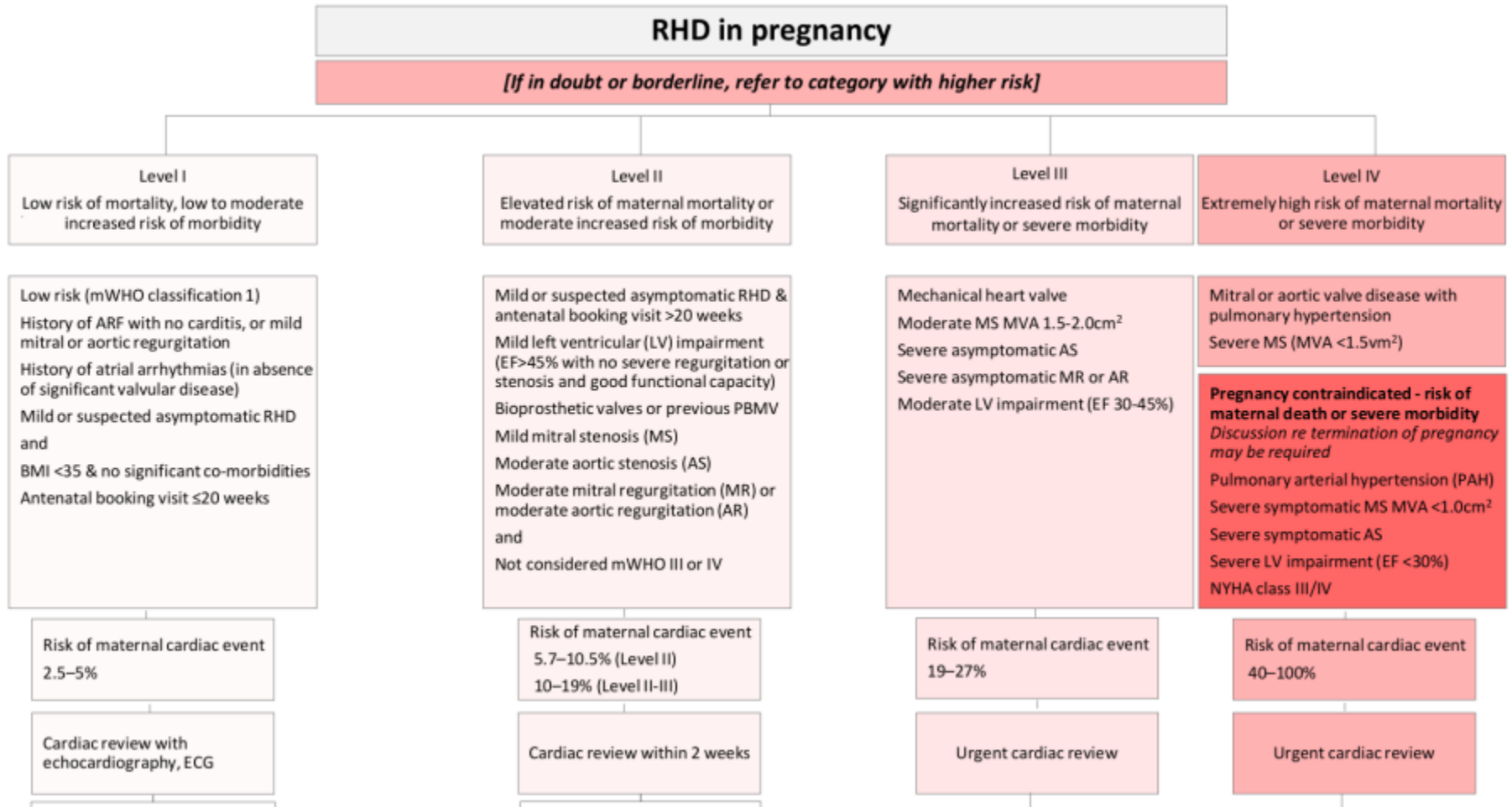
# RHD in pregnancy – working in partnership

- Give the best chance for safe pregnancy
- Screen for cardiac illness – history
- Auscultate the heart – ?murmur
- Refer to cardiology – echocardiogram
- Planning the pregnancy journey
  - Delivery location
  - Surveillance plan / follow up
  - Medications
  - Continue secondary prophylaxis





# Women and girls with RHD – Pregnancy focus



Care pathways and referral algorithm for pregnant women with RHD <https://www.rhdaustralia.org.au>



# Life course approach to care

Early review - <20weeks for heart assessment of heart valves



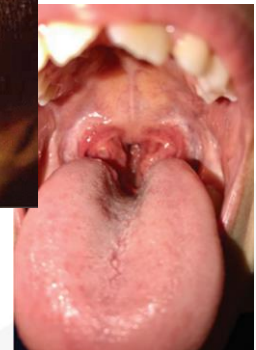
Refer to the ARF RHD guidelines and pathway algorithm

The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease (3rd edition)



Primary prevention

Oral health





# BPG prophylaxis

- Safe during pregnancy and breastfeeding
- Continue BPG every 21-28 days during pregnancy







# Life course approach to care

After delivery – high risk

Post delivery review

Contraception –  
preconception education

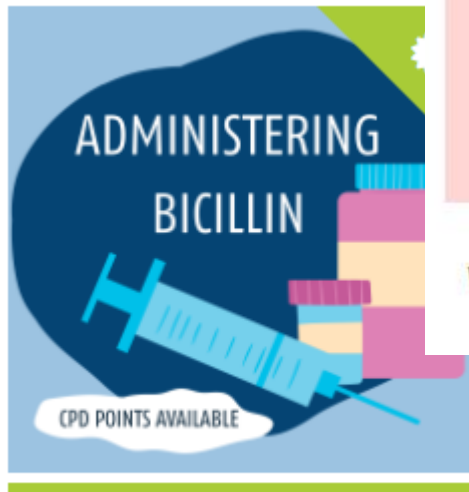




# How can you help?



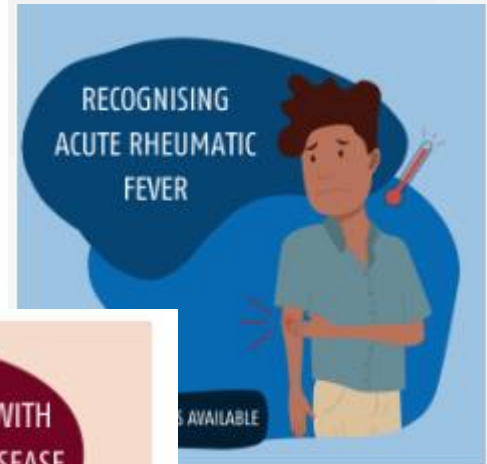
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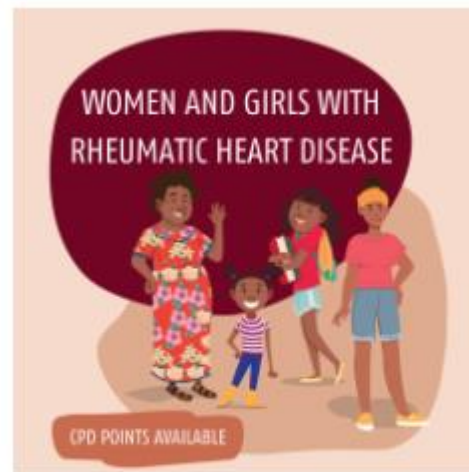
ADMINISTERING BICILLIN



WOMEN /  
RHI



NG ACUTE RHEUMATIC  
FEVER



WOMEN AND GIRLS WITH  
RHEUMATIC HEART DISEASE

Not sure? Call us! **1300 622 745**



# Sharing a heartbeat 2 - English



[Sharing A Heartbeat 2 - English - YouTube](#)



# How can we help?

**RHD Prophylaxis Follow-up Report**  
**Part 1 of 3 - Follow-up and deliver BPG injections to these patients (Benzathine benzylpenicillin G, also known as Bicillin LA ®)**

**How well is your site delivering BPG injections?**

What percentage of patients receive 80% or more of their BPG injections?	Your site 2021:	11%
	WA 2021:	21%
	Australia 2020:	35%

**How many patients are at your site?** 60

**Instructions:**  
 1. Please select a paper type: (A3 or A4).  
 2. Click on 'Print-mode' to set for printing.  
 3. Click on 'Print' and choose your printer then click 'OK'  
 4. To revert back to normal, click on 'Full report-view'

1. Please select paper type:

2. Print-mode | 3. Print | 4. Full report-view

Please note that in the table a comma (,) means no date has been recorded. Also in the BPG column, blank results they are a new patient and did not receive BPG injections last year.

Date of extract: 16/11/2022

Family and given name	Date of Birth	UMRN	Date last prophylaxis	Date next prophylaxis	Proposed date for prophylaxis to cease	BPG
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## Acute Rheumatic Fever and Rheumatic Heart Disease Register

**Login 2**

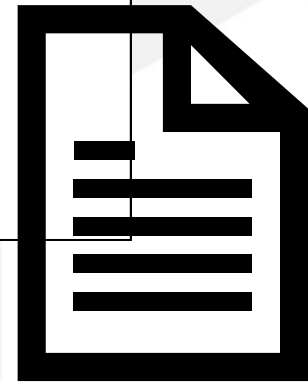
User Name:

Password:

RHD Register enquiries email: [RHD.register@health.wa.gov.au](mailto:RHD.register@health.wa.gov.au)

"In Australia, ARF and RHD are highly prevalent among Aboriginal and Torres Strait Islander communities, mostly affecting young people. Aboriginal and Torres Strait Islander people are up to eight times more likely than non-Aboriginal and Torres Strait Islander people to be hospitalised for ARF and RHD, and nearly 20 times as likely to die." -

*National Heart Foundation of Australia and the Cardiac Society of Australia and New Zealand*



Provide advice and support





# Take home messages

- You can make a difference by working in partnership for culturally safe and supportive care
- A woman's RHD journey starts before pregnancy
- Mitral stenosis is the most concerning valve lesion
- RHD can be silent – be vigilant with vulnerable populations
- Low threshold for echo and cardiology review
- Continue secondary prophylaxis during pregnancy
- Please contact the RHD Register for advice





# References

- RHD Australia (ARF/RHD writing group). *The 2020 Australian guideline for prevention, diagnosis and management of acute rheumatic fever and rheumatic heart disease (3.2 edition)*; March 2022 ([https://: www.rhdaustralia.org.au](https://www.rhdaustralia.org.au))
  - For staff – e-learning, information, teaching tools
  - For patients – information, stories, cartoons, pamphlets, videos etc
- [Rheumatic Heart Disease \(health.wa.gov.au\)](https://health.wa.gov.au)
- Australian Institute of Health & Welfare ([https://: www.aihw.org.au](https://www.aihw.org.au))
- Ongzalina et al., 2020, Rheumatic heart disease in pregnancy: profile of women admitted to a WA tertiary obstetric hospital, *Aust N Z Obst Gynae*, vol 60, p.p. 302-308
- Vaughan et al., 2021, Rheumatic heart disease in pregnancy: new strategies for an old disease, *Global Heart*, no. 16, vol. 1, p.p. 84-88
- RHD Australia resource: Sharing a heartbeat 2 (youtube.com) [Sharing A Heartbeat 2 - English - YouTube](https://www.youtube.com/watch?v=...)



# Rheumatic Heart Disease is **PREVENTABLE**

