

# Australian experience with case management of RF

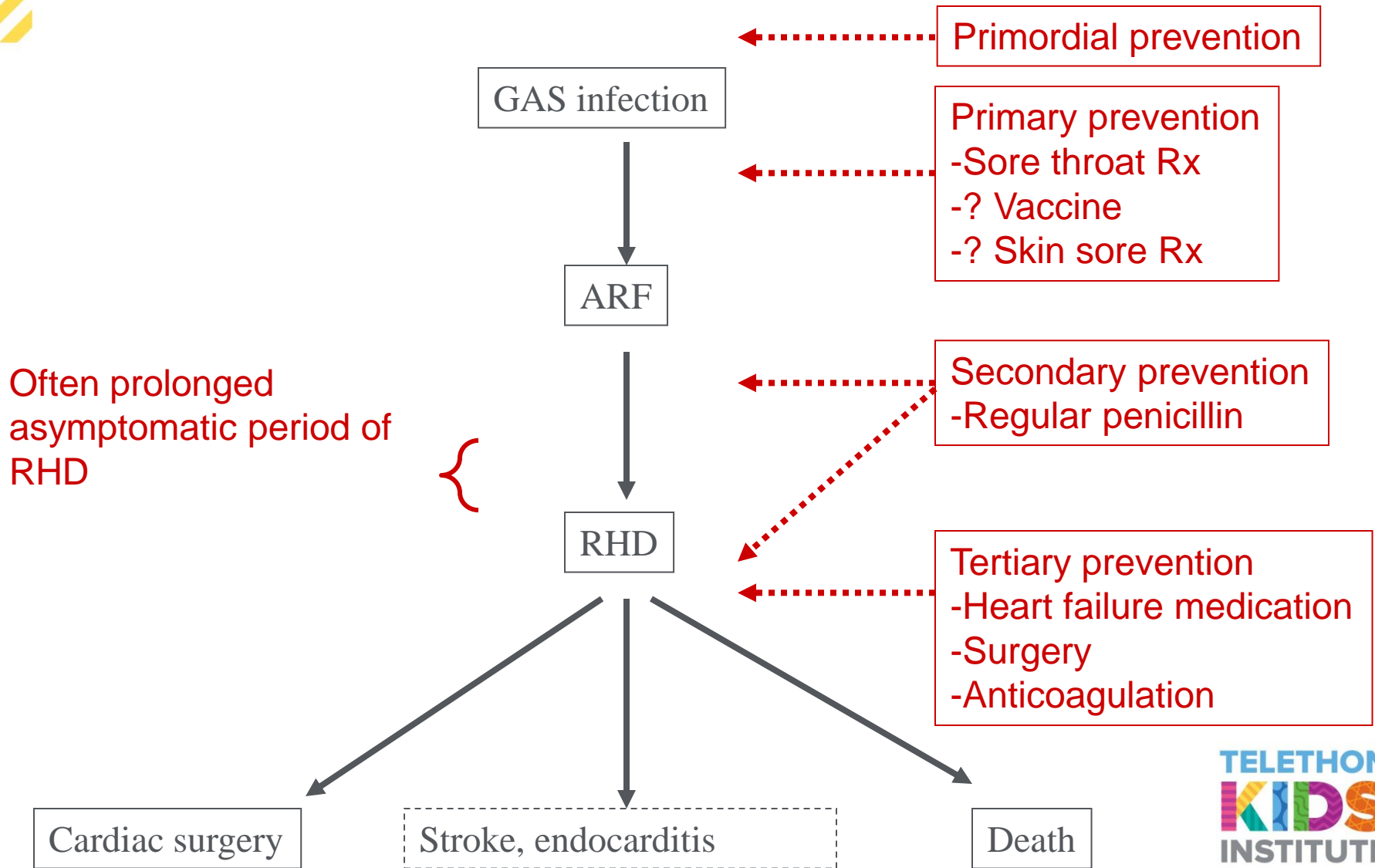
Jonathan Carapetis



# Outline

- Australian focus on secondary (and tertiary) prevention
  - Why?
  - What?

# Preventing RHD





# Three Top End communities

(prevalence of RHD ~ 25 per 1000)

Monthly visits – 531 household visits, 4842 consultations

1. Symptomatic streptococcal pharyngitis (<15 yrs) – nil
2. Streptococcal (GAS) throat carriage low (3.7%) < Melbourne (Gr C/G rates high)
3. Pyoderma (<15 yrs) - 40% (median point prevalence 14%)
4. Streptococcal diversity & high turnover (*emm* typing)
5. Dominance of non-throat types and absence of 'rheumatogenic' types

- McDonald M, et al. *Clin Infect Dis* 2006;43:683-9
- McDonald M, et al. *Epidemiol Infect* 2008;136:529-39
- Richardson L, et al. *Vaccine* (in press)

# Childhood pyoderma



## Beyond reasonable doubt

### Glomerulonephritis

- Outbreaks & sporadic
- Clear 'nephritogenic' types
- Organism determined
- Chronic renal disease?

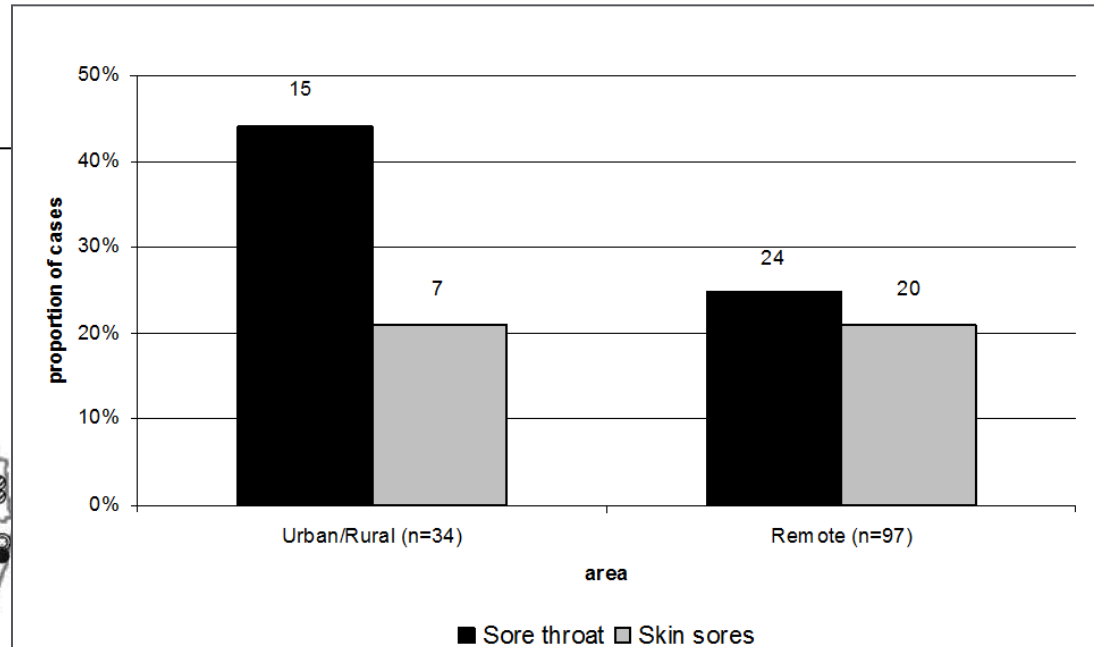
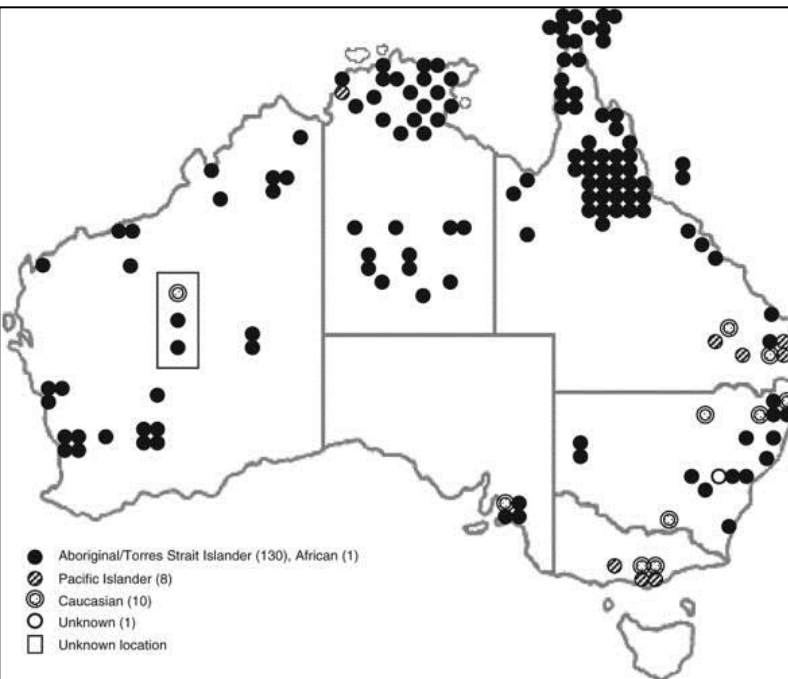
## The balance of probabilities

### Rheumatic fever and rheumatic heart disease

- Endemic
- No clear 'rheumatogenic' types
- Host determined - role of immune priming?
- Chronic heart disease

- Streeton CL, et al. *J Paediatr Child Health* 1995;31:245-8
- White AV, et al. *Med J Aust* 2001; 21:492-6
- McDonald M, et al. *Lancet Infect Dis* 2004;4:240-5
- Hoy W, et al. *Nephrology* 2008;6:19-24
- Singh RG. *Pediatr Clin N Am* 2009; 56:1363-82
- Wong W, et al. *Pediatr Nephrol* 2009; 24:1021-6

# National ARF surveillance

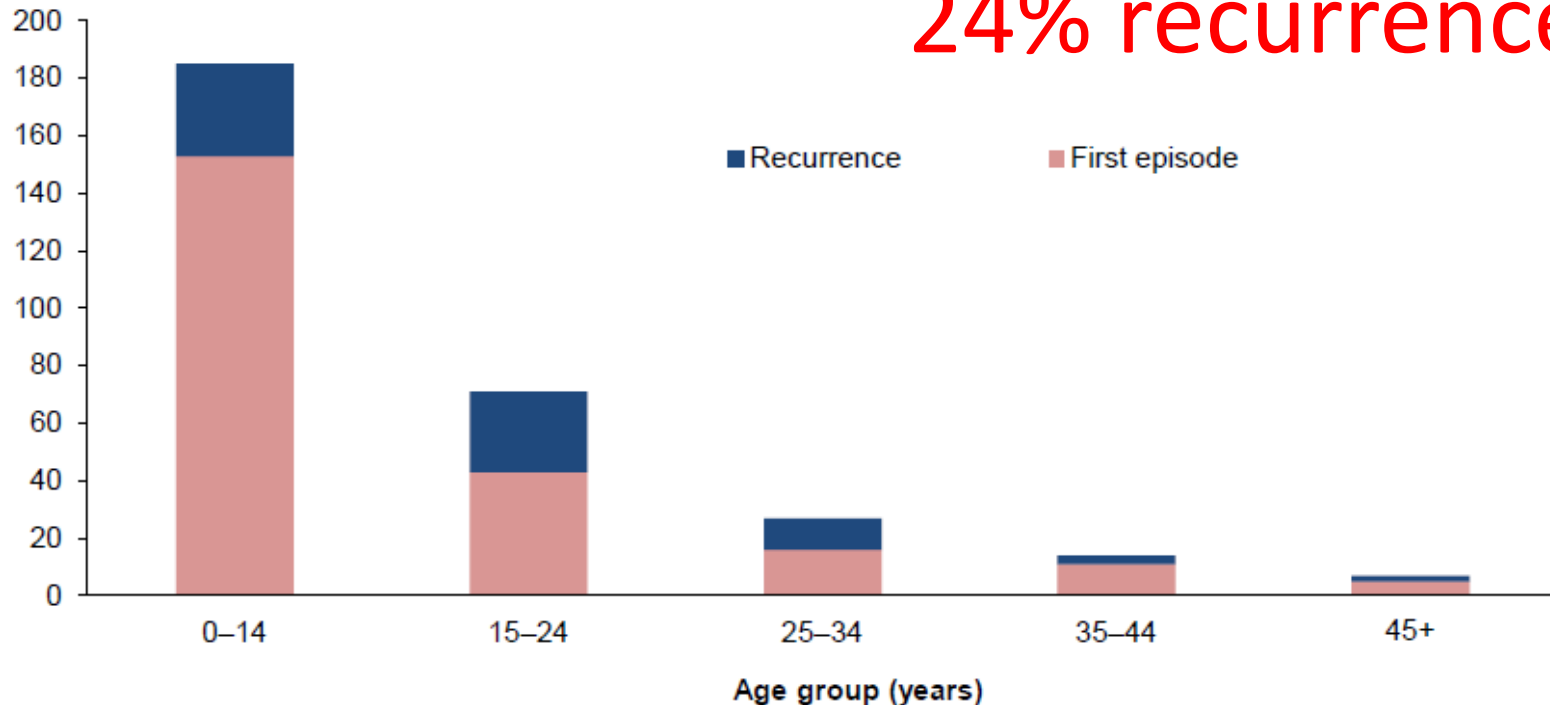


**FIGURE 3.** Reported sore throat and skin sores for Aboriginal and Torres Strait Islander cases by geographical location (n=131). Recent sore throat was more common in children from urban/rural areas. Skin sores were reported equally from both areas.

# ARF recurrences in NT

24% recurrences

Number of cases

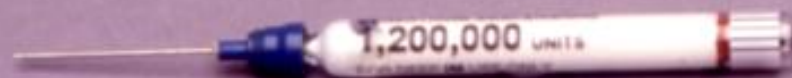


Note: Excludes cases of unknown status.

Source: AIHW analysis of Northern Territory Rheumatic Heart Disease Control Program register data.

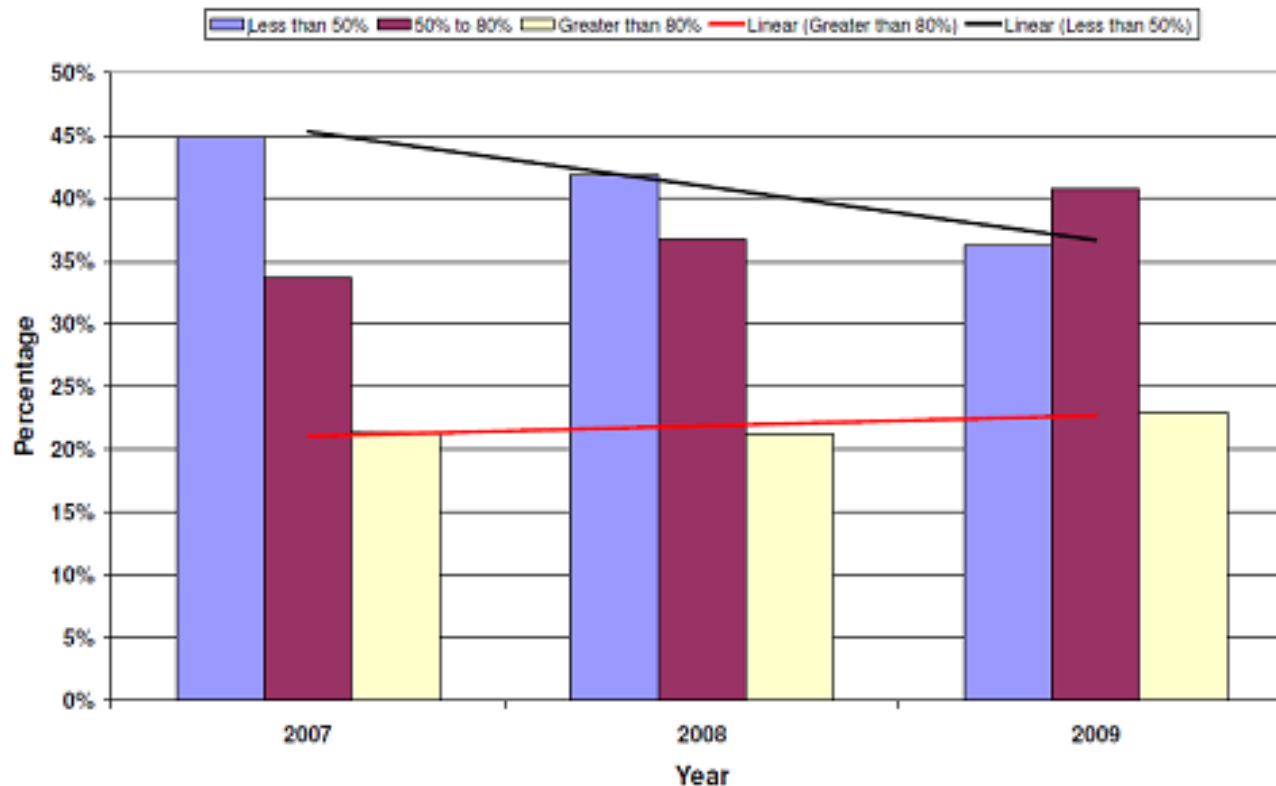
**Figure 2.2: Acute rheumatic fever incidence, Northern Territory, by age and episode type, 2005-2010**







**Fig 1. SP coverage, NT 2007-9. (NT RHD Control Programme Report 2010).**

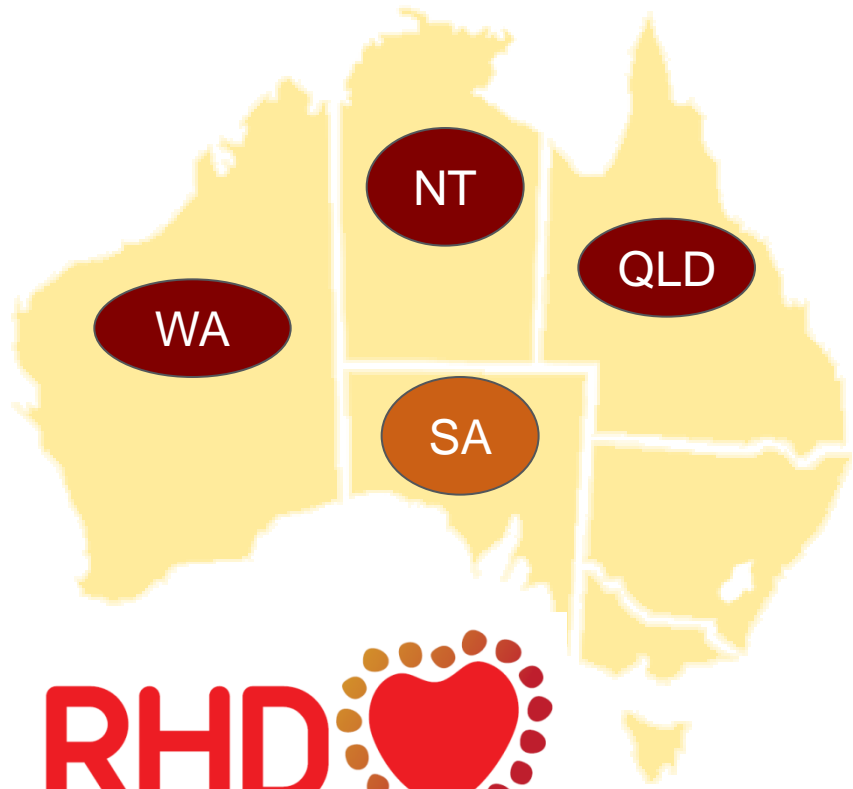


Year	<50%	50-80%	>80%	Overall Coverage
2007	44%	34%	22%	55%
2008	42%	36%	21%	56%
2009	35%	41%	24%	60%
2010	33%	42%	26%	61%
Grand Total	38%	38%	23%	58%



# Australia's National RF Strategy

- Announced 2009
- A national, coordinated approach to RHD control - RHDAustralia
- Core funding for RHD control programs across:
- Western Australia, Queensland & Northern Territory (and in 2014, SA)



**RHD**   
Australia



# RHDAustralia

**RHDAustralia has been established to provide leadership in the areas of:**

- Establishing a national data collection and reporting system
- Updating and disseminating evidence based best practice guidelines
- Developing education, training and health professional resources
- Providing support to RHD control programs
- Increasing community awareness



## ARF recurrences in NT – 9% reduction per year

**Table 5. Recurrence of ARF: Multivariate Analysis of Recurrence Rate, NT, 1997 to 2010**

	Hazard Ratio*	P Value	95% CI
Indigenous status	1.92	0.52	0.27–13.9
Female sex	0.79	0.30	0.50–1.23
Age at first ARF episode†	0.93	<0.01	0.90–0.97
Year	0.91	0.01	0.84–0.97

ARF indicates acute rheumatic fever; CI, confidence interval; and NT, Northern Territory.

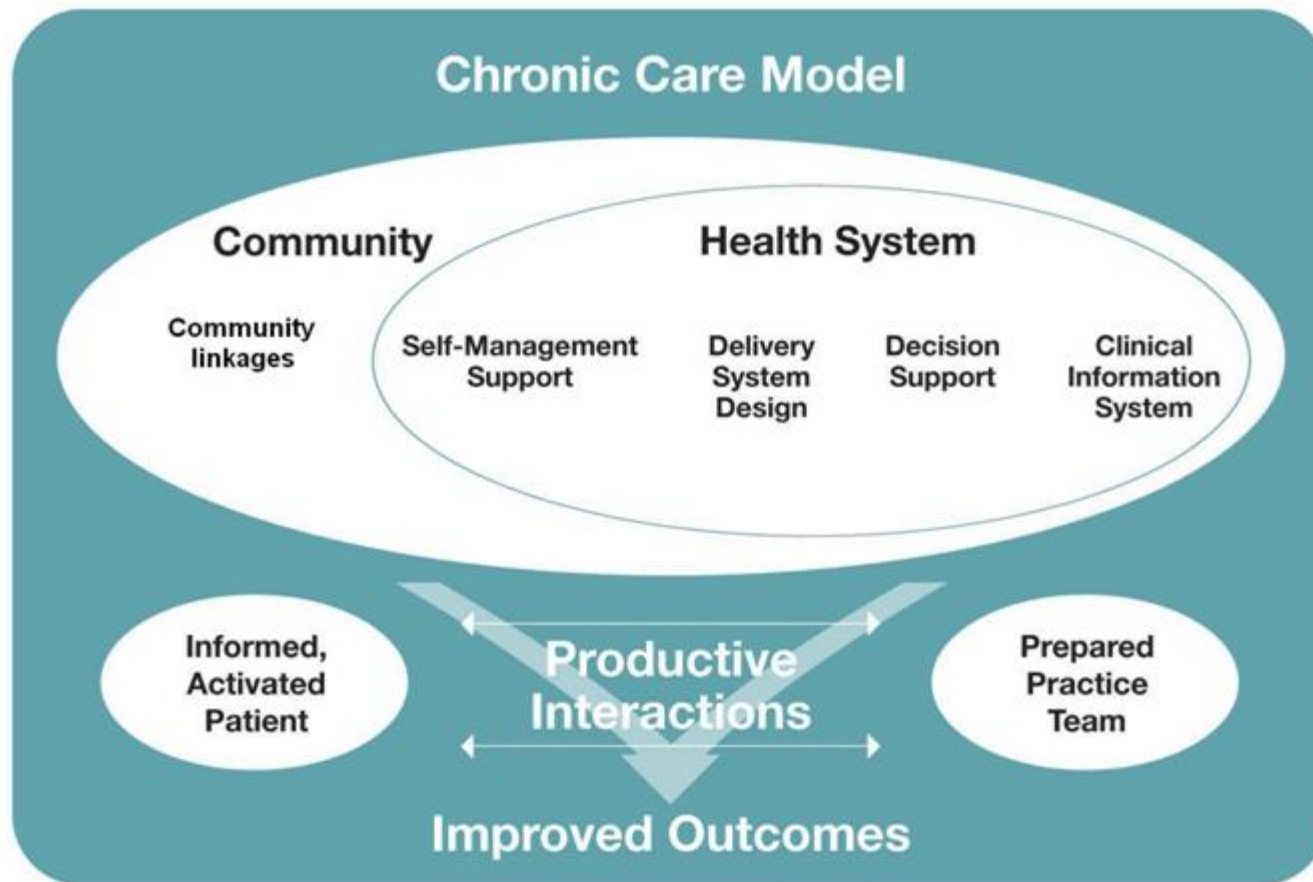
\*Proportional hazard regression.

†Per single year.

Lawrence J, et al. Circulation 2013

# A community randomised trial to improve secondary prophylaxis

## Project framework



Adapted from the model developed by The MacColl Institute

# Echo Screening (gECHO)

	Urban	Remote Indigenous
Definite RHD	0 (0.00%)	34 (0.86%)
Borderline RHD	5 (0.47%)	66 (1.67%)
<b>Any RHD</b>	<b>5 (0.47%)</b>	<b>100 (2.53%)</b>
No RHD	1048 (99.53%)	3846 (97.47%)
<b>Total</b>	<b>1053</b>	<b>3946</b>





# ? New approaches to penicillin delivery

- Implant
- Longer acting injectable
- RHD in pregnancy






# Australian Story

- Data:
  - Research → registers → echo screening + clinical registers
- Framing as disadvantage
- National RF Strategy, focus on secondary prophylaxis and RHD clinical care
  - Data collection system / reporting framework
- Now → end game!




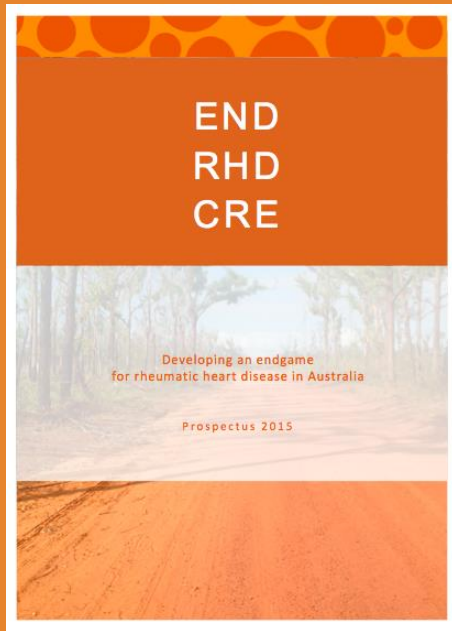
# END RHD CRE



Developing an endgame  
for rheumatic heart disease in Australia

Prospectus 2015





We commit to identify a set of costed, step-wise interventions which are most likely to reduce the incidence of ARF and the prevalence of RHD for Indigenous Australians to the same level as non-Indigenous Australasians.

To eliminate RHD as a public health priority in Australia





# Summary

- Comprehensive approach needed
- For case management approach to RF
  - What factors are remediable?
  - “SP Plus”?

