

# Rheumatic Fever in New Zealand

## Otago Summer School 2016

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**Rātonga Hauora ā Iwi o Tamaki Makaurau**

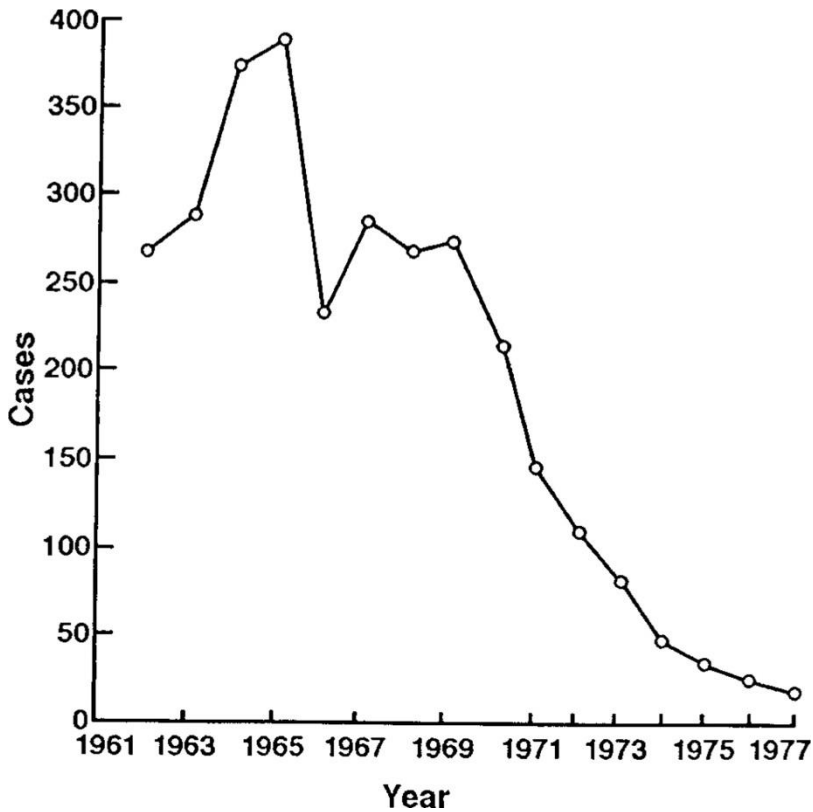


Working with the people of Auckland, Waitemata and Counties Manukau

*Working with the people of Auckland, Counties Manukau and Waitemata*

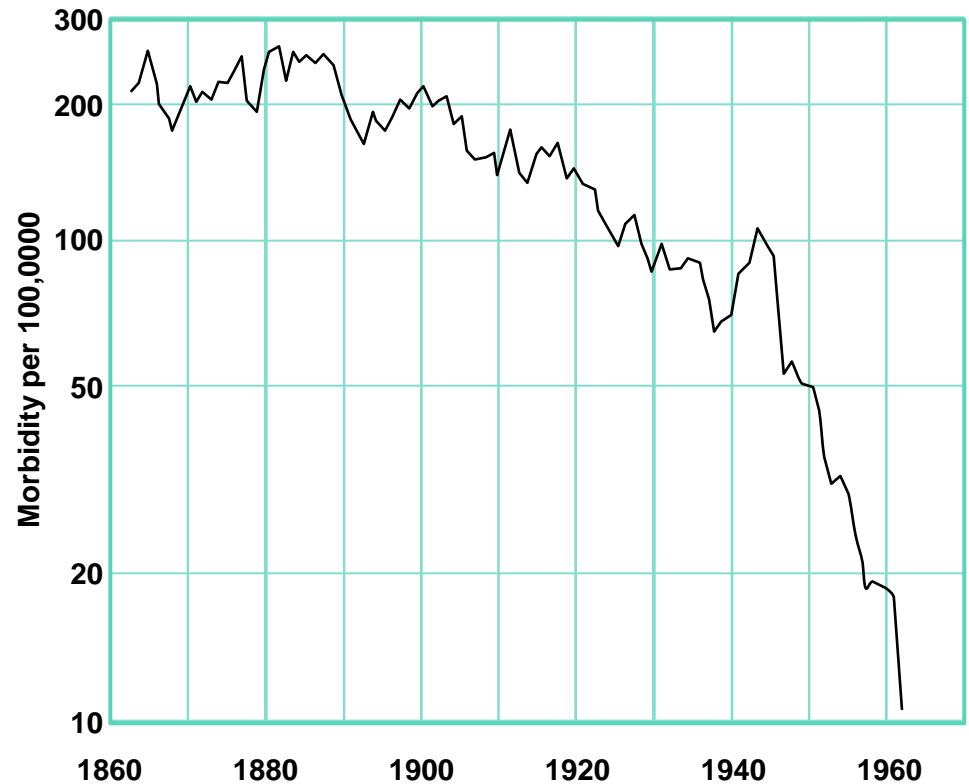
# Disappearing Disease?

## Chicago 1969-1977



Shulman S T et al. Clin Infect Dis. 2006;42:441-447

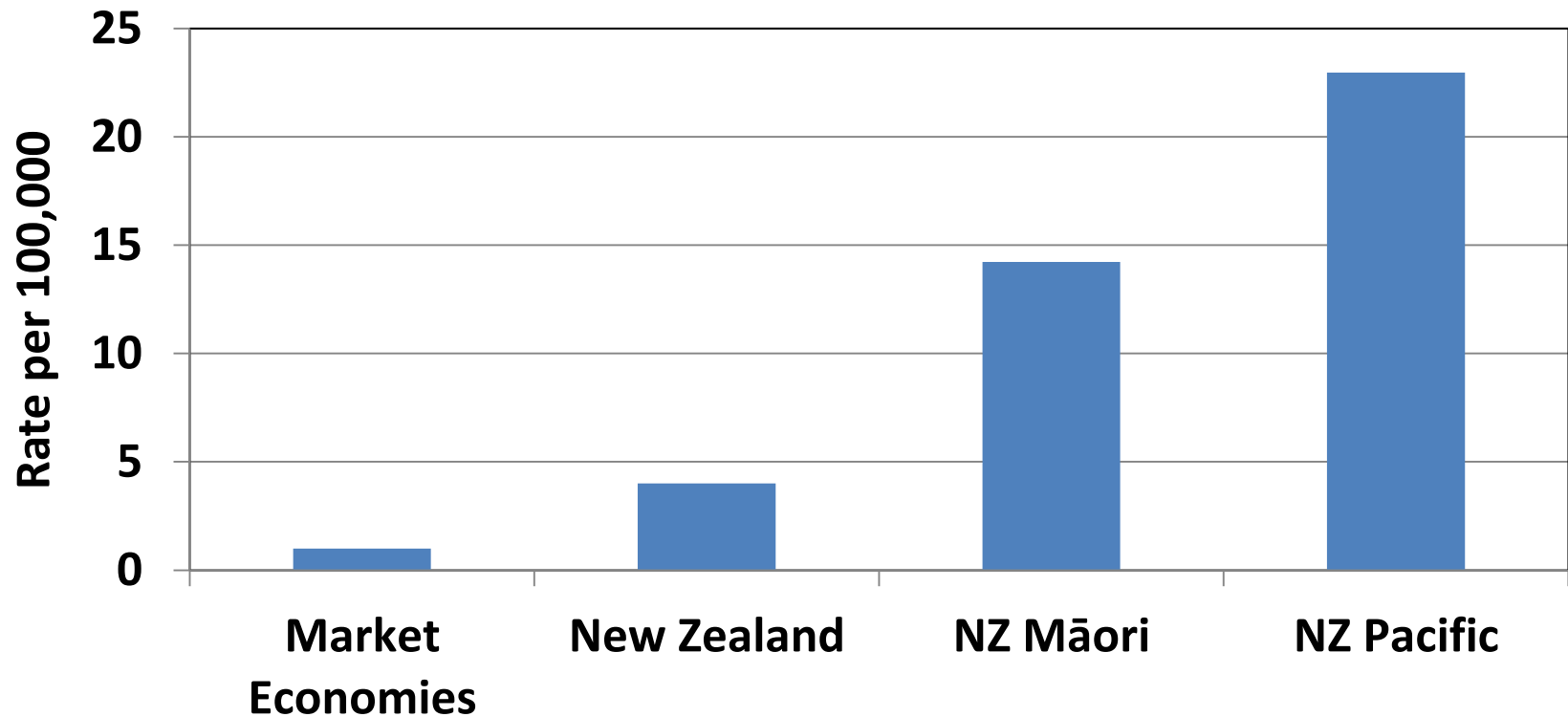
## Copenhagen 1862-1962



Denny F. Clin Infect Dis. 1994;19:1110-1122

# NZ in a Global Context

## 2010-2012



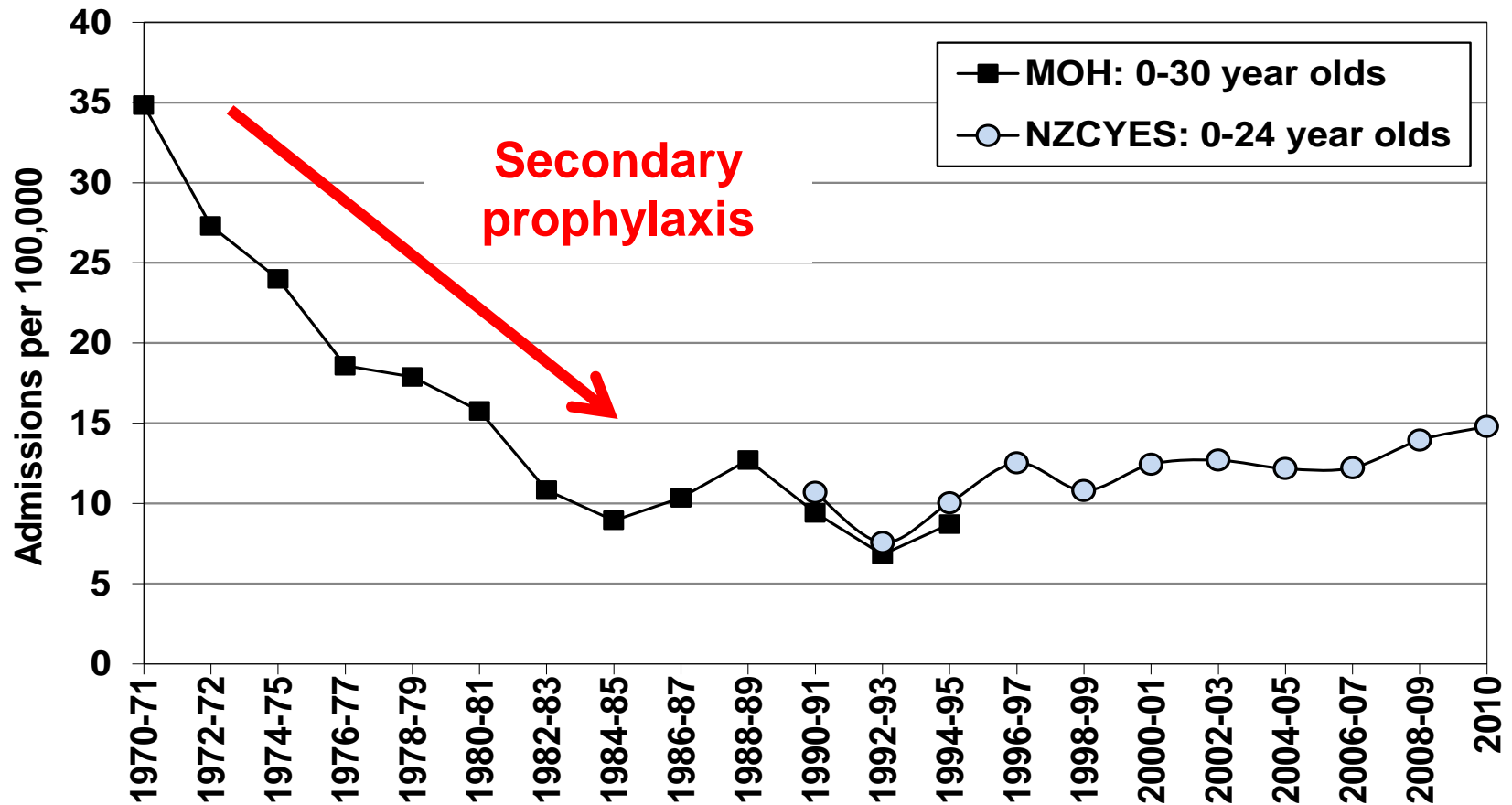
# New Zealand Data Sources

Data Source	Strengths	Weaknesses
<b>Hospital Admissions</b>	National data Ministry algorithm	<ul style="list-style-type: none"> <li>• Over-estimates by 20-33%</li> <li>• Review clinical notes for accuracy</li> </ul>
<b>ESR Surveillance</b>	National data	<ul style="list-style-type: none"> <li>• Under-estimated by 20-50% before 2013 – DHBs vary</li> <li>• Improved since 2013</li> <li>• May be accuracy issues</li> </ul>
<b>Rheumatic Fever Registers</b>	Accurate diagnosis	<ul style="list-style-type: none"> <li>• Regional not national</li> </ul>

**Be aware – numbers and rates vary by data source**

# New Zealand Trends

## Acute Rheumatic Fever Hospitalisations 1970-2010



Ministry of Health. Progress on Health Outcome Targets 1999. Wellington: Ministry of Health; 1999.

New Zealand Child and Youth Epidemiology Service [www.otago.ac.nz/nzcyes](http://www.otago.ac.nz/nzcyes)

# National Burden 2006-2010

## ■ Acute Rheumatic Fever

- first admission rate 4 per 100,000

~150 first admissions per year (~180 in 2011-13)

~1,500 children and young people on prophylaxis  
(in Auckland Region ~1,000)

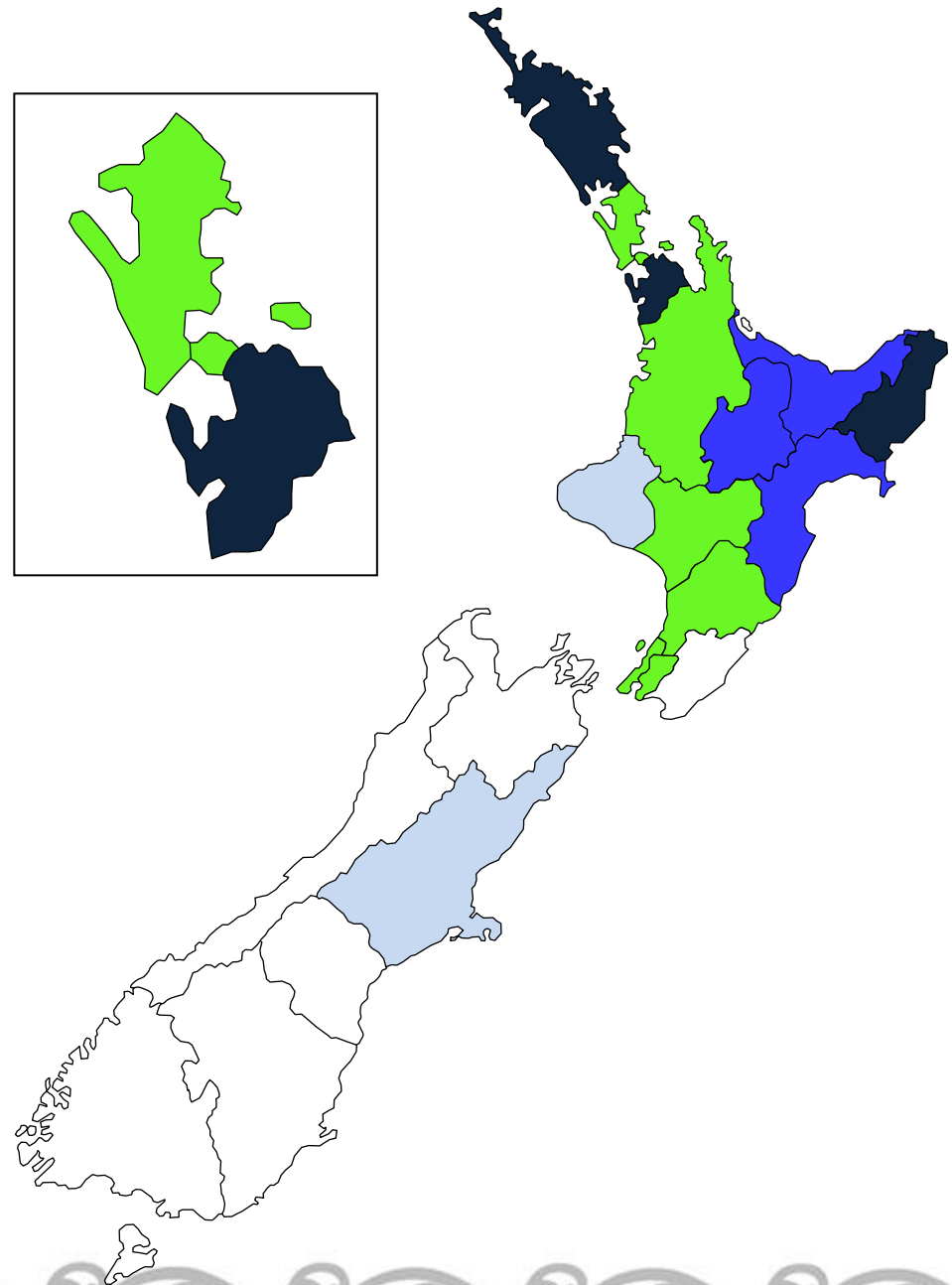
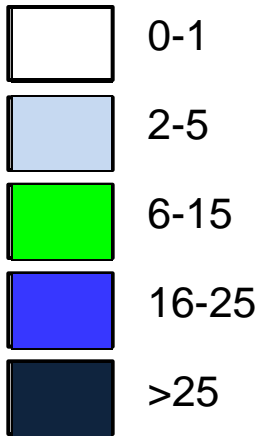
## ■ Rheumatic Heart Disease

~550 hospital admissions per year

~140 deaths - Average age 56-58 yrs for Pacific/Māori  
and 80 yrs for Other

# North-South Gradient

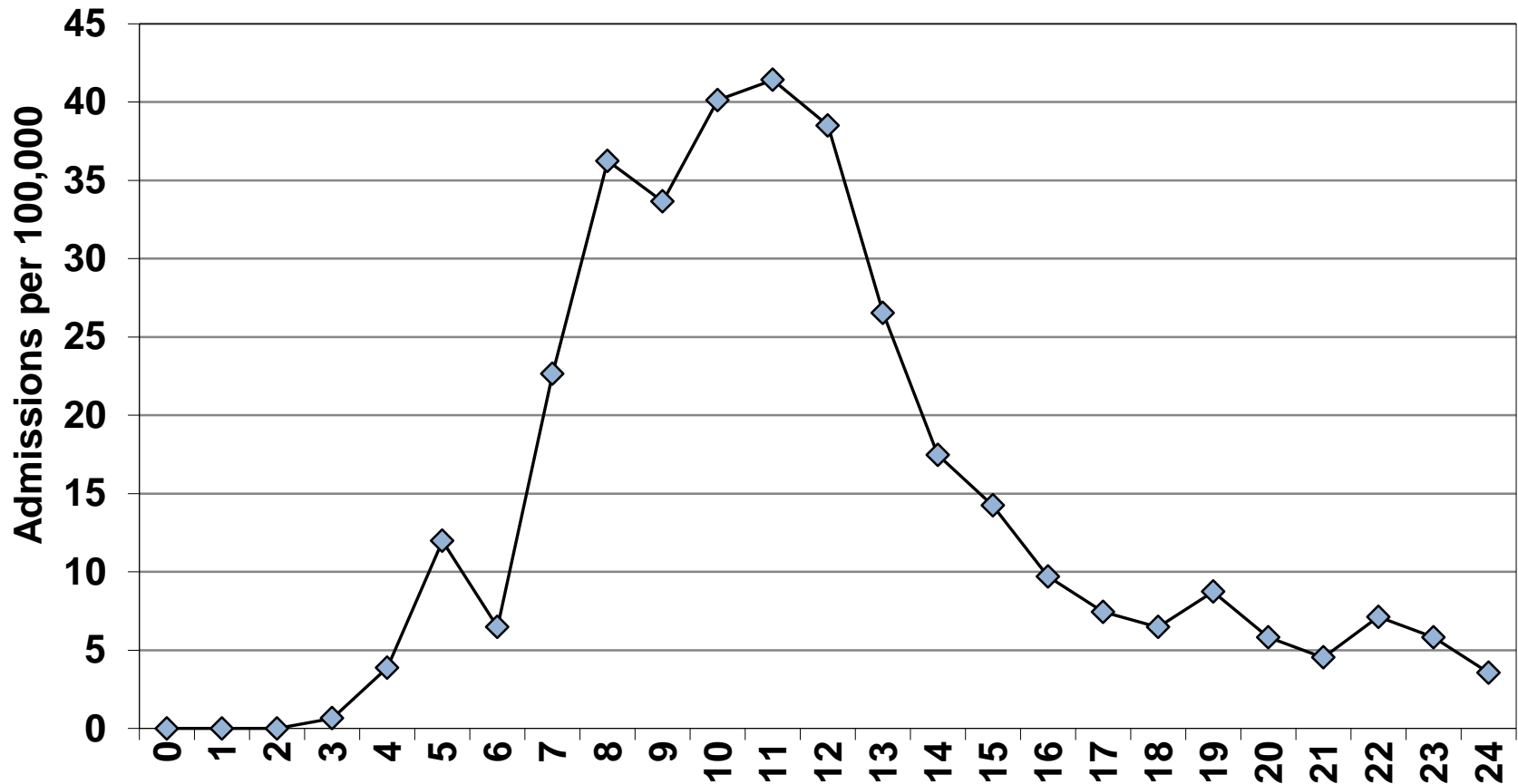
ARF Admissions 2006-10  
0-24 Year Olds  
Rate per 100,000



New Zealand Child and Youth Epidemiology  
Service [www.otago.ac.nz/nzcyes](http://www.otago.ac.nz/nzcyes)

# ARF Admissions by Age

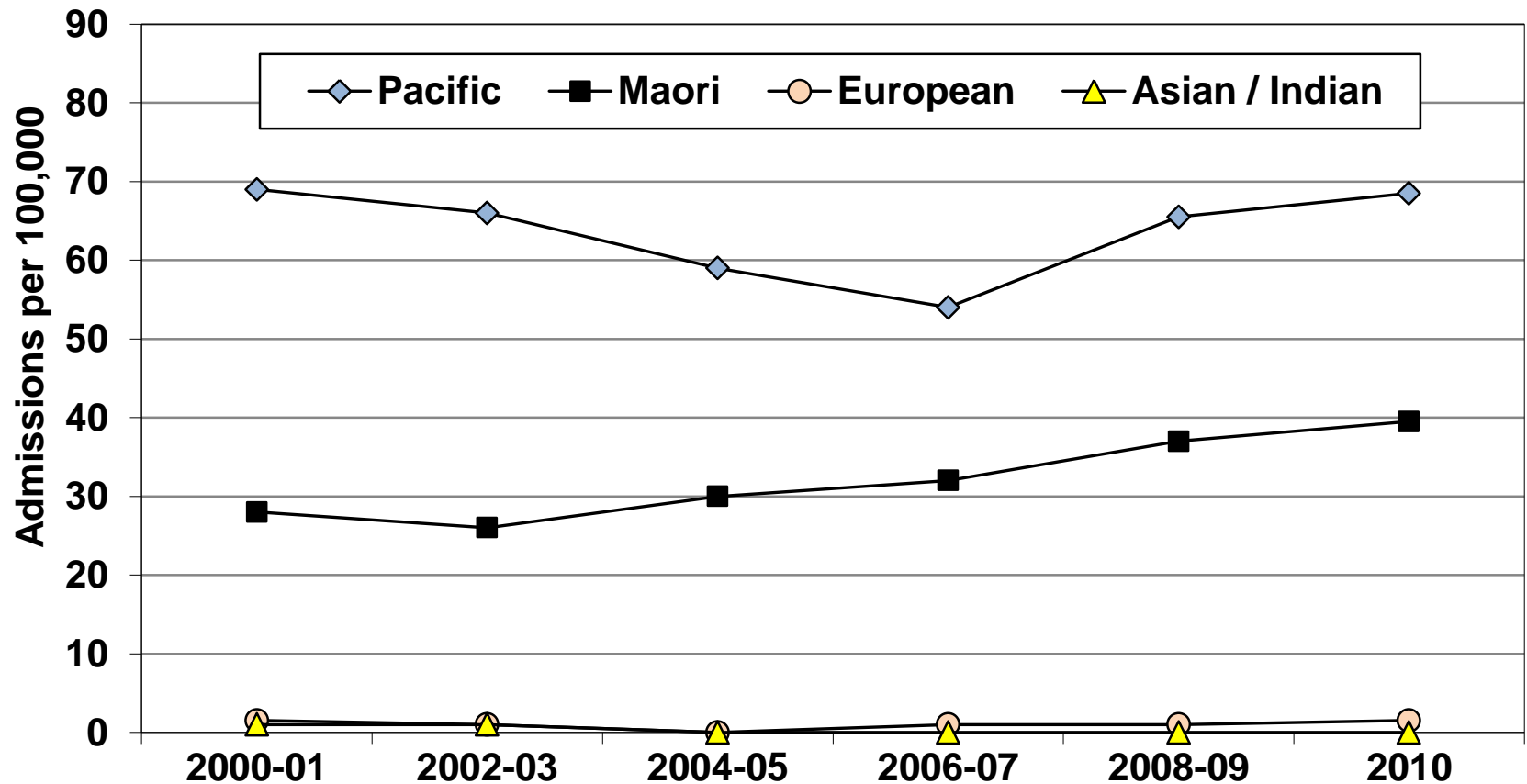
## 0-24 Year Olds, NZ 2006-2010





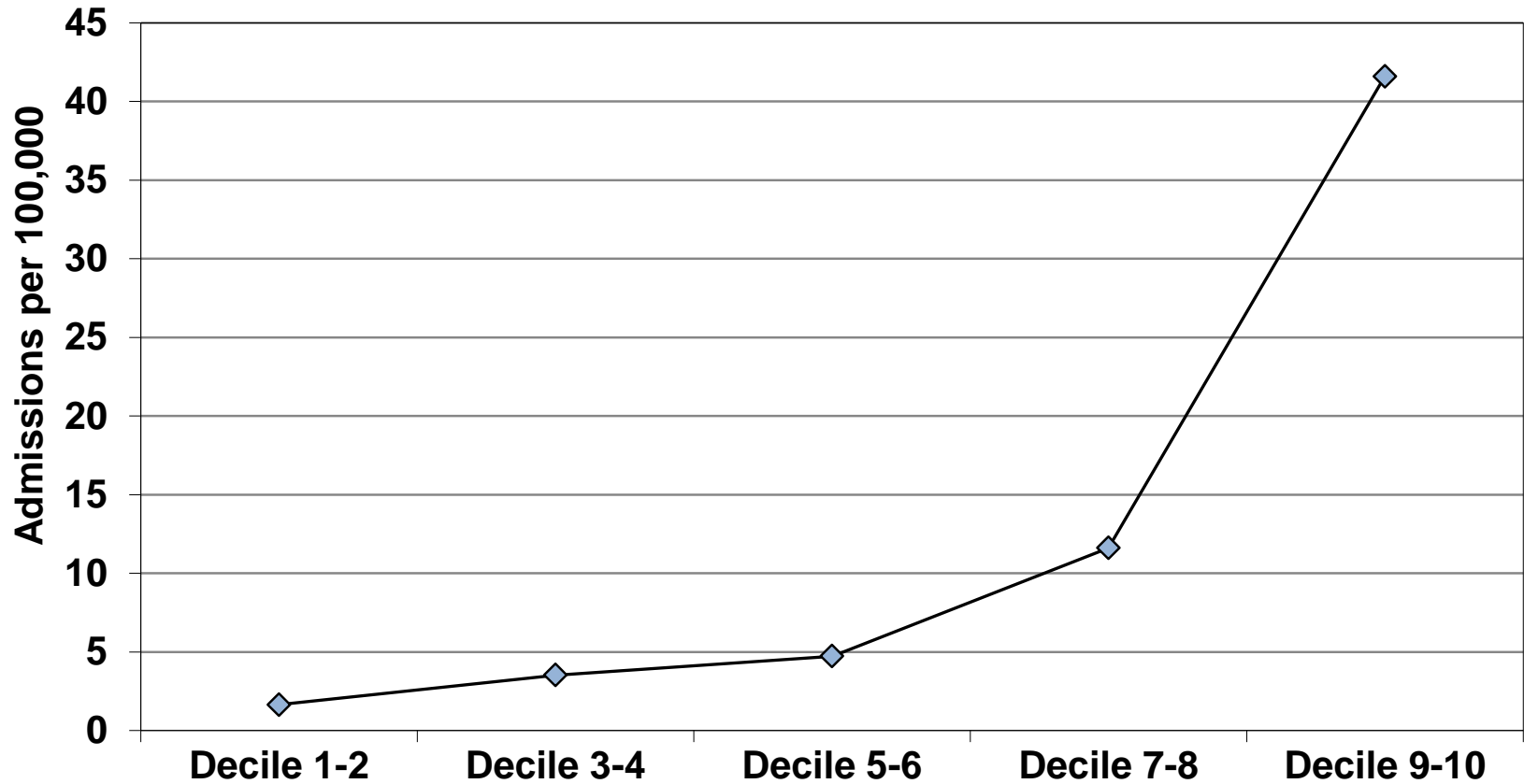
# ARF Admissions by Ethnicity

## 0-24 Year Olds, NZ 2006-2010



# ARF Admissions by Deprivation

## 0-24 Year Olds, NZ 2006-2010



# Better Public Services Target

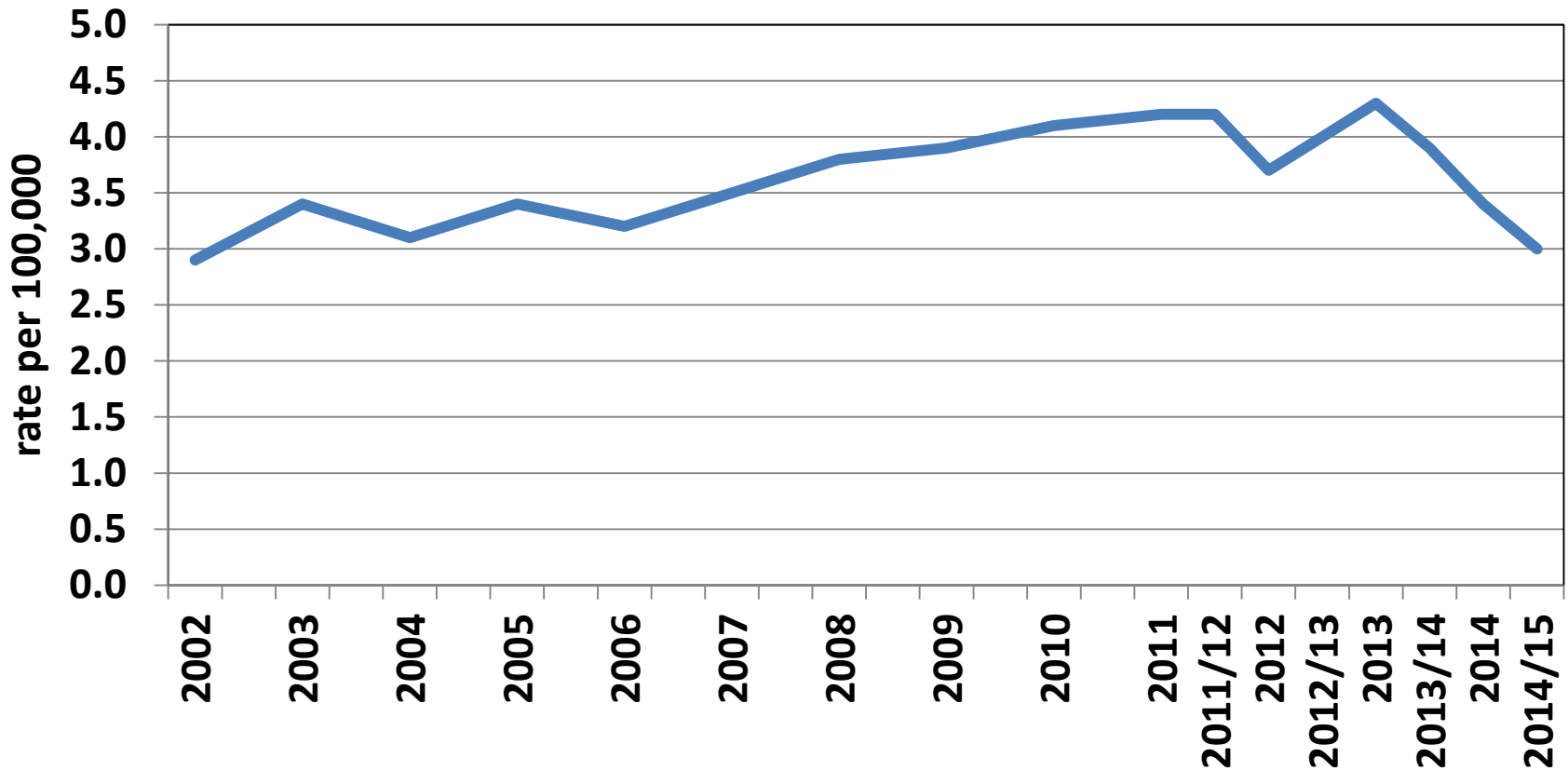
- Reduce the incidence of first episodes of acute rheumatic fever by two thirds
- From 4.2 per 100,000 (**2010/11**)  
to 1.4 per 100,000 by June 2017

reduction in the total population  
hospital admission rate

<http://www.health.govt.nz/about-ministry/our-priorities/better-public-services>

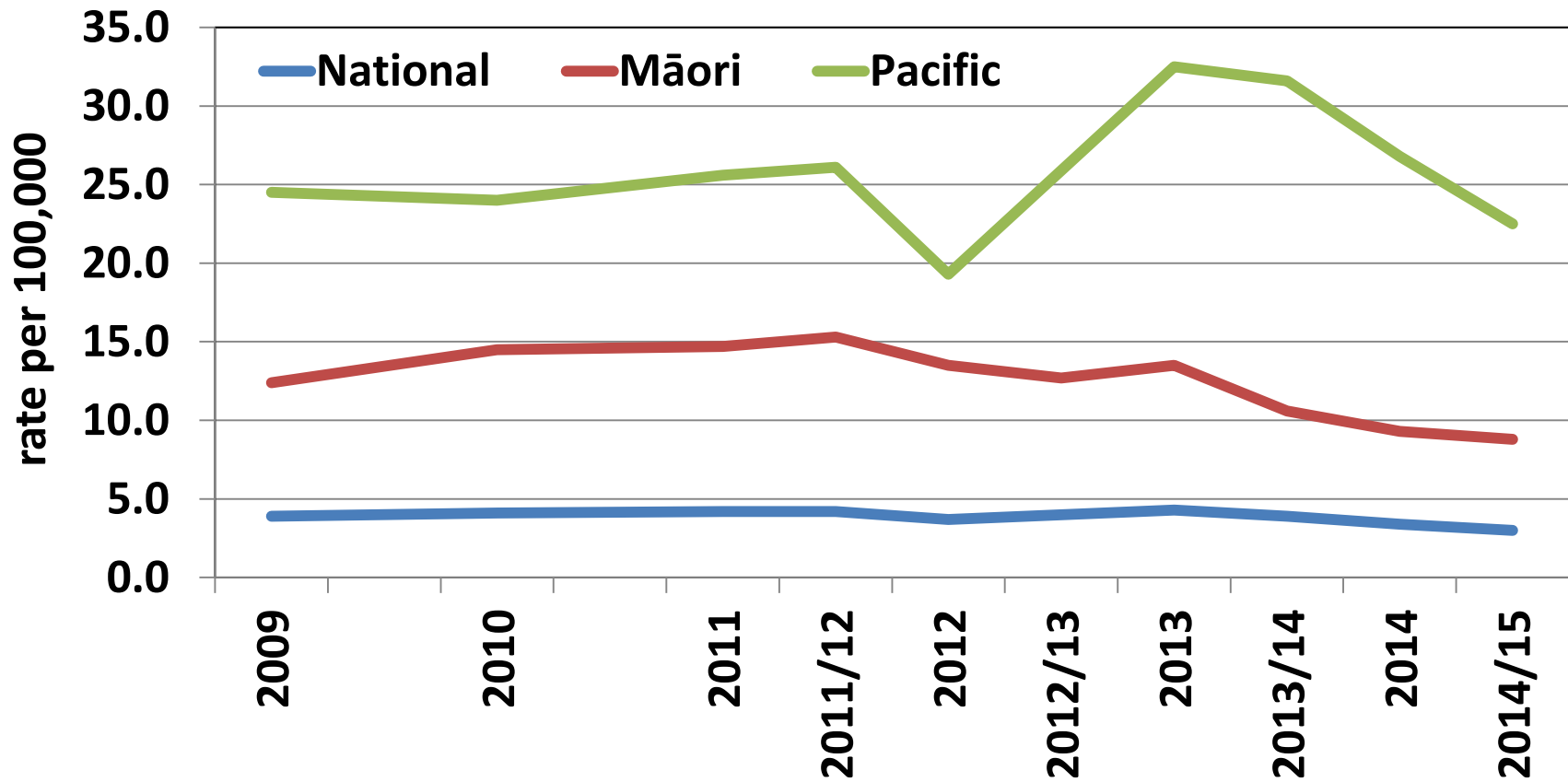
# What has happened since?

## First episode rheumatic fever hospitalisation rate



# Māori and Pacific

## First episode rheumatic fever hospitalisation rate



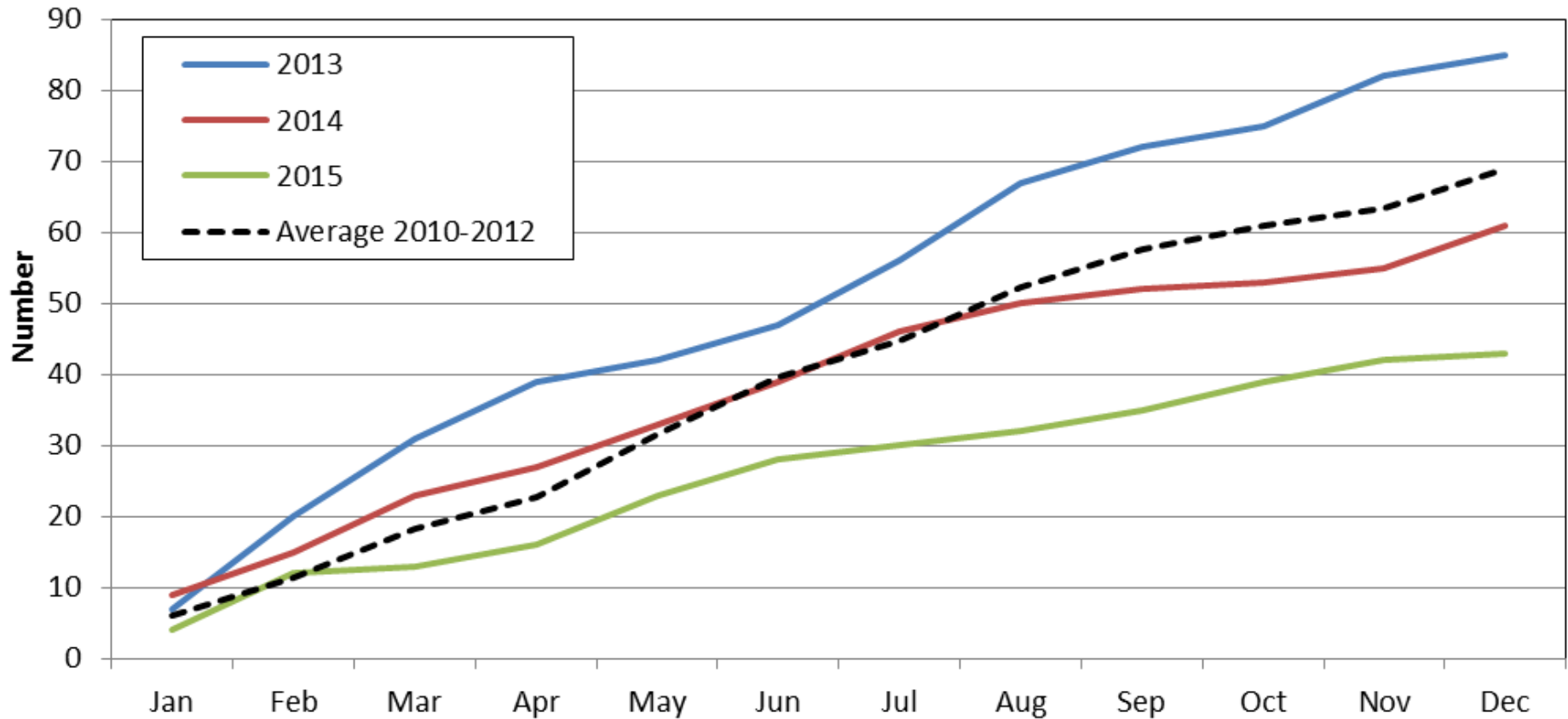
# Auckland Region 60% of Cases

## Improving Surveillance Data since 2013

- Quarterly admissions data from DHBs (monthly for CMDHB)
- Quarterly reports back to the DHBs
- Possible cases followed up until definitive diagnosis made
- Ensure all cases referred to Regional RF Register

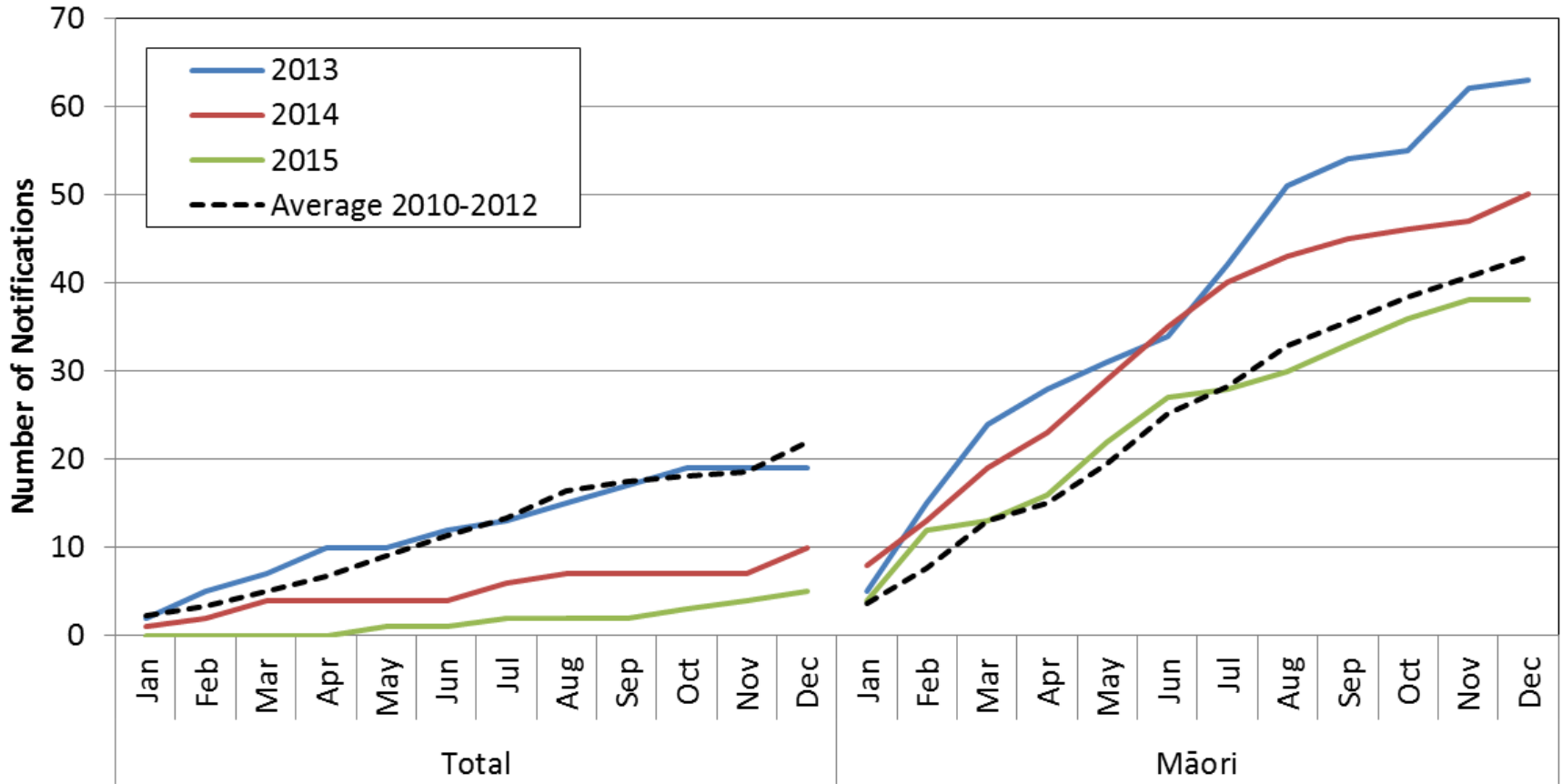
# Auckland Region Notifications

## 0-19 year olds

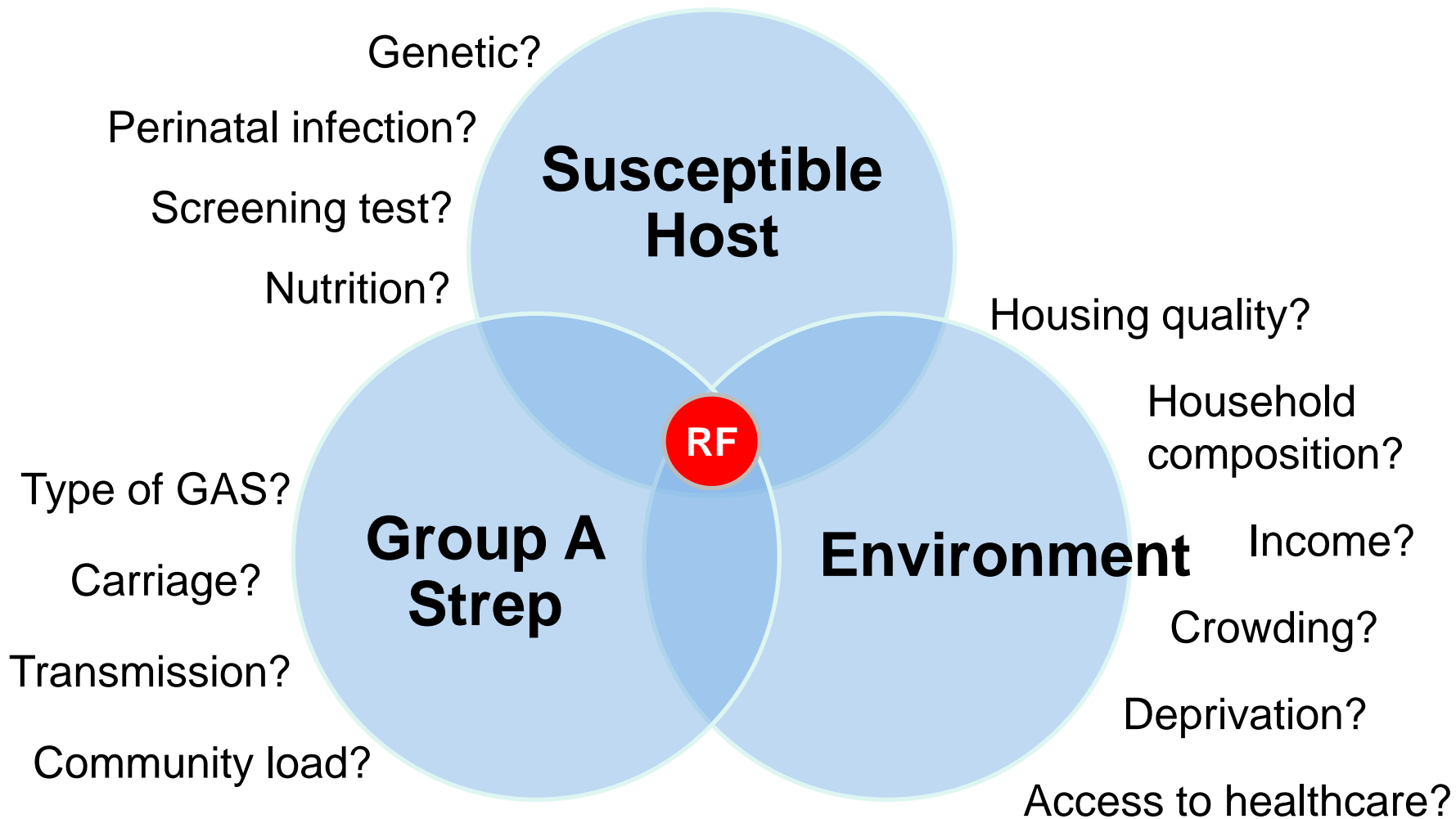


# Auckland Region Notifications

## Māori and Pacific 0-19 year olds







# Primary Prevention Access

## Sore Throat Treatment

- Baltimore Study 1960s
  - Improving access to healthcare reduced ARF
  - Gordis L *NEJM* 1973;289(7):331-335
- Rationale behind school programmes, rapid response clinics and free primary care to <13's

# NZ Health Survey 2014/15

## Children 0-14 years

### **Unmet need for GP care**

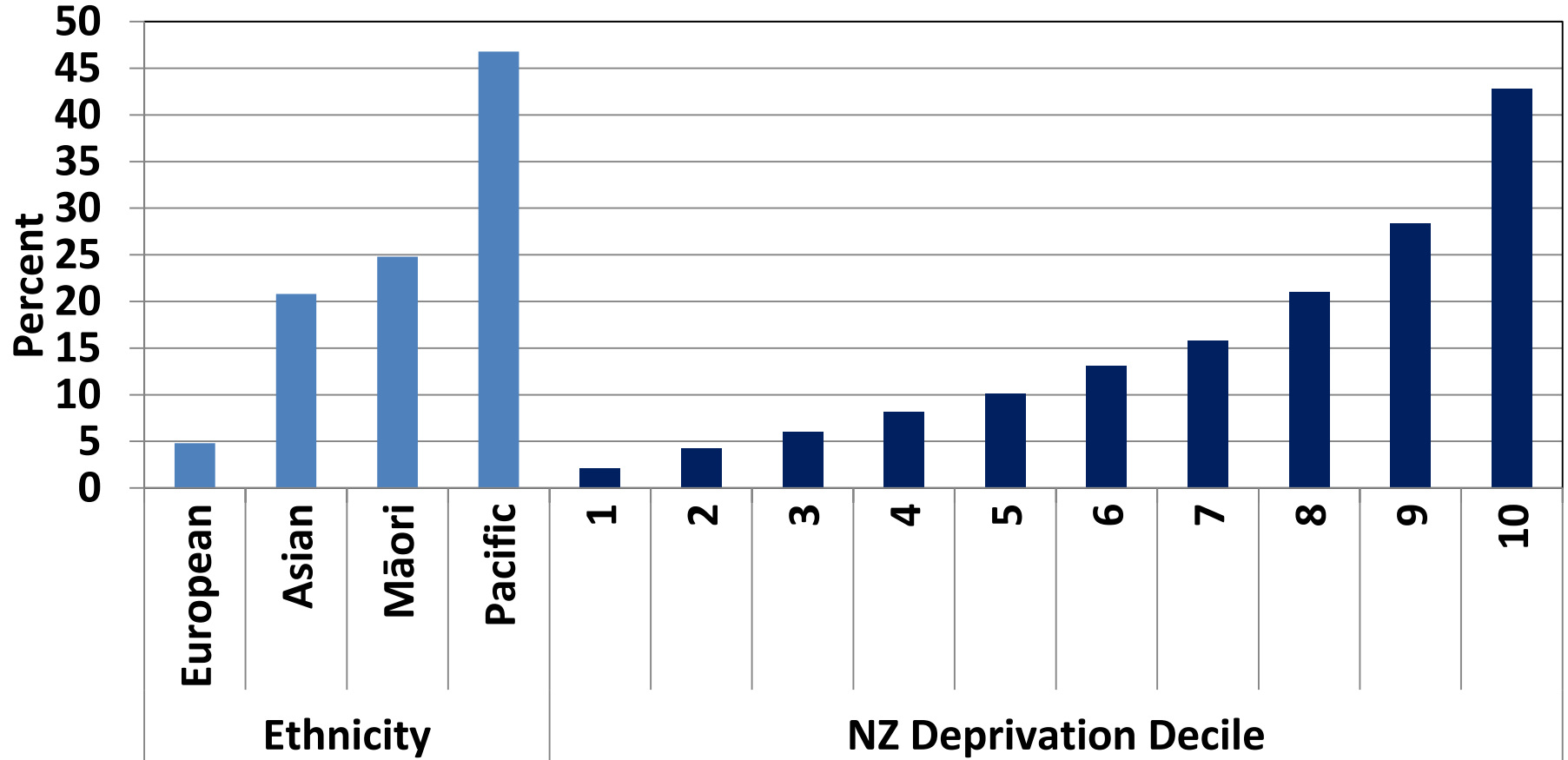
- 27% Māori, 27% Pacific, 21% European/Other
- No significant change since 2011/12
- Barriers: No appt in 24 hours > cost > transport > childcare

### **Unfilled Prescription due to cost**

- Pacific (14%), Maori (9.2), European (3.5%)
- No significant change since 2011/12

# Household Crowding\*

## 0-14 year olds, 2013 Census



- No significant change since 2001 Census

\*requires 1+ additional bedrooms

# Conclusions

- Among world's highest rates of RF in NZ but declining
- Burden is borne by Māori and Pacific
  - Premature death from RHD
  - 1,500 on monthly penicillin injections
  - 550 admissions for rheumatic heart disease
  - 140 deaths annually
- Environmental drivers complicated

# ARF Admissions per Month

## 0-24 Year Olds, NZ 2006-2010

