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23rd PUBLIC HEALTH
SUMMER SCHOOL



WELLINGTON

School based sore throat management – where to from here?

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Outline



- Rationale and challenges for primary prevention
- School based sore throat management
- Where to from here?

What is Primary Prevention?

Prevention level	Definition	RF example
Primordial prevention	Preventing development of risk factors for a disease	Addressing poverty
Primary prevention	Activities that reduce the occurrence of the disease	Treating GAS throat infection to reduce ARF
Secondary prevention	Reduce the progress of disease- occurs early in natural history of disease	IM penicillin to prevent recurrence of ARF and worsening RHD
Tertiary prevention	Activities to limit disability from disease- disease has occurred, treated clinically but rehabilitation needed	Post valve repair cardiac rehabilitation

Primary Prevention

- There is evidence to support that treating GAS throat infections can prevent rheumatic fever
- It is hypothesized that treating GAS skin infection may prevent rheumatic fever
- We know people present with ARF with no recollection of sore throat
- We know people present with RHD with no recollection of symptoms of ARF
- We know most people who get GAS pharyngitis will not go on to get ARF
- We know some people who are identified with GAS pharyngitis and treated appropriately still go on get ARF

Requirements for primary prevention to be successful

Sore throat (or potentially skin infection) recognised

Healthcare accessed

Appropriate diagnosis and management decisions made

Treatment completed

Challenges for primary prevention

- Access to care
- Appropriate care once accessed
- Adherence
- Carrier states
- Potential over use of Antibiotics and resistance
- Potential impact of repeated course of antibiotics on microbiome

Rationale for school based programme

If treatment of GAS pharyngitis prevents RF
then

Schools provide a setting where identification and treatment of sore throats can be provided for children who are unable to easily access traditional primary care services

Protocols for management

and

Also allows an opportunity to identify and address housing needs i.e. primordial prevention

New Zealand National Rheumatic Fever Prevention programme

Rheumatic fever prevention programme

Prevent *the transmission of Strep A sore throats*

School based clinics

Healthy Homes Initiatives

Pacific (Maori) engagement strategy

Sore throat clinics

Awareness raising

“High risk”

Aged 4-19 years

Māori or Pacific or Q5

Key elements of the school based programme in Counties

- Schools selected based on students' risk of RF
- Clusters of schools within a geographical area were included
- Swab symptomatic household members and treat
- Follow up of adherence to antibiotics
- Initially 5 days a week throat swabbing service
- Included case finding
- Secondary schools Decile 1-4 offered sore throat swabbing and treatment
- Treated skin infection (predominately without antibiotics ~4%)
- Attended other child health needs

Does school based primary prevention work in Counties?

Primary prevention of rheumatic fever in the 21st century: evaluation of a national programme

Susan J Jack,^{1,2*} Deborah A Williamson,^{2,3,4} Yvonne Galloway,² Nevil Pierse,⁵ Jane Zhang,⁵ Jane Oliver,⁵ Richard J Milne,⁶ Graham Mackereth,² Catherine M Jackson,⁷ Andrew C Steer,^{8,9,10} Jonathan R Carapetis^{11,12} and Michael G Baker⁵

Conclusions: Population-based primary prevention of ARF through sore throat management may be effective in well-resourced settings like NZ where high-risk populations are geographically concentrated. Where high-risk populations are dispersed, a school-based primary prevention approach appears ineffective and is expensive.

23% effectiveness Nationally
46% (CI 0.34-0.84) effectiveness in CM Health
No statistically significant effect seen in rest of New Zealand if CM health excluded

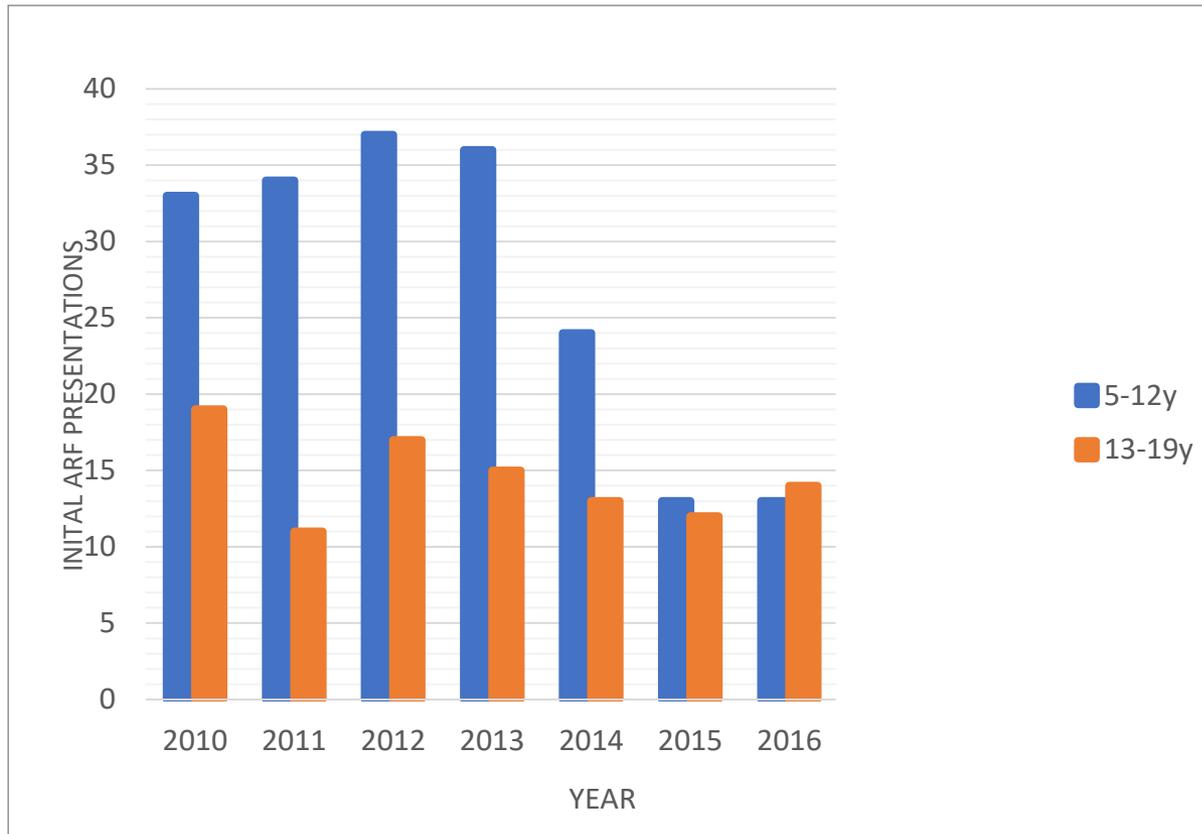
First Presentation Acute Rheumatic Fever is Preventable in a Community Setting: A School-based Intervention

Lennon, Diana , Anderson, Philippa , et al , *The Pediatric Infectious Disease Journal* (volume 36, issue 12, pages 1113-1118) , December 2017

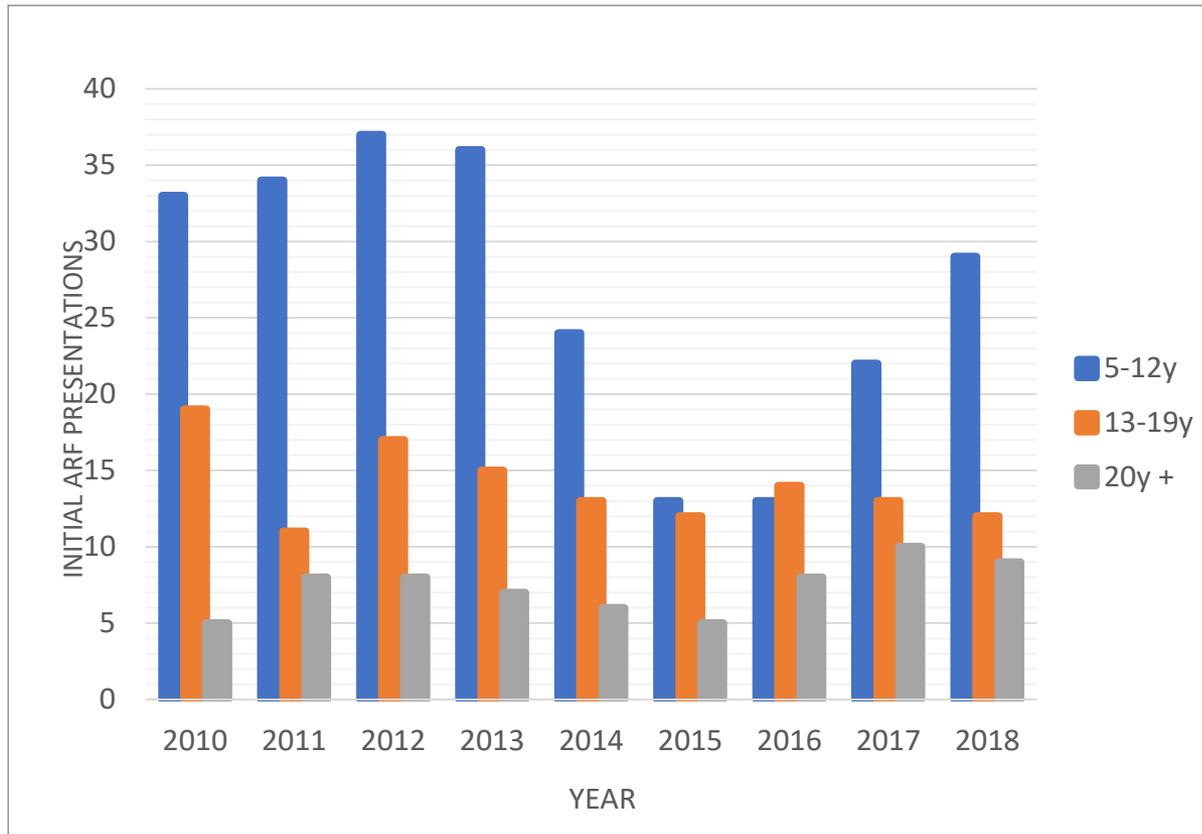
58% reduction in rates for first presentation ARF 61 schools, year 1 -8, Before and after design

These evaluations were done over a time period where other aspects of the RFPPP were being delivered- rapid response clinics, health promotion campaigns and Healthy homes initiative

Initial ARF notifications (ARPHS data)



Initial ARF notifications (ARPHS data)



*2018 is YTD end of
September

What happened?

Did the programme work but then something changed in 2017?

- Moved from 5 to 3 days a week asking re sore throats (start 2017) although sore throat management available every day
 - Change in providers (start 2017)
 - Dental crisis (start 2017)
 - National health promotion messages ceased
 - ? Adherence changed
 - ?Change in circulating strains
 - ?Housing conditions- increase in meningococcal disease as well
- or**

Did the programme ever work?

CRITICALLY we do not know what the counterfactual would have been

Can school based primary prevention approaches work?

- Northland
- Waitemata
- Auckland
- Waikato
- Lakes
- Bay of Plenty
- HauoraTairawhiti
- Hawkes Bay
- Capital and Coast
- Hutt Valley

Where to from here?

- Depends on local demography and rates of RF whether school based swabbing services are cost effective and should be considered part of a prevention strategy
- Devil is in the detail of delivery
- Need to be very careful when evaluating school based services that elements of each programme are well understood including timing of the start of the programme in relation to the RFPP-many have been long standing
- Affordability in the context of other child health priorities
- Rheumatic fever specifically vs a lever to improve child health more generally

