

Interim Evaluation Sore throat component of the NZ Rheumatic Fever Prevention Programme

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Summer School Seminar





Outline of presentation

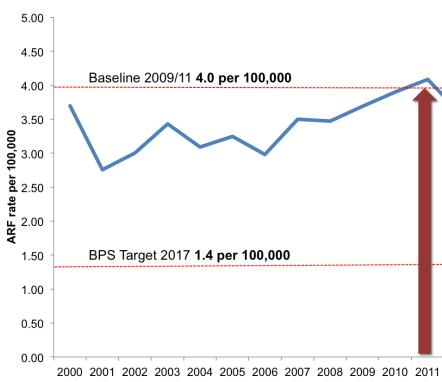
- Background to the NZ Rheumatic Fever Prevention Programme
- Epidemiological trends
- Effectiveness analysis of school-based sore throat component
- Laboratory analysis
- Discussion of key findings





Background

- NZ Rheumatic Fever Prevention Programme (RFPP) set up in 2011, ARF incidence became a Better Public Service target in 2012
- 11 North Island District Health Boards (DHBs) with high risk populations in the RFPP with 10 implementing school-based sore throat management service
- Request for proposals for an evaluation of sore throat management component of the RFPP issued in November 2014 by MoH
- ESR/Otago University were selected, supported by broad multi-disciplinary team from NZ & Australia

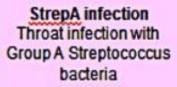






Programme logic for the RFPP

Poor environmental and economic conditions





Rheumatic fever
(180+ cases/yr)
Auto-immune response in
0.3-3% of untreated strepA
infection



Recurrence of rheumatic fever



Rheumatic heart disease

- Reduce crowding in housing
- Healthy communal living habits, especially in homes and schools
- Prevent transmission of Strep A (STOP IT)
- Housing programmes where eligibility includes RF riskfactors
- Guidance to professionals in contact with at-risk people about when and how to refer them to housing programmes
- Targeted communications telling people how to cough/sneeze, sleep

- Targeted testing
- Diagnosis and quick action & treatment through any contact with any health service
- · Inform people when to seek treatment

Treat strep A quickly and effectively

(TREAT IT)

Guidance to health and social

risk and what action to take

when to seek treatment

care

Sore throat assessment and treatment

in targeted schools and communities

professionals who work with at-risk

Targeted communications telling

people about how to identify those at

people how to reduce their risks and

Remove barriers to accessing testing

& treatment in community and primary

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Prevent recurring RF

theirfamilies/whānau

Ensure patients take

preventative treatments

including long acting penicillin

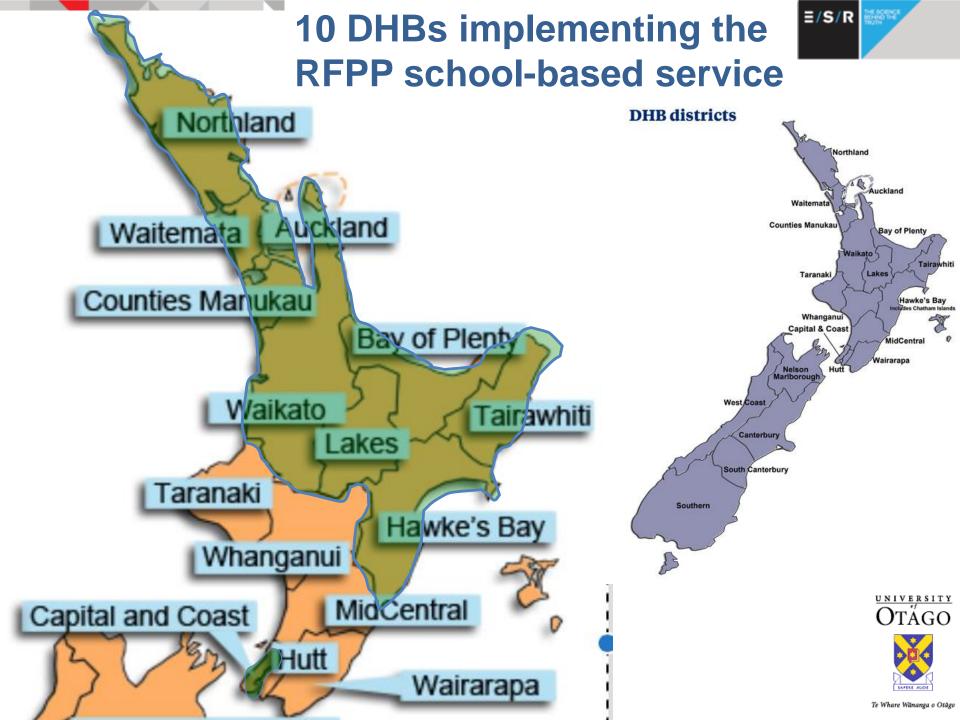
Better diagnosis & reporting

Preventative interventions for

- Guidance to health professionals about how to diagnosing and treating, including for the families
- Active patient management systems
- Targeted communications, incentives and remove barriers to encourage patients to take treatments
- Use case histories to discover risk factors, early warning signs, and assess system performance



Rheumatic fever and rheumatic heart disease are treated elsewherein health sector but not as part of this programme



Interim Evaluation – what did we do?

- Descriptive epidemiological analysis (to June 2015)
- Effectiveness analysis (to 2014)
- Laboratory data analysis (to 2014)
- Economic analysis
- Root cause analysis





Implementation of school-based sore throat management service of RFPP by DHB and time

DHB	Jul-Dec		2012	2013	2013	2014	2014
and		Jan-June	Jul-Dec	Jan-June	Jul-Dec	Jan-June	Jul-Dec
Northland							
Hawkes							
Bav							
Capital & Coast							
Coast							
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Counties Manukau							
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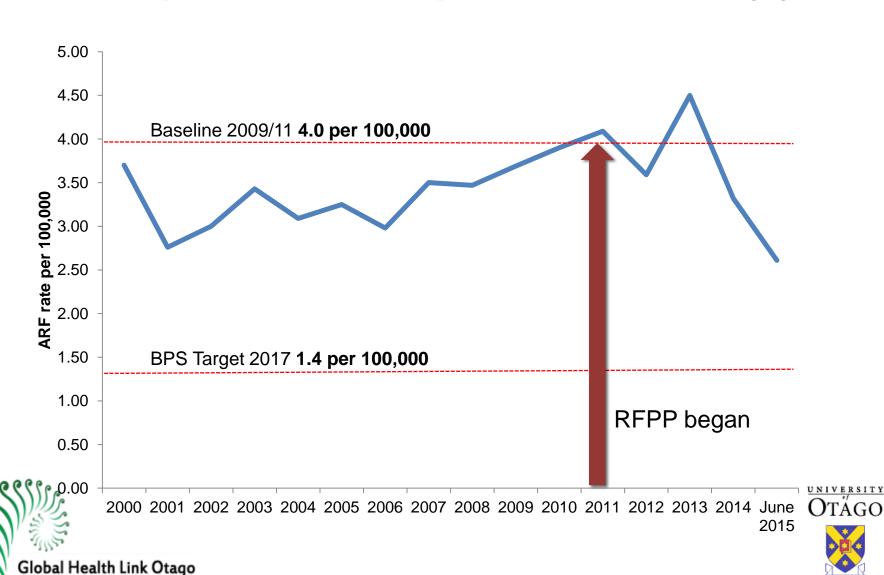


Waitemata



Te Whare Wananga o Otago

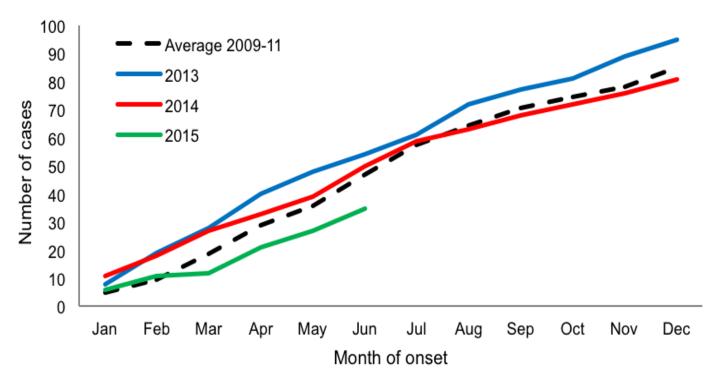
Total first episode ARF hospitalisation rates by year



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Cumulative incidence ARF notifications in children 5–12 years, in the 10 RFPP DHBs implementing a school-based service

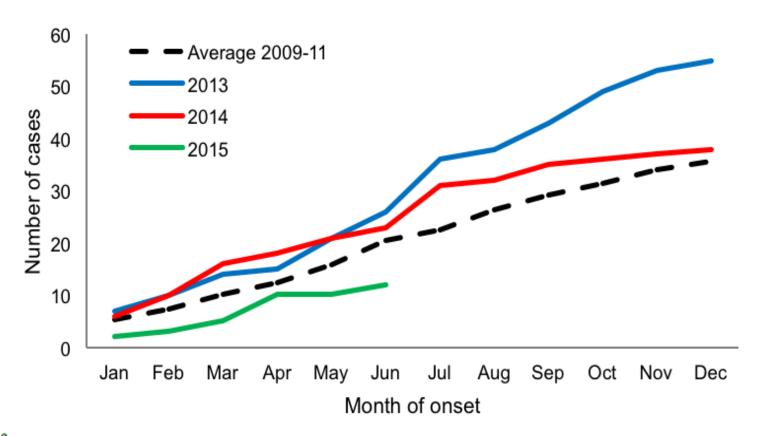








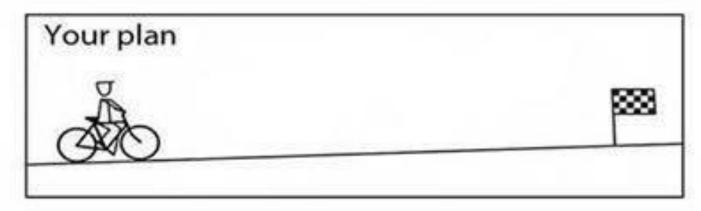
Cumulative incidence of ARF notifications in children 13–19 years for 10 RFPP DHBs

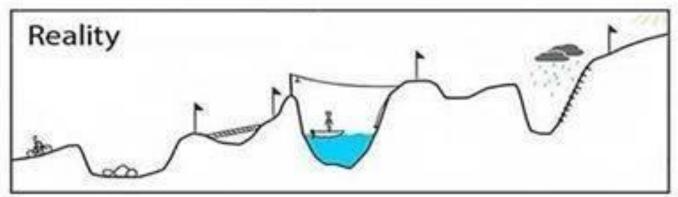






Effectiveness analysis









Cohort design: not-exposed and exposed analysis

Not exposed person-time

18,960,113 person-days Cases not

Cases not exposed

n=52

....

Cases exposed n=79

Exposed person-time

34,798,158 person-days

Cases diagnosed within 1 month of school-clinic start date (partially exposed and excluded from analysis n=6)





Effectiveness analysis findings

Scenario	cases exposed/ person days exposed	cases non- exposed/ person days not exposed	ARF decline (proportion)	Lower confidence limit	Upper confidence limit	Statistical Significance
10 DHBs	70/	5 2/				

Schools with 19/ 52/ -0.170.17 0.42 No 18,960,113 34,798,158 a sore throat service

CMDHB 33/ 31/ Schools with 0.31 -0.13 0.58 No 15,273,980 9,945,963 a sore throat service



Number of

Number of





Laboratory analysis



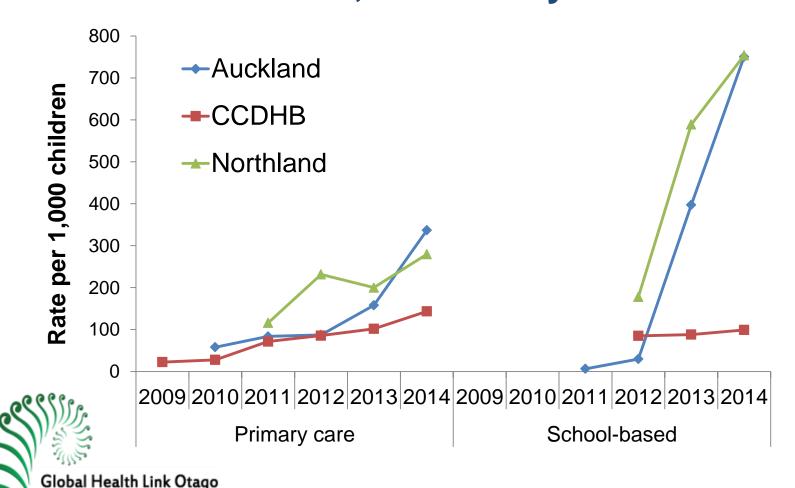






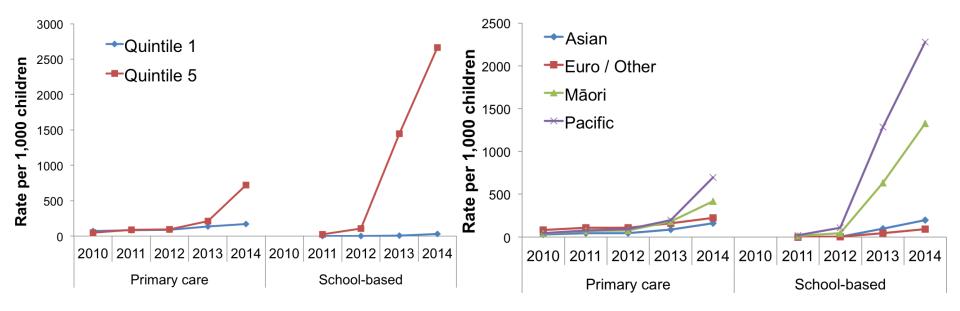
Te Whare Wänanga o Otago

Annual rates of throat swabbing in children aged 5–14 years in Northland, Auckland, and CCDHB, 2009–2014, stratified by source





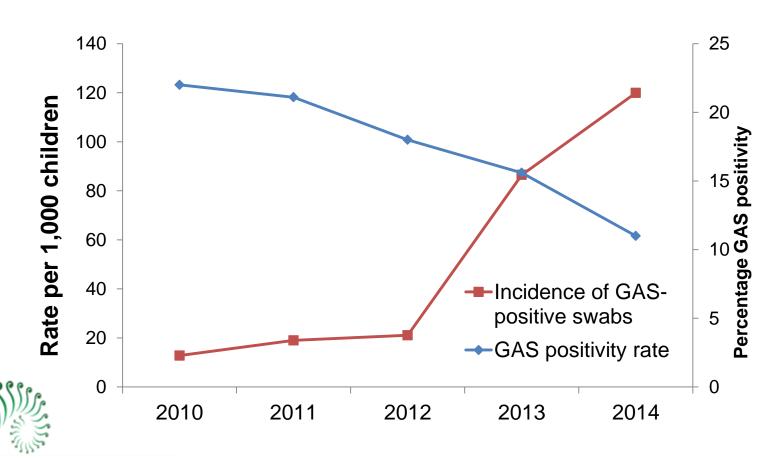
Annual rates of throat swabbing in children aged 5–14 years in Auckland region, stratified by source, NZDep quintile, and ethnicity 2010–14







Annual rates of GAS positive throat swabs and GAS positivity rate from throat swabs from children aged 5-14 years in Auckland region, 2010-14





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Limitations

- Monitoring not standardised and reporting on deliverables and indicators was inadequate until recently.
- RFPP implementation varied considerably across DHB regions - coverage and management, frequency of throat swabbing offered, support for adherence to antimicrobial treatment, management of skin infections
- If we see a significant & sustained decline in ARF incidence it will be difficult to be certain what has caused this:
 - The RFPP includes multiple components
 - We do not have a large comparison population who are similar to the intervention group
 - We are using observation data



Te Whare Wänanga o Otago



Looking ahead

- A final evaluation incorporating a further year of data (2015) and using individual level data could be considered.
- Further assessment of the RFPP could be strengthened with additional data not available for this interim evaluation e.g.
 - laboratory administrative marker for throat swabs and a record of who attends rapid response clinics
 - recording NHIs of all children consenting to be part of school-based clinics
 - good quality monitoring data for both school-based and rapid response clinics



Te Whare Wänanga o Otago

Acknowledgements

Interim Evaluation team:

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http://www.health.govt.nz/publication/interim-evaluation-sore-throat-management-component-new-zealand-rheumatic-fever-prevention-programme

