



# Rheumatic Fever

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## New Zealand College of Public Health Medicine Policy Statement

### Policy Statement

The New Zealand College of Public Health Medicine (NZCPHM) recognises that the incidence and consequent burden of rheumatic fever in New Zealand are unacceptably high and contribute to significant inequalities in health.

The NZCPHM supports the New Zealand Government's Better Public Services target to reduce rates of rheumatic fever by two-thirds by 2017<sup>1</sup>, and considers that the ultimate goal is to eliminate inequities in rheumatic fever altogether.<sup>2,3</sup>

NZCPHM supports a comprehensive approach to the elimination of the primary drivers of rheumatic fever through measures to reduce household crowding and provide more appropriate and accessible healthcare for New Zealanders who are at the greatest risk for rheumatic fever.

### Background

Rheumatic fever is a serious but preventable illness. It is an inflammatory disease that can occur after an autoimmune response to an untreated group A streptococcal (GAS) throat infection in susceptible people. Up to 3% of untreated GAS infections can lead to rheumatic fever.<sup>4-6</sup> Rheumatic fever affects the heart, joints, brain and skin, and although most of the symptoms of rheumatic fever disappear on their own, the inflammation of the heart valves can cause scarring, leading to rheumatic heart disease.

In New Zealand rheumatic fever mainly affects Māori and Pacific children and young people aged 4 to 19 years living in low socio-economic areas of the North Island and/or in crowded households.<sup>1,7,8</sup> In 2014, there were 153 people admitted to hospital with an initial attack of rheumatic fever – a rate of 3.4 per 100,000. The majority of people were Māori (65 people, 9.3 per 100,000) and Pacific (78 people; 26.8 per 100,000).<sup>1</sup> This inequity is unacceptable.

Rheumatic fever has been largely eliminated from most other OECD countries. Several countries have successfully reduced their incidence of the disease with the use of comprehensive programmes.<sup>9-12</sup> With our longstanding high rates of rheumatic fever in vulnerable population groups, New Zealand is a clear outlier among comparable nations.

The costs associated with rheumatic fever and rheumatic heart disease are significant and impact the person themselves, their whānau, their community and New Zealand as a whole. These costs result from repeated and prolonged hospitalisation, resources for medical prophylaxis and treatment, surgical intervention, negative physical and psychological experience, disruption of the lives of cases and their families, and often premature death.<sup>13</sup>

## Rheumatic Fever Prevention

In order to reduce the incidence of rheumatic fever it is important to reduce the transmission of GAS throat infections and to ensure that any GAS throat infections that do occur are quickly assessed and treated with appropriate antibiotics. A single episode of rheumatic fever can cause permanent and lifelong damage to the heart (rheumatic heart disease) and recurrent episodes can further exacerbate this damage. Therefore the prevention of recurrences is also an important component in reducing the burden of rheumatic fever.

### Sore throat management

It is difficult to differentiate between a viral or bacterial cause of a sore throat. Therefore it is important that all sore throats in high risk populations (Māori and Pacific children and young people) are assessed quickly by health professionals and appropriately managed. The 2013/14 New Zealand Health Survey found that Māori and Pacific children were both 1.4 times as likely not to have accessed primary health when they needed it during the previous 12 months as compared with non-Māori and non-Pacific children.<sup>14</sup> The barriers to accessing primary health care services included cost, lack of transport, lack of childcare for other children, and inability to get a timely appointment.

Measures to improve access to primary care services will contribute to sore throat management in high risk populations. The implementation of sore throat clinics in schools and provision of free, no appointment needed services in high risk areas are examples of services that increase primary care access. The introduction of free general practice visits and prescriptions for children aged < 13 years from 1 July 2015 will contribute to reducing the cost barriers associated with access to primary care services. However, it is acknowledged that access to care is a complex concept and financial cost at the time of consultation does not represent the only barrier for many families. Other important barriers to primary care access also exist and it is necessary to address these, including ensuring that any service provided is culturally appropriate.

Improving health literacy is also important in reducing the incidence of rheumatic fever. This includes raising public awareness about the link between a sore throat and rheumatic fever, the importance of getting sore throats checked quickly, and taking a full course of antibiotics as prescribed.

### Reducing transmission of GAS

Because up to 40% of people who contract rheumatic fever do not remember having a sore throat<sup>15,16</sup>, a focus solely on sore throat management and treatment will not have a significant impact on reducing rheumatic fever. Group A streptococcal infections (with or without symptoms of a sore throat) are easily spread person-to-person via contact with respiratory tract secretions.<sup>17</sup> Crowded living conditions facilitate the spread of infections from person to person, therefore reducing household crowding is an important strategy for reducing the transmission of GAS. Reducing crowding will also have an impact on reducing other infectious diseases.<sup>18</sup>

### Preventing recurrences

The cornerstone of the prevention of further attacks of rheumatic fever and rheumatic heart disease is antibiotic prophylaxis. Prophylaxis consists of the regular administration of antibiotics (usually intramuscular penicillin) to prevent further GAS throat infections.

This prevention is best practiced in an organised, coordinated way. Regular auditing of practice is important to monitor late delivery of prophylaxis and loss to follow-up. Currently, there is no consistent mechanism of delivery of secondary prevention services across the country. In some areas, prophylaxis is delivered by the DHB/Public Health Service using a local disease register, and in other areas, both by DHB/Public Health Service and general practitioners. The variation in service delivery both within and between DHBs, and the lack of a national patient management system, causes problems for auditing practice, timely delivery of secondary prophylaxis, and sharing of information between health professionals. Urgently needed are systems that allow health professionals to easily share information, both within and between DHBs, and ensure appropriate follow-up and delivery of secondary prophylaxis, particularly for people who move frequently between DHBs.

### **Monitoring, surveillance and research**

Continued monitoring, surveillance and research are needed to understand the aetiology of rheumatic fever and evaluate any changes in ARF incidence due to the implementation of primary prevention activities.<sup>19</sup> Screening programmes should meet screening best practice, as stated in the NZCPHM's screening policy statement.<sup>20</sup>

### **Summary**

Rheumatic fever is a cause of unacceptable health inequity in New Zealand. To address and reduce this inequity, a comprehensive approach is required that includes strategies to:

- Increase awareness of the importance of getting sore throats checked in high-risk populations
- Reduce the transmission of GAS throat infections in high risk populations by reducing household crowding
- Improve access to primary care for high risk populations
- Ensure health professionals manage high risk groups with appropriate antibiotics

In addition, the following actions are also recommended:

- Ongoing surveillance and monitoring (including timely notifications)
- Continued research into the causes of rheumatic fever and the effectiveness of prevention programmes<sup>19</sup>
- Investment in a national patient management system to allow health professionals to share information to ensure appropriate follow-up of people with rheumatic fever

### **Links with other NZCPHM policies**

Health Equity

Māori Health (forthcoming)

Pacific Peoples' Health (forthcoming)

Child Poverty and Health

Housing

## References

1. Ministry of Health. Progress on the Better Public Services rheumatic fever target [updated 4 March 2015; cited June 2015]. Available from: <http://www.health.govt.nz/about-ministry/what-we-do/strategic-direction/better-public-services/progress-better-public-services-rheumatic-fever-target>
2. Advice for the Ministry of Health for best practice for rheumatic fever control: summary of international workshop on rheumatic fever/rheumatic heart disease control in New Zealand. 2009-10. Available at: <http://www.paediatrics.org.nz/files/2010/Advice%20for%20the%20Ministry%20of%20Health%20for%20Best%20Practice%20for%20Rheumatic%20Fever%20Control-08%2006%2010.pdf>
3. NZCPHM. Health Equity Policy Statement. Wellington: NZ College of Public Health Medicine, 2012. Available at: <http://www.nzcphm.org.nz/policy-publications>
4. Milne RJ, Lennon DR, Stewart JM, Vander Hoorn S, Scuffham PA. Incidence of acute rheumatic fever in New Zealand children and youth. *J Paediatr Child Health*, 2012;48:685-691.
5. New Zealand Rheumatic Fever Guidelines Group. New Zealand Guidelines for Rheumatic Fever. Part 1: Diagnosis, management, and secondary prevention. Heart Foundation of New Zealand and Cardiac Society of Australia and New Zealand, 2006. Available from: [http://www.heartfoundation.org.nz/uploads/Rheumatic%20fever%20guideline%201\(2\).pdf](http://www.heartfoundation.org.nz/uploads/Rheumatic%20fever%20guideline%201(2).pdf)
6. Jaine R, Baker M, Venugopal, K. Epidemiology of acute rheumatic fever in New Zealand 1996-2005. *J Paediatr Child Health*, 2008;44:564-571.
7. NZCPHM. Housing Policy Statement. Wellington: NZ College of Public Health Medicine, 2013. Available at: <http://www.nzcphm.org.nz/policy-publications>
8. Jaine R, Baker M, Venugopal K. Acute Rheumatic Fever Associated With Household Crowding in a Developed Country. *Pediatr. Infect. Dis. J.*, 2011; 30(4):315-319
9. Arguedas A, Mohs E. Prevention of rheumatic fever in Costa Rica. *J Pediatr*, 1992;121:569-72.
10. Nordet P, Lopez R, Duenas A and Sarmiento L. Prevention and control of rheumatic fever and rheumatic heart disease: the Cuban experience (1986-1996-2002). *Cardiovasc J Afr*, 2008;19(3):135-140.
11. Bach JF, Chalons S, Forier E et al. 10-year educational programme aimed at rheumatic fever in two French Caribbean Island. *Lancet*, 1996;347:644-648.
12. Gordis L. Effectiveness of comprehensive-care programs in preventing rheumatic fever. *N Eng J Med*, 1973;289:331-335.
13. Milne RJ, Lennon D, Stewart JM, Vander Hoorn S, Scuffham PA. Mortality and hospitalisation costs of rheumatic fever and rheumatic heart disease in New Zealand. *J Paediatr Child Health* 2012;48:692-7. Available from: <http://onlinelibrary.wiley.com/doi/10.1111/j.1440-1754.2012.02446.x/abstract>
14. Ministry of Health. Annual Update of Key Results 2013/14: New Zealand Health Survey. Wellington: Ministry of Health, 2014. Available from: <http://www.health.govt.nz/publication/annual-update-key-results-2013-14-new-zealand-health-survey>
15. Kerdemelidis M, Lennon DR, Arroll B, Peat B, Jarman J. The primary prevention of rheumatic fever. *J Paediatr Child Health*, 2010;46:534-548.
16. Dajani AS. Current status of nonsuppurative complications of group A streptococci. *Pediatr Infect Dis J.*, 1991 Oct;10(10 Suppl):S25-27.
17. American Academy of Pediatrics. Group A streptococcal infections. In: Pickering LK, Baker CJ, Kimberlin DW, Long SS, eds. *Red Book. 2012 Report of the Committee on Infectious Diseases*. Elk Grove Village, IL: American Academy of Pediatrics, 2012. pp668-680.
18. Baker M, Howden-Chapman P. The impact of household crowding on infectious disease risk in New Zealand: Literature review and synthesis of evidence. Wellington: He Kainga Oranga/ Housing and Health Research Programme, University of Otago, 2012.
19. Lennon D, Stewart J. An important investment to control Acute Rheumatic Fever needs to run its course. *N Z Med J.* 2015 Jun 12;128(1416):6-9. <http://www.nzma.org.nz/journal/read-the-journal/all-issues/2010-2019/2015/vol-128-no-1416/6557>

20. NZCPHM. Screening Policy Statement. Wellington: NZ College of Public Health Medicine, 2012. Available at: <http://www.nzcphm.org.nz/policy-publications>

### **Further information**

Heart Foundation of New Zealand. New Zealand Guidelines for Rheumatic Fever: Diagnosis, Management and Secondary Prevention of Acute Rheumatic Fever and Rheumatic Heart Disease: 2014 Update. Available at:

[www.heartfoundation.org.nz](http://www.heartfoundation.org.nz) or

[http://www.heartfoundation.org.nz/uploads/HF2227A\\_Rheumatic\\_Fever\\_Guideline\\_v1-complete.pdf](http://www.heartfoundation.org.nz/uploads/HF2227A_Rheumatic_Fever_Guideline_v1-complete.pdf)

Heart Foundation of New Zealand. Group A Streptococcal Sore Throat Management Guideline. 2014 Update. Auckland, Heart Foundation of New Zealand. Available at:

[http://www.heartfoundation.org.nz/uploads/sore\\_throat\\_guideline\\_14\\_10\\_06\\_FINAL-revised.pdf](http://www.heartfoundation.org.nz/uploads/sore_throat_guideline_14_10_06_FINAL-revised.pdf)

Heart Foundation of New Zealand. Proposed Rheumatic Fever Primary Prevention Programme. Auckland, Heart Foundation of New Zealand, 2014. Available at:

[http://www.heartfoundation.org.nz/uploads/Rheumatic%20Fever%20Guideline%203\(6\).pdf](http://www.heartfoundation.org.nz/uploads/Rheumatic%20Fever%20Guideline%203(6).pdf)

Heart Foundation of New Zealand. Algorithm 3: Guide for the duration of secondary prophylaxis in acute rheumatic fever (ARF). Auckland, Heart Foundation of New Zealand, 2015. Available at:

[http://www.heartfoundation.org.nz/uploads/Algorithm\\_3\\_secondary\\_prophylaxis.pdf](http://www.heartfoundation.org.nz/uploads/Algorithm_3_secondary_prophylaxis.pdf)

Heart Foundation of New Zealand. Algorithm 4: A Guide for Sore Throat Management. Auckland, Heart Foundation of New Zealand, 2015. Available at:

[http://www.heartfoundation.org.nz/shop/product\\_view/872/algorithm-4-a-guide-for-sore-throat-management](http://www.heartfoundation.org.nz/shop/product_view/872/algorithm-4-a-guide-for-sore-throat-management) (accessed July 2015)

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