SOUTH ISLAND RHEUMATIC FEVER
PREVENTION AND MANAGEMENT PLAN
For Nelson-Marlborough, West Coast, Canterbury, South Canterbury and
Southern DHBs
For the period 20 Oct 2013 – 30 June 2017

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**SECTION 1: OVERVIEW OF RHEUMATIC FEVER IN THE SOUTH ISLAND**

Most sore throats are viral, but approximately 7-37% are caused by Group A Streptococcus (GAS) depending on the study/setting (7% Lennon et al 2009 - South Auckland setting) (up to 37% of paediatric sore throats in international meta-analysis caused by GAS in Shaikh et al 2010).

Approximately 1-3% (Rammelkamp 1952) of untreated or incorrectly treated Group A Streptococcal sore throats will go on to develop rheumatic fever, a reaction which is thought to be autoimmune. Rheumatic fever generally occurs approximately 14-21 days after initial untreated GAS infection, but it can be more rapid.

Rheumatic fever is preventable by treating the initial GAS sore throat with correct antibiotics (Robertson et al 2005). Rheumatic fever (RF) is a serious illness that can affect joints, the heart, the skin, and cause neurological symptoms.

While the symptoms of rheumatic fever may disappear on their own, the inflammation can cause rheumatic heart disease, where there is scarring of the heart valves. People with rheumatic heart disease may need heart valve replacement surgery, and it can cause premature death.

The South Island has a much lower incidence of rheumatic fever than the rest of New Zealand. Over the three years from 1 July 2009 to 30 June 2012, the South Island’s rate of initial hospitalisations for rheumatic fever was 0.4 per 100,000 people – compared with 4.0 per 100,000 for the whole of New Zealand.

### 1.1 INITIAL ATTACKS OF RHEUMATIC FEVER IN THE SOUTH ISLAND

Initial attack statistics for rheumatic fever by financial year are shown in Table 1 below. From the Ministry of Health’s statistics, for the 12 months 1 July 2012 – 30 June 2013, there were 7 cases of rheumatic fever initial attack hospitalisations in the South Island (Nelson Marlborough DHB 1, Canterbury DHB 5, Southern DHB 1).

**TABLE 1: INITIAL ATTACK HOSPITALISATIONS FOR RHEUMATIC FEVER – MINISTRY OF HEALTH TARGETS AND PERFORMANCE IN THE COMBINED SOUTH ISLAND DHBS – BY FINANCIAL YEAR (1 JULY – 30 JUNE)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of patients</th>
<th>Rate per 100,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline – three-year average 2009/10-2011/12</td>
<td>NA</td>
<td>5</td>
</tr>
<tr>
<td>2012/13</td>
<td>5</td>
<td>7 (Nelson Marlborough 1, Canterbury 5, Southern 1) (From Ministry data)</td>
</tr>
<tr>
<td>2013/14 as at 19 Dec 2013</td>
<td>4</td>
<td>4 (Canterbury 4)</td>
</tr>
<tr>
<td>2014/15</td>
<td>3</td>
<td>NA</td>
</tr>
<tr>
<td>2015/16</td>
<td>2</td>
<td>NA</td>
</tr>
<tr>
<td>2016/17</td>
<td>2</td>
<td>NA</td>
</tr>
</tbody>
</table>

1 Rates per 100,000 are calculated using the following population estimates: 1,044,078 for 2012/13 and 1,050,570 for 2013/14.
1.2 Recurrences (Relapses) of Rheumatic Fever in the South Island

For the DHB year 1 July 2012 – 30 June 2013, and from 1 July 2013 to present (19 December 2013), no recurrences of rheumatic fever have been notified to Medical Officers of Health in the South Island.

1.3 Commitment

The South Island DHBs are committed to keeping at low levels, and if possible reducing, the number of new cases and relapses of rheumatic fever occurring in the South Island.

Section 2: Treating Group A Streptococcal Throat Infections

The actions that the South Island DHBs are taking to treat Group A streptococcal throat infections are outlined in sections 2.1 and 2.2 below. A guideline for the management of sore throat consistent with the Heart Foundation (2008) Management of Group A Streptococcal Sore Throat guideline is available on HealthPathways. This will bring consistency of management across general practice. HealthPathways will become available across most of the South Island.

The South Island DHBs Medical Officers Health will work with local clinicians and GP groups in their DHB areas to raise awareness around GAS sore throat and rheumatic fever.

2.1 Ensuring Health Professionals Likely to See High-Risk Children Follow the Most Up-To-Date Sore Throat Management Guidelines

Any updates of the Heart Foundation’s Sore Throat guidelines will be notified to Health Pathways at the soonest opportunity, for the information to be circulated to the DHBs using the Pathways. Guideline updates will vary between the regions but a small revision would only require a few days, while a more in-depth revision would require consideration by the relevant workstream clinicians and may take a number of weeks.

Canterbury DHB

Most general practices have access on their computer desktops to HealthPathways guidelines for the diagnosis and management of Sore Throat/Tonsillitis, and Rheumatic Fever. These are consistent with the Heart Foundation (2008) Management of Group A Streptococcal Sore Throat guideline and the (2006) Diagnosis and Management of Rheumatic Fever guideline.

West Coast DHB

Most general practices have access on their computer desktops to HealthPathways on the West Coast, the Sore Throat/Tonsillitis and RF Pathways from Canterbury DHB are available, they will be customised when time allows.

South Canterbury

All general practices in South Canterbury have access to HealthPathways, the Canterbury versions are available of the Sore Throat and RF pathways, these have not yet been localised.

Nelson Marlborough DHB

Most general practices have access on their computer desktops to HealthPathways for the diagnosis and management of Sore Throat/Tonsillitis. The existing Tonsillitis Pathway has been revised to include information about sore throat management and the information and recommendations are now consistent with the Heart Foundation (2008) Management of Group A Streptococcal Sore Throat guideline.
Southern DHB
Southern DHB is in the process of rolling out the HealthPathways platform and customising the Canterbury Pathways. When this is launched in early 2014 it will act as the definitive source of up to date local advice on the management of conditions of public health importance, including the management of sore throats in high-risk children.

2.2 Ensuring People with Group A Streptococcal Throat Infections Complete a Full Course of Antibiotic Treatment (Treatment Compliance)

Canterbury, South Canterbury, Nelson Marlborough and West Coast DHBs
Most general practices utilise HealthPathways, which follow the Heart Foundation guidelines and recommend 10 days of appropriate antibiotics. The Pathways have been updated to recommend that GPs discuss the importance of completing the course of antibiotics, as stated:

“All antibiotics below are given for 10 days to prevent rheumatic fever. Remind patients to complete the full 10 day course even if they feel well, to ensure eradication of the bacteria and to reduce the risk of rheumatic fever.”

Southern DHB
The use of Health Pathways from 2014 will ensure that GPs are aware of the need for compliance at the point of prescribing. GPs will assess on a case by case basis the need for additional measures to support treatment compliance.

The South Island DHBs are all willing to work with the Ministry and implement any initiatives the Ministry may develop, to improve adherence of antibiotics for GAS sore throats.

National Initiatives
At the request of the South Island DHBs, the Pharmaceutical Society have been asked to include a section in their newsletter to pharmacists, about the importance of encouraging patients to complete their course of antibiotics.
SECTION 3: EFFECTIVE FOLLOW-UP OF IDENTIFIED RHEUMATIC FEVER CASES

3.1 ENSURING PATIENTS WITH A PAST HISTORY OF RHEUMATIC FEVER RECEIVE 4 WEEKLY ANTIBIOTICS NOT MORE THAN 5 DAYS AFTER THEIR DUE DATE

There is good evidence from a Cochrane review for three-weekly penicillin injections to be given to prevent rheumatic fever recurrence (Mayemba and Mayosi 2002). However, four-weekly (28 days) injections are considered acceptable in New Zealand if strictly adhered to. Any time over four weeks (28 days) is associated with higher rheumatic fever relapse rates.

Error! Reference source not found. below shows the number of known patients with rheumatic fever who should be on prophylactic antibiotics.

TABLE 2: NUMBER OF PATIENTS REQUIRING PROPHYLACTIC ANTIBIOTICS FOR RHEUMATIC FEVER – SOUTH ISLAND COMBINED DHBS – AS AT 23 SEPTEMBER 2013

<table>
<thead>
<tr>
<th>DHB</th>
<th>Number of patients requiring prophylactic antibiotics for rheumatic fever</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nelson Marlborough</td>
<td>4</td>
</tr>
<tr>
<td>Canterbury</td>
<td>21 (including two in Ashburton)</td>
</tr>
<tr>
<td>West Coast</td>
<td>1</td>
</tr>
<tr>
<td>South Canterbury</td>
<td>0</td>
</tr>
<tr>
<td>Southern</td>
<td>5 (although one is a temporary resident)</td>
</tr>
<tr>
<td>South Island Total</td>
<td>31</td>
</tr>
</tbody>
</table>

The actions that the South Island DHBs are taking, is to ensure patients with a past history of rheumatic fever receive monthly antibiotics not more than five days after their due date, are outlined below.

CANTERBURY DHB

Currently as at 19 December 2013 there are 21 patients who are or should be receiving penicillin prophylaxis for rheumatic fever in Canterbury.

General Practice are to provide prophylactic antibiotic to those patients identified with Rheumatic Fever. The service includes the following components:

- **Free monthly penicillin injection administration for RF patients:** Patients can opt to attend their general practices for penicillin injections monthly. Those who are unable to attend or prefer an outreach system for their penicillin injection to be given to them at home or work, can currently have this arranged by their GPs at no additional cost to the patient or GP (this comes under existing contracts in Canterbury).

- **Free medication:** Penicillin and lignocaine can currently be ordered on Practitioner Supply Order (PSO) at no cost to the patient or general practice.

- **Recall:** Patients should receive their penicillin injections between days 21 and 28. The RF Pathway states practices should consider a ‘text to remind’ on day 21 and phone contact on day 24 or 25 to ensure compliance.
Free optional three-monthly general practitioner review visits for RF patients. To provide holistic medical care, the cost of four GP appointments has been factored into the subsidised package of care.

Annual review of RF patients by hospital specialists: Two infectious disease specialists have agreed to annually review all RF patients who should be on prophylactic antibiotics (if they are referred, and if the patients are not already under another specialist). The HealthPathway will prompt GPs to refer for this.

Yearly dental reviews of RF patients by Hospital & Community Dental Service: Patients with rheumatic fever, who are or should be on penicillin, will be offered an oral assessment, preventive dental care and treatment. The Hospital Dental Service will coordinate and ensure follow up dental care is available for the duration of the time patients are on penicillin. The dental care will be free and provided by the Hospital Dental Service, general dental practitioner with an adolescent oral health contract or Community Dental Service.

Follow-up of late attendees: If patients are more than 2-3 days late in attending their injections, and the problem is not able to be resolved, the patient can be referred by the GP to Acute Demand at the Bealey Avenue 24 Hour Surgery. The nurses at Acute Demand can perform an outreach function and attempt to locate the patient and administer the late penicillin. This service is free to patients and practices. The aim is for patients to receive their penicillin injections on or before 4 weeks and no later. If the patient misses two months in a row, or there are significant concerns, the patient can be referred to either the Whānau Link Coordinator at Pegasus Health, or to the Pegasus Community workers, to attempt to resolve any outstanding issues at home. Any patients who are regularly late attending may have regular monthly outreach injections arranged by the GP (via District Nursing). These procedures are outlined in the Health Pathway for Rheumatic Fever under the heading ‘Non-attendance issues’.

WEST COAST DHB
As at 19 December 2013, one patient with RF was living on the West Coast, receiving free penicillin injections from a DHB owned general practice.

Free penicillin injections monthly, and free optional 3 monthly review appointments for RF patients on penicillin: this service is provided free by DHB owned general practices. The $500 payment (as for Canterbury DHB patients) for patients who should be on penicillin, can be arranged for West Coast RF patients also.

Yearly dental reviews of RF patients: patients from the West Coast are also covered by the same arrangement with the Hospital Dental Service in Canterbury.

Annual review of RF patients by hospital specialists: A paediatrician (Dr John Garrett) visits the West Coast and can follow RF outpatients.

Follow up of late attendees: Follow up for late penicillin injections can be provided by: the West Coast PHO Navigator service, Public Health nurses, or rural nurse specialists (depending on the arrangements in place at each practice).

NELSON MARLBOROUGH DHB
As at 19 December 2013 there were 4 patients requiring antibiotics for RF in Nelson Marlborough.

Free penicillin injections monthly: this service is provided free by the DHB Public Health Service. Currently one RF patient is receiving the service through District Nursing and one RF patient who has refused IM injections is receiving oral penicillin from his GP.
• **Annual review of RF patients by hospital specialists:** This is available from local paediatricians or the ID physician. For those patients being prophylaxed by the Public Health Service, the Public Health Nurse ensures referrals have been arranged. It is intended that the register will be used to check that all RF cases have an annual referral.

• **Yearly dental reviews of RF patients:**
  - Children of preschool, primary and intermediate school age will be reviewed annually or more frequently if indicated by their oral health through the Community Oral Health Service. Adolescent rheumatic fever cases aged up to 18 years are eligible for care under the Adolescent Oral Health scheme, and are seen by their general dental practitioner. These services are provided at no charge to the patient. For adolescents who are not enrolled with a private dentist the Nelson Marlborough regional adolescent oral health coordinator should be advised to ensure they do receive appropriate regular dental care.

• **Adult Rheumatic fever cases on antibiotic prophylaxis may be referred by general medical practitioners or relevant medical specialists for dental review through the NMDHB dental departments. These services are provided at no charge to the patient.**

• **Follow up of late attendees:** Follow up for late penicillin injections is provided by the Public Health Nurses for those RF cases for whom they are giving the IM injections and also for other cases if requested by a GP.

**SOUTH CANTERBURY DHB**

As at 19 December 2013 there were no known patients requiring antibiotics for RF in South Canterbury. If any patients are diagnosed with RF and needing antibiotics, or move to the DHB, the South Canterbury DHB has agreed to fund an approximately $500 payment to any RF patients to provide the same level of service as that in Canterbury. These patients would receive:

• **Free penicillin injections monthly, and free optional 3 monthly review appointments for RF patients on penicillin:** this service would be available for any South Canterbury DHB patients with RF.

• **Yearly dental reviews of RF patients:** (SCDHB are yet to consider whether this would be funded).  

• **Annual review of RF patients by hospital specialists:** patients would be referred for annual hospital outpatient review by an appropriate specialist.

• **Follow up of late attendees:** Follow up for late penicillin injections would be arranged by the Public Health Nurses (if the need arose).

**SOUTHERN DHB**

As at 19 December 2013 SDHB had 5 cases receiving prophylactic antibiotics (4 in Dunedin, 1 in Maniototo).

• **Specialist oversight and review:** General Practitioners refer on to specialist colleagues as indicated. One child is under local paediatricians, one temporary resident child is followed by Starship (Auckland), and the adult RF patients are seen by Infectious Diseases physicians in Dunedin.

• **Dental care:** Cases of Rheumatic fever on antibiotic prophylaxis who are of primary school age will be seen initially in the community dental service and reviewed there on an annual or more frequent basis as indicated by their oral health. This is a free service. Other cases who are eligible for care under the adolescent oral health package will receive free dental care under that mechanism. Students enrolled at the University of Otago receive dental care through the Student Health Centre.
- **Care packages** are created on a case by case basis to ensure that each patient has access to regular antibiotic cover and appropriate support. At present all cases are receiving this from a general practice source. Practices are managing the call and re-call aspects of penicillin administration. The administration of antibiotics is audited through the Canterbury Register, to which Southern DHB patients are added on notification.

- **Follow up of late attendees:** Where this audit indicates a lack of timely administration, the Southern DHB Medical Officer of Health is alerted to work with the practice and patient to address any underlying issues. Providing this service from general practice promotes good relationships with primary care and establishes primary care as the immediate source of advice and help in the management of patients.

**REGIONAL AGREEMENT ON SERVICE PROVISION**

The South Island Alliance Leadership team (SI DHB CE’s) agreed on 6 May 2014 to a business case presented by the Public Health Workstream, to approve a payment of $2000 per annum excluding GST, for each patient with rheumatic fever who should be on penicillin prophylaxis, to receive the comprehensive care and treatment outlined above (as per the Canterbury DHB). South Canterbury has no known RF patients but has budgeted for one patient as a contingency. This allows a consistent approach across the South Island for a high standard of patient care, with free dental care and general practice care, and annual specialist review, for all patients who are or should be on penicillin prophylaxis. This package of care aims to optimise patients’ health, and minimise the chance of relapse, bacterial endocarditis.

3.2. **Ensuring All Cases of Acute Rheumatic Fever or Relapse are Notified to the Medical Officer of Health within 7 Days of Hospital Admission**

**Canterbury and West Coast DHBs**

- **Hospitals:** The Notifiable Disease form at Christchurch Hospital is now available on the Canterbury DHB desktop, under Clinical Resources. The revised edition of the Blue Book of hospital protocols (given to all new junior doctors) will include a section on Rheumatic Fever.

- **General practice:** The Notifiable Disease form is available on Health Pathways, and is also connected to the Rheumatic Fever Pathway.

**South Canterbury DHB**

- **General practice:** The form is available on Aoraki Health Pathways

 **Nelson Marlborough DHB**

- **Hospitals:** The Notifiable Disease fax form is accessible on the DHB intranet under the Infection Control tab and under Clinical Documents.

- **General practice:** The Notifiable Disease fax form is used regularly by GPs for other notifiable diseases and is available in hard copy in primary care practices. It will also be connected to the Rheumatic Fever Pathway on the HealthPathways, this pathway is currently in draft form.
SOUTHERN DHB

- **Hospitals**: The fax form for notifiable diseases is accessed through the MIDAS program, which is available to hospital based staff on the intranet.
- **General practices**: can access the Notifiable Diseases form through Public Health’s website – (http://www.southerndhb.govt.nz/index.php?pageLoad=2826) by clicking on Resources & Publications, then Forms, then Notifiable Disease. Southern DHB’s administrative staff also send the form out to all GP practices along with a list of notifiable diseases.

The South Island DHB Medical Officers of Health have undertaken to utilise their networks to advise clinicians in the importance of notifying rheumatic fever, in a timely way.

The South Island DHB Medical Officers of Health have agreed to share information for to pave the way towards a South Island Rheumatic Fever patient register, to improve patient care and follow up and coordinated reporting. This register will be held in the Canterbury DHB Public Health Unit, Community & Public Health. This register will include patient:

- Date of birth/age
- Sex
- Prioritised Ethnicity
- Date of diagnosis of Acute Rheumatic Fever and/or relapse of Rheumatic Fever
- Date of move into the South Island DHB (if the patient’s diagnosis of ARF/relapse of RF occurred elsewhere); The initial DHB the patient was residing in when diagnosed in (if known)

3.3 **IDENTIFYING AND ADDRESSING KNOWN RISK FACTORS AND SYSTEM FAILURE POINTS IN CASES OF RHEUMATIC FEVER**

The South Island DHBs follow up new cases of rheumatic fever as they are notified. Household contacts are visited and throat-swabbed in accordance with Ministry of Health protocols.

The Ministry of Health has established a new template for rheumatic fever case notifications in EpiSurv, all DHBs will use this form and have access to the information from 1 July 2014. This form will capture possible system failure points which will allow local Medical Officers of Health to intervene and act on any identified systems failures including referring for crowding, liaising with medical professionals if incorrect regimes of antibiotics (or failures in correct prescribing) are identified.

**Canterbury, West Coast and South Canterbury DHBs**

Community and Public Health’s Rheumatic Fever nurse keeps a register of patients in the region, and sends an audit form to practices with RF patients on antibiotics every 6 months. Practices are asked to comply with the form and document how many doses of penicillin were given on time. Any issues are addressed by the nurse.

**Nelson Marlborough DHB**

Nelson Marlborough Public Health Service keeps a register of patients in the district and currently DHB nurses (Public Health or District Nursing) provide prophylaxis to all (but one) of known RF cases. Public Health is working with the local GPs who provide liaison with the DHB to ensure that all cases of RF are on the register and are able to access free antibiotics.
SOUTHERN DHB

Each new case is investigated by the communicable disease team under the direction of the Medical Officer of Health. This includes the assessment of any vulnerable contacts and appropriate management.

All follow-up cases are registered with the Rheumatic Fever nurse at Community and Public Health in Canterbury and subject to the same audit regime as applies Canterbury patients.
REFERENCES


The Institute of Environmental Science and Research Ltd. (2013) Notifiable and Other Diseases in New Zealand: Annual Report 2012, Porirua, New Zealand


