NATIONAL GUIDELINES ON PRIMARY PREVENTION AND PROPHYLAXIS OF RHEUMATIC FEVER (RF) AND RHEUMATIC HEART DISEASE (RHD) FOR HEALTH PROFESSIONALS AT PRIMARY LEVEL

1. INTRODUCTION

The magnitude of the devastating effects of RHD in developing populations cannot be overemphasised. It is the most common form of acquired cardiac disease in children and adolescents and has often been described as the only 'true preventable' chronic disease.

It has been stated the only factor that determines the prevalence of RF and RHD is the socio-economic status of the people.

Poverty affects the prevalence in a number of ways:

- ✧ Qualified medical care is concentrated in cities and is not readily available in rural and peri-urban areas.
- ✧ If services are available, there is a lack of capacity to pay for it.
- ✧ Sore throat does not warrant expenditure on treatment.
- ✧ The crowded living conditions in houses and schools of the poor is a fertile ground for transmission of streptococcal upper respiratory tract infections.
- ✧ Poor compliance.
- ✧ Nutritional status may contribute to the susceptibility to RF.

Recent research developments provide a sufficient scientific basis to demonstrate the need for the prevention and control of non-communicable diseases. RHD is a common cardiovascular disease in children and young adults and remains a major public health problem.

2. OBJECTIVES

2.1 To establish a comprehensive programme for primary prevention of RF/ RHD through:

- ✧ health education
- ✧ improving living and socio-economic conditions
- ✧ early diagnosis of 'strep' throat
- ✧ effective treatment of streptococcal pharyngitis – training.

2.2 To establish a comprehensive programme for secondary prevention of RF/RHD through:

- ✧ health education and training of all personnel involved with children
- ✧ case detection of acute RF
- ✧ notification of acute RF
- ✧ follow-up and referral system
- ✧ secondary prophylaxis to prevent recurrence of RF and more severe RHD.

2.3 To facilitate training of personnel.

2.4 To evaluate and monitor health and policy outcomes.

3. SCOPE OF THE POLICY GUIDELINES

3.1 Geographical coverage

- ✧ National.
- ✧ Provincial.
- ✧ District.
- ✧ Local.

3.2 Target population for health education

To be accessible and available to all children of school-going age, patients, parents, teachers, child-minders, health workers and all personnel involved with children.

Target population for prophylaxis of RF/RHD

Children.
Adults up to 21 and/or 35 years of age.

Target population for primary prevention

Children (3 - 15 years).

3.3 Service organisation

- ✧ Local.
- ✧ Clinics and community health centres.
- ✧ School health services.
- ✧ Emergency services (sensitise all casualty departments of urgency to treat sore throats and of clinical characteristics of acute RF/RHD).
- ✧ Hospital services.
- ✧ Referral system .
- ✧ General practitioners (GPs) and dentists.
- ✧ Local authorities.
- ✧ Laboratories (state and private).
- ✧ Environmental Health Sector.
- ✧ Department of Housing.

3.4 Managerial organisation

DOH is responsible for the management of the policy.
Multi-sectoral approach:
NB: Environmental Health Sector, Housing District Health System.
Provinces are responsible for the implementation, monitoring and evaluation of service delivery.

RESOURCES

4.1 Human resources

- ✧ Training, education and planning of health personnel, especially target medical and dental students and student nurses
  (Refer: Human Resource Planning Policy).

- ✧ Health professionals, e.g. nurses or others that come into contact with children.

- ✧ Teachers, care-givers, laboratory technologists, social workers.

4.2 Drugs for prevention and prophylaxis

Benzathine penicillin
- injection and oral phenoxymethyl penicillin.
Erythromycin (for allergic patients).

4.3 Communication and information dissemination

To be accessible and available to all children of school-going age, patients, parents, teachers, child-minders, health workers and all other personnel involved with children.

4.4 Financial implications

To cost operational policy in each province.
Determine the funding source.
Secure budget for prevention, prophylaxis and health promotion.

4.5 Intersectoral relationships

Departments of Health, Education, Housing, Welfare, service organisations.

5. PRIORITY ISSUES TO BE COVERED

5.1 Primary prevention (3 to 15 years of age)

- ✧ Improvement of socio-economic conditions, especially overcrowding in schools and homes. Interventions aimed at improvement of living conditions will make a major contribution towards prevention. Adherence to environmental norms and standards.
- ✧ Health education and health promotion (Annexure A).
- ✧ Early diagnosis of 'strep' throat.
- ✧ Prevention of first attack by vigorous standardised treatment of streptococcal throat infection or tonsillitis (Annexure B).

5.2 Secondary continuous prophylaxis (3 to 21/35 years)

- ✧ Health education and promotion.
- ✧ Case finding – RF/RHD.
- ✧ Drug treatment every 3 - 4 weeks (referal back to primary level).
- ✧ Notification of acute RF.

5.3 Two-way referral system, follow-up and adherence

5.4 Communication and information dissemination

To be accessible and available to all children of school-going age, patients, teachers, child-minders, health workers and all personnel involved with children.

5.5 Notification system

6. PRIORITY ISSUES TO BE ADDRESSED BEFORE IMPLEMENTATION

6.1 Preparation of health education material.

6.2 Training of personnel (multidiscipli-nary).

6.3 Production and dissemination of health information.

6.4 Market the policy.

6.5 Mode of referral-back of patients to primary level – including post-operative anticoagulation therapy.

7. IMPLEMENTATION OF POLICY GUIDELINES

7.1 Lobbying for political and other support at all levels.

7.2 Organisational and legislative framework needed
- Acute RF is a notifiable disease.

7.3 Evaluation and monitoring of policy.

7.4 Surveillance/follow-up.

7.5 Quality control.

8. INFORMATION SYSTEM FOR SORE THROATS, RF AND RHD

- ✧ To be compatible with national information system.
- ✧ Develop indicators - prevalence, incidence, adherence, accessibility, availability.
- ✧ Cost analysis of programme.

This policy should be part of or be compatible with the National Health System and should be integrated at primary level.

ANNEXURE A

MESSAGE FOR PARENTS, PATIENTS, CHILDREN, TEACHERS, CHILDMINDERS, HEALTH WORKERS, ETC.

RHEUMATIC FEVER (RF) AND RHEUMATIC HEART DISEASE (RHD)

SORE THROAT

1. If a child (3 - 15 years) has a sore throat, with or without a fever, the child **should** be taken to a clinic as soon as possible.

2. Most children with a sore throat **should** be treated with penicillin to help prevent RF. The health worker at the clinic will decide whether penicillin is necessary.

3. A child with a sore throat **should** be helped to eat and encouraged to drink plenty of liquids. Symptomatic treatment, e.g. paracetamol, should be introduced.

RHEUMATIC FEVER PROPHYLAXIS

1. A child who has had acute RF can develop RHD (up to 70 % of such children do). RF develops because of a sore throat that was not treated effectively.

2. A child who has had acute RF should be treated with penicillin continuously, until she/he is 21 years old. This is to prevent the child from developing RHD and also to prevent the heart disease from getting worse, if it has already developed.

3. The patient must either get an injection once

a month (this is preferable), or must take a tablet twice a day every day (until 21 years old).

4. If patient has established RHD, penicillin should be taken up to the age of 35 years.

INFECTIVE ENDOCARDITIS PROPHYLAXIS

1. A patient with RHD can get infective endocarditis (infection of the lining of the heart) which will kill the patient if it is not treated.

2. Infective endocarditis can be prevented by taking antibiotics just before and after certain operations and procedures. Remember **always** to inform health workers, (nurses, doctors, dentists or dental workers) **before** every test, procedure or operation on the child, that the child has had RHD (even if the health worker knows this).

3. Tooth extractions, cleaning of the teeth by the dentist (scaling), changing of orthodontic wires, tonsillectomy and adenoidectomy, bronchoscopy and operations on the bladder and large intestine are risk procedures.

4. The health worker will give different antibiotics, not those which are usually used for the prevention or treatment of RHD.

ANNEXURE B

RF AND RHD: DIAGNOSTIC CRITERIA, PREVENTION AND PROPHYLAXIS

DIAGNOSIS FOR TREATMENT OF CHILDREN WITH 'STREP' THROAT

CLINICAL DIAGNOSIS:

Clinical characteristics:	Strep Throat
Age	3 - 15 years
Initial symptoms	Sore throat with pain while swallowing
Fever	Yes, sudden onset
Other signs	Clinical picture of scarlet fever*

* Red strawberry tongue, cutaneous eruption particularly on the throat, chest, axillae, elbows, groins and inner surface of thighs.

All sore throats in children, 3 - 15 years of age, should be regarded as a streptococcal infection and be treated as such

except

if any one of the following clinical characteristics is present, which is then an indication that the sore throat **should not be** diagnosed as a 'strep' throat:

- ✧ Ulceration.
- ✧ Hoarseness.
- ✧ Watery nasal secretion.
- ✧ Conjunctivitis.

Children not diagnosed with streptococcal pharyngitis should be treated symptomatically. Bedrest may be required in some cases.

If laboratory services are available, diagnosis of 'strep' throat should be biomedically confirmed, but this confirmation should not delay the initiation of treatment.

TREATMENT OF 'STREP' THROAT (3 - 15 YEARS) (PRIMARY PREVENTION)

Antibiotic	Mode of administration	Dose
Benzathine penicillin	Intramuscular (keep child under observation for 30 minutes)	**single dose** 1.2 MU for patients weighing more than 30 kg 600 000 - 900 000 U for patients less than 30 kg
OR		
Phenoxymethyl penicillin	Oral	500 mg twice daily **OR** 250 mg four times daily for 10 days 125 mg four times daily for patients **less than 30 kg**

Intramuscular penicillin should be encouraged in all patients. It is more effective.

If a patient has a history of penicillin allergy (very seldom) give **erythromycin** (same dosage as oral penicillin).

REFERRAL

If any one or more of the following criteria are present, refer to nearest hospital **within 24 hours:**

1. One or more swollen, painful joints or complaint of flitting joint pains.

2. Any involuntary movements of head, arms,

tongue and neck (St. Vitus's Dance) or Sydenham's Chorea. The latter occurring on its own should be diagnosed as RF with continuous prophylaxis.

3. Small subcutaneous nodules (2 to 3 mm in size) on knuckles of hands, elbows, knees, over spinal column.

4. Fever and history of previous RF or RHD.

5. Heart murmur not diagnosed before or heart rate for:

>10 years	> 120/min
5 - 10 years	> 130/min
< 5 years	> 140/min

6. Any patient with RHD requiring dental or any other operation or procedure, should be referred to a doctor/hospital for adaptation of antibiotic regimen.

7. Acute RF is a notifiable disease.

8. Doctors should use Jones's Criteria to diagnose RF.

JONES's CRITERIA

Major manifestations	Minor manifestations
Carditis	Clinical
Migrating polyarthritis of the big joints	Fever
Chorea	Arthralgia without arthritis
Erythema marginatum	Previous RF or RHD
Subcutaneous nodules	Prolonged P-R interval (not with carditis as a major finding)
	Laboratory: Acute phase reactants * Erythrocyte sedimentation rate elevation * C-reactive protein positive * Leucocytosis

PLUS

Supporting evidence of preceding streptococcal infection (increased antistreptolysin or other streptococcal antibody titre; positive culture for Group A *Streptococcus*; recent scarlet fever)

The presence of two major criteria, or of one major and two minor criteria, indicates a high probability of RF – if supported by evidence of a preceding streptococcal infection.

ANNEXURE C

SECONDARY CONTINUOUS PROPHYLAXIS FOR RECURRENT RF OR RHD (3 - 21/35 YEARS)

Antibiotic	Mode of administration	Dose
Benzathine penicillin	Intramuscular (Keep child under observation for 30 minutes)	Given every 4 weeks 1.2 MU for patients weighing more than 30 kg 600 000 - 900 000 U for patients weighing **less than 30 kg**
OR		
Phenoxymethyl penicillin	Oral	250 mg twice daily 125 mg twice daily for patients **less than 30 kg**

Intramuscular penicillin should be encouraged in all patients. It is more effective than oral penicillin and results in better compliance.

Adherence is very important. Continue up to 21 years of age or with cases of confirmed RHD up to 35 years of age.

If a patient has a history of penicillin allergy, give **erythromycin** (same dosage as oral penicillin).

Give one to two aspirins for migrating polyarthritis in acute RF.

Bedrest determined by the doctor.

Fluids and nourishment are very important in recuperation period.