Timor-Leste guidelines for the prevention and management of acute rheumatic fever (ARF) and rheumatic heart disease (RHD).

Timor-Leste nia matadalan konaba prevensaun no gestaun ba moras febre remátika aguda (ARF) no moras rematizmu fuan (RHD)

These guidelines have been written by a technical working group, convened by the Ministry of Health, Timor-Leste with the following aims:

- To provide evidence-based guidance for clinicians for the recognition, diagnosis, treatment and prevention of acute rheumatic fever (ARF) and rheumatic heart disease (RHD) in Timor-Leste
- To improve health outcomes for people with (or at risk of developing) ARF and RHD in Timor-Leste

Matadalan ida ne'e hakerek husi grupu servisu teknikal ida, ne'ebé mak konvoka husi Ministeriu Saude, Timor-Leste, ho objetivu hanesan tuir mai:

- Fornese matadalan ne'ebé mak bazeia ba evidensia atu médiku sira bele identifika, halo diagnostiku, fó tratamentu no prevensaun ba moras febre remátika aguda (ARF) no moras rematizmu fuan (RHD), iha Timor-Leste
- Atu melhora rezultadu saude nian ba ema ne'ebé mak moras (ou iha risku atu dezenvolvbe) ARF no RHD iha Timor-Leste

The guidelines provide limited background information about ARF and RHD, and clinicians who want to learn more about these conditions, are encouraged to seek out learning opportunities available through the Ministry of Health and its partners, as well as excellent material available online, including at https://www.rhdaustralia.org.au/e-learning-discussion-forum

Matadalan ida ne'e fornese informasaun bazika ne'ebé mak limitadu konaba ARF no RHD, ba médiku sira ne'ebé mak hakarak atu aprende liu tan konaba kondisaun ida ne'e, ami enkoraza ita bo'ot sira atu buka oportunidade aprendizajem ne'ebé mak disponivel iha Ministeriu Saude no nia parseiru sira, nune'e mos iha materia exelente barak mak disponivel ona iha online, inklui https://www.rhdaustralia.org.au/e-learning-discussion-forum

The evidence for the recommendations in these guidelines is drawn from a range of sources, including:

Evidensia ne'ebé sai hanesan baze ba rekomendasaun iha matadalan ida ne'e deskreve husi fontes ne'ebé oin-oin, inklui mos:

- Timor-Leste Standard Treatment Guidelines (2010) (1)
- Fiji Guidelines for Acute Rheumatic Fever and Rheumatic Heart Disease (2018) (2)
- Australian Guideline for Acute Rheumatic Fever and Rheumatic Heart Disease (2020) (3)
- Revision of the Jones Criteria for the Diagnosis of Acute Rheumatic Fever (2015) (4)
- WHF Criteria for Echocardiographic Diagnosis of Rheumatic Heart Disease (2012) (5)
- WHO Expert Consultation on Rheumatic Fever and Rheumatic Heart Disease (2001) (6)
- WHO Resolution on Rheumatic Fever and Rheumatic Heart Disease (2018) (7)

Plan for review of guidelines: 5 years from publication

Planu atu halo revizaun ba matadalan ida ne'e: tinan 5 komesa husi momentu publikasaun

Foreword:

Increasing awareness of the high prevalence and devastating health effects of acute rheumatic fever (ARF) and rheumatic heart disease (RHD) for the people of Timor-Leste has led to the development of these guidelines. The result of successful collaboration between the Ministeriu Saude and key partners, these guidelines will help healthcare providers to implement evidence-based activities that are designed to prevent, diagnose and treat ARF and RHD.

Ministeriu Saude is committed to the implementation of these guidelines, and to equipping healthcare providers throughout Timor-Leste with the tools that they need to provide the best possible to care for patients with ARF and RHD in Timor-Leste.

I am extremely proud of these guidelines and would like to thank all of those who have contributed and supported the process from conception to development and through to publication. We look forward now to ongoing collaboration, to work together to reduce the impact of ARF and RHD and ultimately to eradicate these preventable diseases from Timor-Leste.

Aumenta konsientizasaun konaba prevalensia a'as no efeitu devastadu ba saúde, husi febre rematika aguda (ARF) no moras rematizmu fuan (RHD) nian, ba povu sira iha Timor-Leste, ne'e mak hamosu ona dezenvolvimentu ba matadalan sira ne'e. Hanesan rezultadu husi kolaborasaun diak entre Ministeriu Saúde no parseriu prinsipal sira, matadalan ida ne'e sei ajuda profesional saúde sira atu implementa aktividade bazeia tuir evidensia, ne'ebé mak projeta ona hodi prevene, halo diagnostiku no trata ARF no RHD.

Ministeriu Saúde kompromete ona atu halo implementasaun ba matadalan sira ne'e, no atu halo kompleta prestador servisu saúde sira iha Timor laran tomak, ho ekipamentu ne'ebé mak sira presiza hodi presta atendimentu ne'ebé diak ba pasiente sira ho ARF no RHD iha Timor-Leste.

Hau extremamente sente orgulhu ho matadalan sira ne'e no hakarak atu agradese ba maluk sira hotu ne'ebé mak kontribui no apoia ona matadalan ida ne'e nia prosesu desde husi nia konseitu até dezenvolvimentu no ba to'o iha publikasaun. Agora ami espera ba iha kolaborasaun kontinua, hodi servisu hamutuk atu redus impaktu husi ARF no RHD nian no finalmente atu eradika moras preventavel sira ne'e husi Timor-Leste.

MINISTERIO DA SAUDE
DGPS

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The development of the guidelines has been supported by / Dezenvolvimentu ba matadalan ida ne'e hetan suporta husi:

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1. Introduction / Introdusaun

Acute rheumatic fever (ARF) is an autoimmune inflammatory disease which follows an infection with group-A streptococci (GAS). Episodes of ARF can contribute to development of rheumatic heart disease (RHD), which involves damage to the heart valves, most commonly the mitral and aortic valves. Severe RHD can result in heart failure, arrhythmias, pulmonary hypertension, and premature death. ARF and RHD predominantly affect people in resource-limited settings, where socioeconomic factors such as household crowding contribute to a high burden of GAS infections. GAS throat infections are known to lead to ARF, and there is increasing evidence that ARF can also follow GAS skin infection (8, 9).
Moras febre rematika aguda hanesan moras inflamatoriu autoimunu ida, ne'ebé mak mosu depois de iha infeksaun ho group-A streptococci (GAS). Episodiu husi ARF bele kontribui hodi dezenvolve moras rematizmu fuan (RHD), ne'ebé mak sei halo estragus ba iha valvula fuan nian, mais komun liu mak valvula mitral no aortic. RHD grave bele rezulta ba iha insufisiensia kardiaka, arrhythmias, hipertensaun pulmonaria no mate prematura. ARF no RHD predominantemente afeta ba ema ne'ebé mak moris ho kondisaun/ambiente ne'ebé ho rekursu limitadu, ezemplu tamba fator sosio-ekonomiku, hanesan hela iha ambiente uma ne'ebé mak rabat malu sei kontribui karga a'as infeksaun GAS. Infeksaun GAS iha garganta mak konhesidu ba kauza ARF, no aumenta tan iha evidensia barak hatudu katak ARF mos bele mosu depois de infeksaun GAS iha kulit (8, 9).

Timor-Leste has a high prevalence of RHD in school-aged children – approximately 2% have definite RHD (10), and there is evidence of a high burden of morbidity and mortality associated with severe cases (11, 12). It is very important that clinicians in Timor-Leste are equipped to recognise, diagnose, treat and prevent ARF and RHD.
Timor-Leste iha prevalensia ne'ebé mak a'as ba RHD iha labarik kiik sira (tinan >6) - aproximadamente 2% mak iha RHD definidu (10), no iha evidensia husi karga a'as ba morbidade no mortalidade tamba asosiadu ho kazu grave (11, 12). Importante tebes ba médiku sira iha Timor-Leste atu ekipadu hodi bele identifika, halo diagnostiku, halo tratamentu no prevene ARF ho RHD.

ARF most commonly affects children, but adults can also have episodes of ARF, and the effects of RHD can be lifelong.
ARF normalmente afeta liu ba labarik kiik sira, maibe adultu mos bele hetan episodiu husi ARF, no efeitu husi RHD bele dura ba vida tomak.

There are several opportunities to prevent ARF and RHD (Figure 1). Primary prevention aims to stop ARF from occurring in the first place, while secondary prevention aims to limit the progression of RHD.
Iha oportunidade barak hodi prevene ARF no RHD (Figura 1). Prevensaun primaria nia objetivu atu hapara ARF nia okorensia iha fatin primeiru, enkuantu prevensaun sekundariu ho objetivu atu limite RHD nia progresaun.

Broad social, economic and environmental initiatives can prevent or limit the impact of GAS infection in a population.
Hamosu inisiativu sosial, ekonomia no ambiental ne'ebé amplu/luan sei bele prevene ou limite impaktu husi infeksaun GAS ba iha populasaun sira.

- **Primary prevention:** reducing GAS transmission, acquisition, colonisation and carriage, or treating GAS infection effectively to prevent the development of ARF in individuals.
  Prevensaun primaria: redus GAS nia transmisaun, akizisaun, kolonizasaun no transportasaun, ou trata infeksaun GAS efetivamente hodi prevene ARF nia dezenvolvimentu iha individual ida-idak.
- **Secondary prevention:** administering regular prophylactic antibiotics to individuals who have already had an episode of ARF to prevent the development of RHD, or to prevent progression of disease in those who have established RHD.
  Prevensaun sekundariu: administra antibiótiku profilátika regular ba individual sira ne'ebé mak iha ona episodiu husi ARF hodi prevene RHD nia dezenvolvimentu ou hodi prevene progresaun moras nian ba ema sira ne'ebé mak estabelesidu ona ba iha RHD.

Prevention strategies within each of these categories are included in these guidelines, as well as recommendations for the diagnosis and treatment of both ARF and RHD, specifically in the context of Timor-Leste.
Estrategia hodi halo prevensaun iha ho kada kategoria sira ne'e inklui ona iha matadalan ida ne'e, nune'e mos rekomendasaun hodi halo diagnostiku no tratamentu ba ARF no RHD, espesifikamente tuir kontextu iha Timor-Leste nian.

In addition to implementation of prevention strategies, effective control of RHD should also include strategies for:

- Community health education
- Healthcare provider training
- Active case finding
- Epidemiological surveillance
- Monitoring and evaluation

Alem de ida ne'e atu implementa estrategia ba prevensaun no kontrolu ne'ebé mak efetivu ba RHD, tenke inklui mos ho estrategia ba:

- Edukasaun saude iha komunidade
- Treinamentu ba prestador saude
- Buka tuir kazu ativu
- Vigilansia epidemiologika
- Monitoramentu no avaliasaun

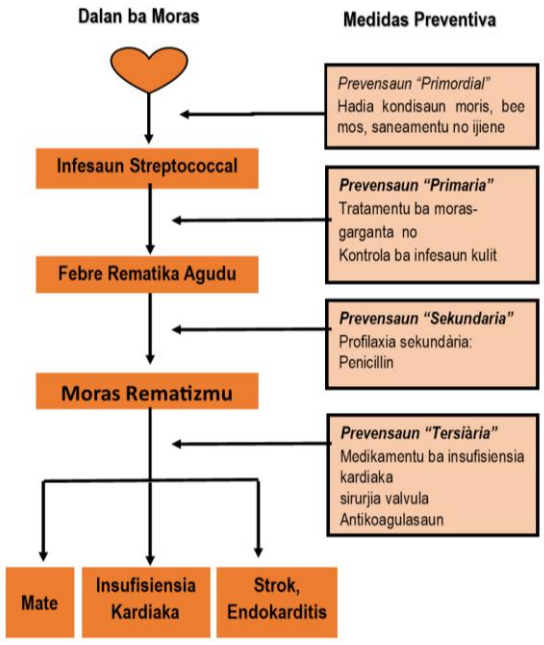


Figure 1: Path to rheumatic heart disease
Figura 1: Dalan ba moras rematizmu fuan

2. Addressing social determinants of acute rheumatic fever and rheumatic heart disease / Foka determinasaun sosial ba moras febre remátika aguda no moras rematizmu fuan

Addressing social determinants of health that increase the risk of GAS infection and its complications including ARF and RHD, is an important component of the health system response to ARF and RHD (13).
Foka determinasaun sosial saude nian ne'ebé mak eleva risku ba infeksaun GAS no nia komplikasaun inklui ARF no RHD, ida ne'e hanesan komponente importante ida husi sistema saude nian hodi fó resposta ba ARF no RHD (13).

GAS is usually spread from person to person, and it is more likely to spread in situations where close contact is frequent like in crowded households, and where access to clean water and soap is limited. GAS is a common cause of throat infections. Skin infections with GAS are common in places where scabies is endemic.
Normalmente infeksaun GAS transmite husi ema ida ba ema seluk no provavel liu atu transmite liu husi situasaun ne'ebé mak iha kontaktu isin besik malu frekuente/bebeik, hanesan iha familia ne'ebé mak kompostu husi ema barak no fatin ne'ebé mak iha limitasaun hodi asesu be'e mos no sabaun. Infeksaun GAS mak hanesan kauzador komun ba infeksaun iha kakorok/garganta. Infeksaun kulit ho GAS ne'e komun liu iha fatin ne'ebé mak sarna/scabies sai endemiku.

The following healthy living practices have evidence of an association with reduced GAS infections (3):
Pratika moris saudavel nian ne'ebé mak temi iha kraik, hatudu ona evidensia ne'ebé mak asosiadu ho redusaun ba infeksaun GAS (3):

Reducing household crowding / Redus ema barak hela hamutuk iha uma ida
There is strong evidence that household crowding is a major risk factor for GAS infections, ARF and RHD. Reducing household crowding can reduce GAS transmission.
Iha evidensia forte ne'ebé mak fó provas katak familia kompostu husi ema barak mak iha liu risku bo'ot ba infeksaun GAS, ARF no RHD. Hamenus ema barak hela hamutuk iha uma ida, bele redus transmisaun GAS.

Bathing and hand washing / Hari'is no fase liman
There is strong evidence that washing hands and bodies with soap and water reduces the risk of GAS infections.
Iha evidensia forte ne'ebé mak hatudu katak, fase liman no hari'is uza be'e mos no sabaun, sei redus risku ba infeksaun GAS.

Washing clothes and bedding / Fase roupa no kolsaun sira
Washing clothes and bedding can reduce the transmission of scabies mites and lice, which might reduce the risk of GAS infections by reducing skin itch and skin damage.
Fase roupa no kolsaun, bele redus transmisaun husi sarna/scabies nia kutun, tamba sei bele ajuda hodi redus risku ba infeksaun GAS liu husi prevene isin katar no estraga kulit.

Treating scabies / Halo tratamentu ba scabies

Scabies infection can lead to itching, and skin damage, followed by secondary bacterial infection with GAS. Treating scabies reduces the risk of GAS skin infections. Scabies can be treated with oral ivermectin, or topical permethrin (5%) or benzyl benzoate.

Infeksaun sarna/scabies bele kauza katar no estraga kulit, no bele pasa ba infeksaun bakterial sekundaria hamutuk ho GAS. Halo tratamentu ba sarna/scabies sei redus risku ba infeksaun GAS iha kulit. Sarna/scabies bele trata ho ivermectin oral, ou topical permethrin (5%) ou benzyl benzoate.

Caring for skin / Kuidadu ita nia kulit

If there is damage to the skin through a cut or graze, this can be an entry for GAS. Keeping wounds clean and protected from the environment reduces the risk of GAS skin infections.

Karik kanek iha kulit tamba hetan koa ou buat ruma mak les, ida ne'e bele sai hanesan dalan ba GAS. Mantein kanek nafatin mos no proteje husi ambiente liur, sei redus risku ba infeksaun GAS iha kulit.

Improving nutrition / Melhora ita nia nutrisaun

Although poor nutrition is not known to be a major risk factor for GAS infection, GAS throat infection can be spread through food which has not been cooked or stored properly.

Embora menus nutrisaun laos hanesan faktor risku ne'ebé maior ba infeksaun GAS, maibe infeksaun GAS ne'ebé mak iha kakorok/garganta bele transfere ltamba hahan ne'ebé mak seidauk tasak ho diak ou hahan ne'ebé mak armazena la adekuadu.

3. Primary prevention of acute rheumatic fever and rheumatic heart disease / Prevensaun primaria ba moras febre reumátika no moras rematizmu fuan

Early, appropriate treatment of GAS infections with antibiotics can effectively prevent episodes of ARF and the development of RHD.
Tratamentu apropriadu sedu ba infeksaun GAS uza antibiótiku bele efetivamente prevene ARF nia episodiu no prevene RHD nia dezenvolvimentu.

In Timor-Leste, access to bacteriological diagnosis (with culture of GAS from a swab of the infected site) is limited, and so treatment will usually be empiric, based on clinical findings.
Iha Timor-Leste, asesu ba diagnostiku bakteriologika (halo kultura ba GAS liu husi swab iha fatin infektadu) sei limitadu, no normalmente sei uza tratamentu empiriku, bazeia tuir konkluzaun klinikal.

Acute pharyngitis is commonly caused by viruses, but it can also be caused by GAS. Distinguishing viral upper respiratory tract infection from GAS pharyngitis based on clinical findings alone has not been proven to be accurate. In Timor-Leste, someone who presents with sore throat with pain or swelling or exudate, with or without associated fever or lymphadenopathy, should be treated for presumed GAS pharyngitis:
Faringite agudu komunmente kauza husi virus, maibe bele mos kauza husi GAS. Halo diferensia entre infeksaun viral iha tratu respiratoriu superior ho faringite husi GAS, bazeia tuir konkluzaun klinikal deit, ne'e seidauk hatudu provas ne'ebé mak akuradu. Iha Timor-Leste, ema ruma ne'ebé mak aprezenta moras iha kakorok/garganta ho senti moras ou bubu ou exudatu (kanek be'en/fluidu sai), ho febre ou sem asosiadu ho febre ou linfadenopatia, ema sira ne'e tenke trata hanesan presumidu ba faringite husi GAS:

- Give a single dose of intramuscular (IM) benzathine penicillin-G (BPG)
    - ≥20 kg: 1,200,000 IU
    - <20 kg: 600,000 IU
- Administra benzathine penicillin-G (BPG) hanesan dose uniku liu husi intramuskular
    - ≥20 kg: 1.200.000 IU
    - <20 kg: 600.000 IU

Oral antibiotics may be given as an alternative in the context of penicillin allergy or if an intramuscular injection is refused:

- Oral erythromycin 250 mg twice daily for 10 days

Bele administra antibiótiku oral hanesan alternativu ida, karik iha kontextu alergia ba penisilina ou karik pasiente la bele simu injeksaun:

- Erythromycin oral 250mg, loron 1 dala 2 durante loron 10

Impetigo is usually caused by GAS in Timor-Leste. GAS is also a common cause of secondary bacterial infection of scabies lesions. Treatment for impetigo should be given empirically:
Impetigo geralmente kauza husi GAS iha Timor-Leste. GAS mos hanesan kauzador komun ba infeksaun bakterial sekundariu iha sarna/scabies nia kanek. Tratamentu ba impetigo tenke administra empirikalmente:

- Give a single dose of intramuscular (IM) benzathine penicillin-G (BPG)
    - ≥20 kg: 1,200,000 IU
    - <20 kg: 600,000 IU
- Administra benzathine penicillin-G (BPG) liu husi intramuskular (IM) hanesan dose uniku,
    - ≥20 kg: 1,200,000 IU
    - <20 kg: 600,000 IU

Oral antibiotics may be given as an alternative in the context of penicillin allergy or if an intramuscular injection is refused

- Oral co-trimoxazole (trimethoprim/sulfamethoxazole)
    - Adult: One 400/80 mg tablet PO twice daily for 5 days
    - Child: 20/4 mg (0.5 ml) syrup PO twice daily for 5 days

Bele administra antibiótiku oral hanesan alternativu ida, tuir kontextu alergia ba penisilina ou karik pasiente la bele simu injeksaun intramuskular

- Co-trimoxazole oral (trimethoprim/sulfamethoxazole)
    - Adultu: Tablet 1 husi 400/80mg PO, loron 1 dala 2 durante loron 5
    - Labarik kiik: Xarope 20/4mg (0.5 ml) PO, loron 1 dala 2 durante loron 5

Scabs from impetigo sores should be gently removed with normal saline (NS) and cleaned. Betadine should be applied, and the lesions covered with gauze and bandage to stop spread of infection. Wounds should be treated daily until sores have healed (14).

Kulit maran/kostras husi kanek, tenke loke/hasai neneik ho saline no hamos ho didiak. Tenke kose betadine, no tenke taka kanek ho ligadura/gaze no bandagem atu la bele hadaet infeksaun. Tenke trata nafatin kanek loron-loron até nia maran/diak ona (14).

Scabies should be treated at the same time if there is clinical evidence of scabies infection, usually using topical permethrin or benzyl benzoate or oral ivermectin, which should be administered to the whole household given the risk of household transmission.

Sarna/scabies tenke tratadu imediata karik iha evidensia klinikal ba infeksaun sarna/scabies, normalmente uza topical permethrin, benzyl benzoate ou ivermectin oral, no tenke administra ba membru familia hotu-hotu, tamba iha risku ba transmisaun iha uma laran.

- Permethrin cream (5%) apply over whole body and wash off after 8-12 hours, OR
- Benzyl benzoate 25% apply over whole body, repeat without bathing on following day, then wash off after further 24 hours, OR
- Ivermectin 200mcg/kg/dose PO for one dose, and repeat after 7 days (ivermectin should not be used in children <15kg or pregnant women)
- Kreme permethrin (5%), kose ba isin lolon tomak, no fase depois de oras 8-12, OU
- Benzyl benzoate 25% kose ba isin lolon tomak, kose fila fali tan iha loron tuir mai no labele fase/haris, depois de oras 24 tan mak foin bele hamos/haris
- Ivermectin 200mcg/kg/dose PO ba dose ida, no repete depois de loron 7 (ivermectin labele uza ba iha labarik kiik sira ne'ebé ho nia todan <15Kg ou inan isin-rua)

4. Diagnosis of acute rheumatic fever / Diagnostiku ba moras febre remátika aguda

Making a diagnosing ARF is important, to guide the acute management (chapter 5) and commencement of secondary prophylaxis (chapter 8). The diagnosis of ARF is based on a combination of clinical findings and investigations. Differential diagnoses (including bone and joint infections) should be considered, however in a region with a high incidence of ARF, such as Timor-Leste, a person with fever and arthritis is likely to have ARF.
Halo diagnostiku ba ARF ne'e importante, hodi bele orienta gestaun agudu (kapitulu 5) no inisiu ba profilaxia sekundariu (kapitulu 8). Diagnostiku ba ARF ne'e desizaun kliniku, bazeia ba kombinasaun entre konkluzaun klinikal no investigasaun. Diagnostiku ne'ebé mak diferente tenke tau ba konsiderasaun (inklui infeksaun iha ruin no artikulasaun), no entantu regiaun ne'ebé mak existe insidensia a'as ba ARF, ezemplu hanesan nasaun Timor-Leste, kuaze pesoal sira ne'ebé mak iha isin manas no artrite, provavelmente sira iha ARF.

The Jones criteria divide the clinical features of ARF into major and minor manifestations (Table 1) (4). Major manifestations make the diagnosis more likely, and minor manifestations can help support a diagnosis of ARF.
Kriteria Jones devide ARF nia karakteristika klinikal ba iha manifestasaun maior no menor (4). Maior manifestasaun halo diagnostiku provavel liu tan, no menor manifestasaun bele ajuda suporta diagnostiku ba ARF.

Using the Jones criteria, patients can be diagnosed with either definite ARF or probable ARF. For a diagnosis of **definite ARF**, a patient must have:
Uza kriteria Jones, pasiente sira bele diagnostikadu ho ARF definidu ou ARF provavel. Ba diagnostiku **ARF definidu,** pasiente tenke iha:

- 2 major Jones criteria manifestations AND a history of a preceding GAS infection
  Jones nia kriteria manifestasaun maior 2 NO antes ne'e iha istoria ba infeksaun GAS

  OR / OU

- 1 major AND 2 minor Jones criteria manifestations AND a history of preceding GAS infection
  Jones nia kriteria manifestasaun maior 1 NO minor 2, NO antes ne'e iha istoria ba infeksaun GAS

A diagnosis of **probable ARF** can be made when the most likely diagnosis is ARF, but the clinical presentation does not meet enough major or minor criteria for a diagnosis of definite ARF, OR a history of preceding GAS infection cannot be obtained.
Bele halo diagnostiku ba **ARF provavel,** wainhira diagnostiku ne'ebé provavel liu mak ARF, maibe aprezentasaun klinika la sufisiente atu pasa ba kriteria maior ou menor husi diagnostiku ARF definidu, OU antes ne'e la iha historia ba infeksaun GAS.

Confirming a diagnosis of ARF can be difficult, in settings where there is no access to echocardiography, electrocardiogram (ECG), c-reactive protein (CRP) or erythrocyte

sedimentation rate (ESR) testing. In health posts and community health centres in Timor-Leste where these are not available, referral for further investigations in a referral hospital should be considered for cases of suspected ARF. In some cases, when referral is not possible, diagnosis and treatment as probable ARF may be necessary.
Halo konfirmasaun ba diagnostiku ARF sei sai difisil, kuandu halao iha fasilidade ne'ebe mak la iha asesu ba teste ekokardiografia, eletrokardiograma (ECG), c-reactive protein (CRP) ou teste ba taxa sedimentasaun eritrósitus (ESR). Ba postu saude no sentru saude komunitaria iha Timor-Leste ne'ebé mak la disponivel ba teste refere, tenke tau konsiderasaun hodi enkaminha ba iha hospital referal, karik iha kazu ne'ebé mak suspeitadu ba ARF. Kazu balun, wainhira la posivel atu enkaminha ba hospital referal, sei nesesariu atu halo diagnostiku no tratamentu hanesan ARF provavel.

In Timor-Leste, there is no capacity currently for a serological diagnosis of past GAS infection (anti-streptolysin-O-titre or anti-DNAse-B). Therefore, a history of recent skin sores (which are usually caused by GAS) or pharyngitis (which is often caused by GAS), is sufficient evidence of recent GAS infection to make a diagnosis of definite ARF. If there is no history of recent GAS infection, a diagnosis of probable ARF can still be made, and echocardiography can be used to diagnose RHD.
Timor-Leste, agora dadauk seidauk iha kapasidade hodi halo diagnostiku serologika ba infeksaun GAS iha pasadu (uza anti-streptolysin-O-titre ou anti-DNAse-B). Tamba ne'e, historia husi kanek iha kulit resente (ne'ebé mak normalmente kauza husi GAS) ou faringite (ne'ebé mak kauza beibeik husi GAS), ne'e hanesan evidensia ida ne'ebé mak sufisiente husi infeksaun GAS resente hodi halo diagnostiku ba ARF defenidu. Karik la iha historia ba infeksaun GAS resente, ita nafatin bele halo diagnostiku ba ARF provavel, no bele uza ekokardiografia hodi halo diagnostiku ba RHD.

All patients with a diagnosis of probable or definite ARF, should have an echocardiogram to look for RHD. If this is done during the episode of ARF, it can help to confirm a diagnosis of definite ARF, because carditis is one of the major manifestations in the Jones criteria.
Pasiente hotu-hotu ne'ebé mak diagnostiku ba ARF provavel ou ARF definidu, tenke halo teste ekokardiograma hodi verifika prezensa RHD nian. Karik realiza teste refere durante episodiu ARF, ida ne'e sei bele ajuda hodi konfirma diagnostiku husi ARF definidu, tamba carditis mak hanesan manifestasaun maior ida, iha kriteria Jones nian.

If an echocardiogram cannot be done during the episode of ARF, because of limited access, then a referral for a later echocardiogram should be made, and the patient should be treated as definite or probable ARF if they meet the criteria for a diagnosis.
Kuandu teste ekokardiograma la posivel atu realiza durante episodiu ARF, tamba asesu limitadu, entaun tenke halo teste ekokardiograma subsekuente, no pasiente tenke trata hanesan ARF definidu ou ARF provavel karik sira preenxe kriteria ba diagnostiku.

Table 1: Jones Criteria / Tabela 1: Kriteria Jones

Jones Criteria Major Manifestations **Manifestasaun Maior Husi Kriteria Jones**	
Carditis Carditis	Carditis can be identified based on clinical evidence (murmurs suggestive of mitral regurgitation or aortic regurgitation) or based on evidence of valvulitis or pericarditis on echocardiogram. Carditis bele identifika bazeia ba evidensia klinikal (murmuriu ne'ebé mak sugestivu husi regurgitasaun mitral ou regurgitasaun aórtica) ou bazeia ba evidensia husi valvulite ou pericarditis iha ekokardiograma.
Polyarthritis OR aseptic mono-arthritis OR polyarthralgia Poliartrite OU monoartrite aséptika OU poliartralgia	Arthritis is the most common presenting symptom of ARF and can be extremely painful. Large joints are usually affected, especially knees and ankles. It can be migratory, affecting multiple different joints over a short period of time. Artrite mak sintoma ne'ebé mais komun prezente iha ARF no bele sente moras extremamente. Artikulasaun bo'ot mak normalmente afetadu, espesialmente iha ain-tur no ain-fukun/ankle. Nia bele migratoriu, afeta ba artikulasaun barak iha periodu tempu ne'ebé mak lalais.
Sydenham's chorea Sydenham's chorea	Sydenham's chorea occurs most commonly in teenagers and consists of jerky, uncoordinated movements, especially affecting the hands, feet, tongue and face. The movements disappear during sleep. Sydenham's chorea komumente barak liu mosu iha adolesente no konsiste husi movimentu iregular/espasmodiku no deskordenadu, espesialmente afeta iha liman, ain fuan, nanal no oin. Movimentu refere se lakon/para durante sira toba.
Erythema marginatum Eritema marginatum	Erythema marginatum is rare and can be difficult to see on dark skin. It occurs as circular patterns of bright pink macules or papules on the trunk and proximal extremities. Eritema marginatum ne'e rara no sei difisil atu hare iha kulit ne'ebé metan/eskuru. Nia mosu hanesan mákulas ou pápulas ho karakteristika kor de roza naroman modelu sirkular iha tronku (parte kaba'as, hirus matan no liman) no extremidade proximal.
Subcutaneous nodules Nodulu Subkutaneu	Subcutaneous nodules are rare. They present as multiple small, round, painless nodules over the elbows, wrists, knees, ankles, occiput and posterior spinal processes of the vertebrae. Nodulu Subkutaneu ne'e rara. Nia mosu hanesan nodulu kiik oin-oin, kabuar, kafuak kabuar la moras, iha area liman sikun, liman fukun, ain-tur, ain-fukun, oksipital no prosesu espinal posterior husi vertebras (ruin iha kotuk).

<table>
<tr><th colspan="2">Jones Criteria Minor Manifestations
Manifestasaun Menor husi Kriteria Jones</th></tr>
<tr><td>Mono-arthralgia
Mono-artralgia</td><td>This can only be counted as a minor manifestation if there is no polyarthritis or aseptic mono-arthritis or polyarthralgia.
Ida ne’e bele tama hanesan manifestasaun menor karik la iha poliartrite ou monoartrite aséptika ou poliartralgia.</td></tr>
<tr><td>Fever
Isin manas</td><td>Fever may be recorded (>38 degrees Celsius) or just reported as a history of fever.
Isin manas bele registradu (>38 grau Celsiu) ou apenas relatadu hanesan historia ba isin manas.</td></tr>
<tr><td>Raised erythrocyte sedimentation rate (ESR) or c-reactive protein (CRP)
Taxa sedimentasaun ba erythrocyte (ESR) elevadu ou c-reactive protein (CRP)</td><td>ESR ≥30 mm/h or CRP ≥30 mg/L (if either blood test available).
ESR ≥30 mm/h ou CRP ≥30 mg/L (karik teste ran, disponivel)</td></tr>
<tr><td>Prolonged P-R interval on electrocardiogram (ECG)
Intervalu P-R prolongadu iha eletrokardiograma (ECG)</td><td>Prolonged P-R interval because of first degree heart block can be seen on ECG, as can other conduction abnormalities. The upper limits of normal P-R interval vary by age.
Intervalu P-R prolongadu tamba blokeiu kardiaka primeiru grau, ita bele hare iha ECG, nune’e mos konduksaun anormalidade sira seluk. Intervalu P-R nia limite superior normal ne’e variadu konforme tuir idade.
<table><tr><th>Age group (years) / Grupu Idade (tinan)</th><th>Seconds / Segundu</th></tr><tr><td>3-12</td><td>0.16 (4 small squares on ECG*)
0.16 (kuadradu kiik 4 iha ECG)</td></tr><tr><td>12-16</td><td>0.18 (4 and a half small squares)
0.18 (kuadradu kiik 4 ho balun)</td></tr><tr><td>17 and older
17 ba leten</td><td>0.20 (5 small squares)
0.20 (kuadradu kiik 5)</td></tr></table></td></tr>
</table>

** On small square is equivalent to 0.04 seconds*
** entre espasu kuadradu kiik ekivalente ba 0.04 segundus*

Figure 2: Measuring P-R interval (from the start of the P wave until the start of the Q wave)
Figura 2: Sukat intervalu P-R (husi inisiu ondas P até inisiu ondas Q)

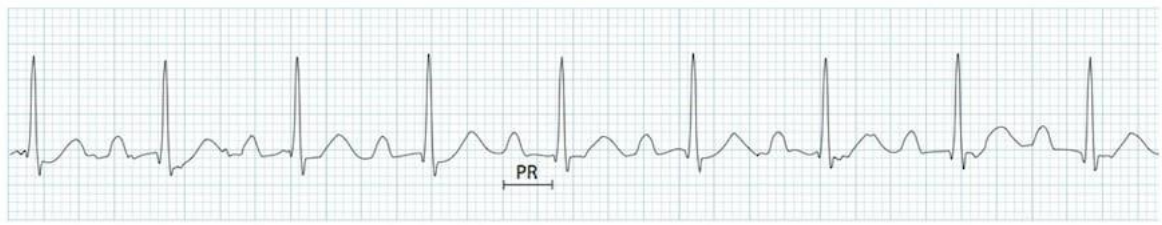
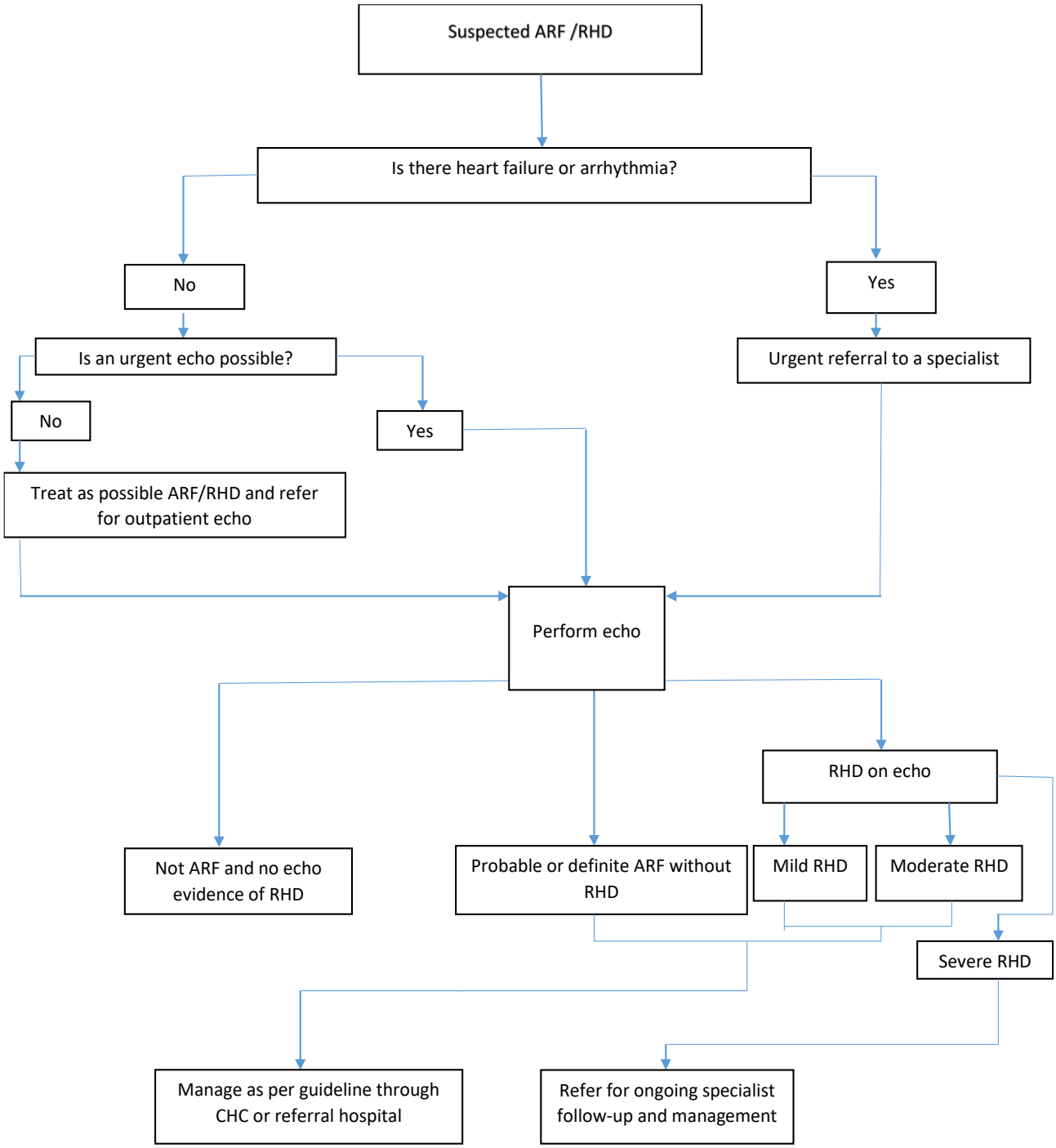
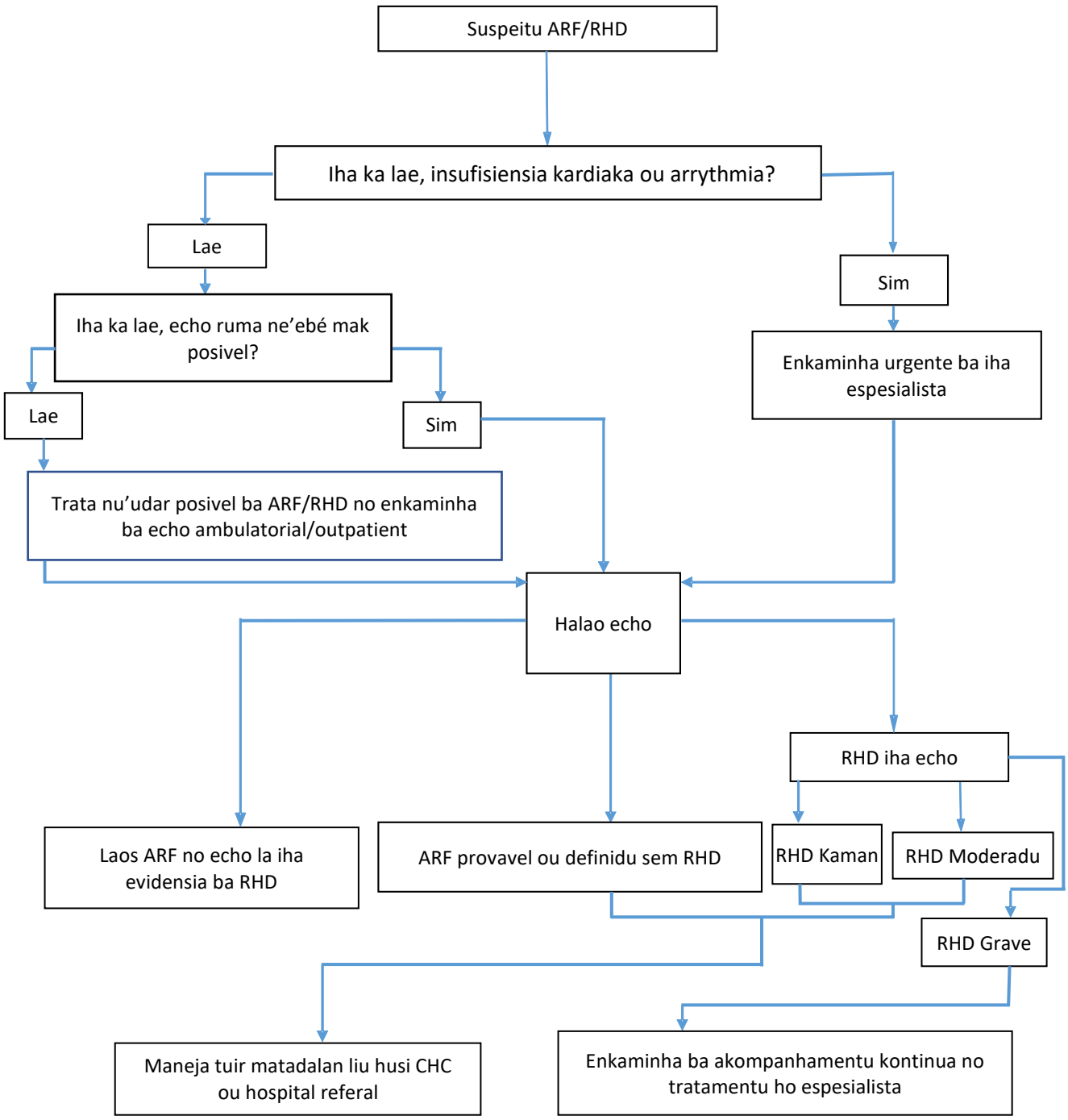


Image available at litfl.com / Bele hare imagem iha litfl.com

Figure 3: Diagnosis and referral algorithm for ARF and RHD in Timor-Leste
Figura 3: Algoritmu konaba diagnostiku no enkaminhamentu ba ARF no RHD iha Timor-Leste



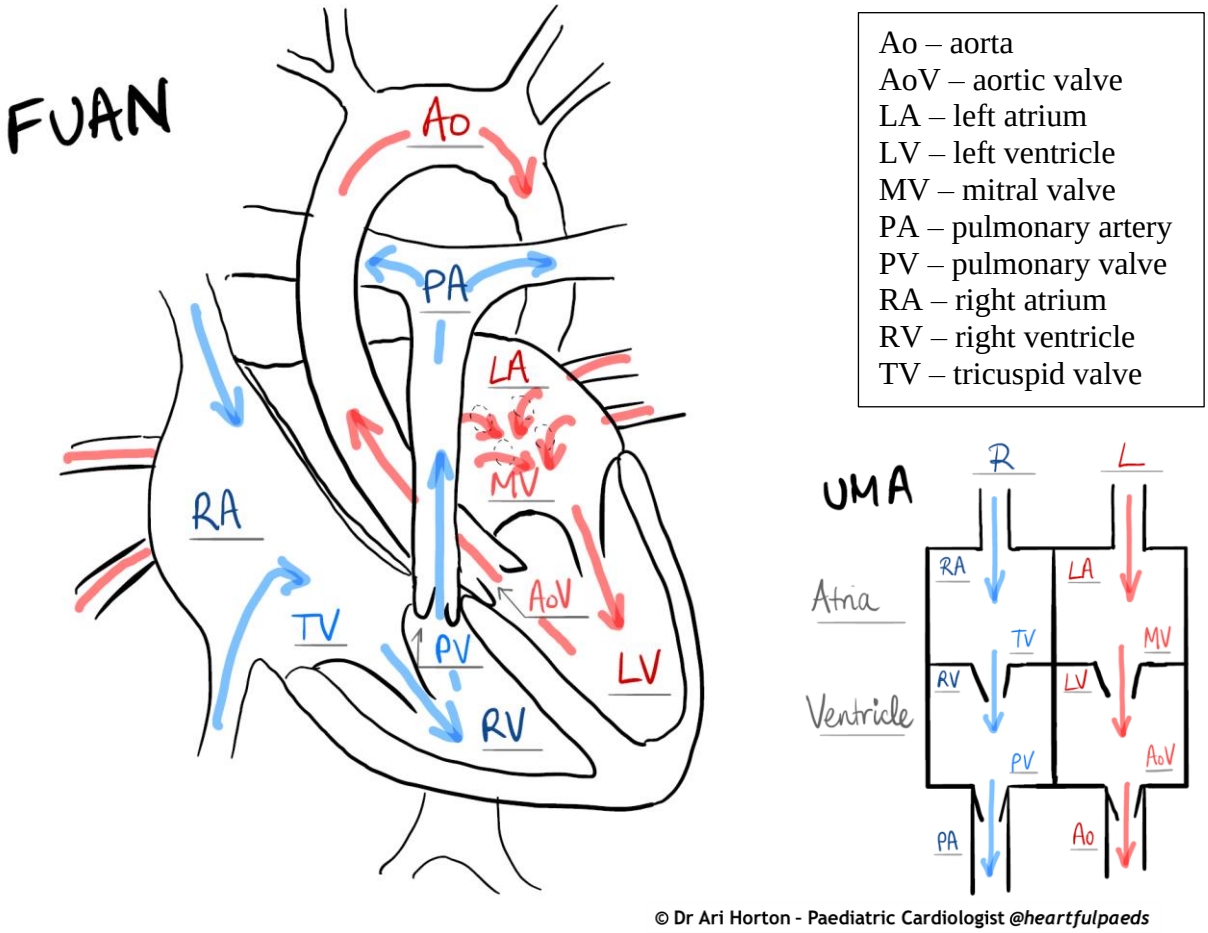


[1] If after all investigations are done, there is no evidence of ARF or RHD, no further treatment is required, but other differential diagnoses should be considered.
Karik depois de investigasaun konkluidu, no la hetan evidensia ba ARF ou RHD, entaun la presija halo tratamentu adisional, maibe tenke konsidera karik iha diagnostiku diferensial sira seluk.
[2] Specialist review may be with a paediatrician, internal medicine specialist or cardiologist, depending on the clinical condition.
Revizaun husi espesialista nian bele halao ho pediatriku (doutor ba labarik sira), espesialista medisina interna ou kardiologista depende tuir kondisaun klinika.

5. Diagnosis of rheumatic heart disease / Diagnostiku ba moras rematizmu fuan

The mitral valve is the most commonly affected valve in RHD, and the aortic valve the next most commonly affected. The tricuspid and pulmonary valves can also be affected, rarely. The valves can be regurgitant ('leaky'), stenotic ('narrowed') or a mix of both.
Valvula mitral mak valvula ne'ebé mais komun afetadu iha RHD, no valvula aortic mak normalmente segundu mais afetadu. Tricuspid no valvula pulmonar bele mos afetadu, raramente. Valvula bele regurgitante ('kuak/sulin sai'), estenotiku ('estreitadu') ou mistura rua ne'e hotu.

Figure 4: Anatomy of the heart / Figura 4: anatomia konaba fuan



RHD can be diagnosed on the basis of characteristic clinical features: symptoms of heart failure, angina (with severe aortic valve lesions), haemoptysis (with mitral stenosis) and arrhythmias; and murmurs detected on auscultation which point to mitral or tricuspid regurgitation (pan-systolic murmurs), or mitral stenosis or aortic regurgitation (diastolic murmurs). In mild cases patients may be asymptomatic, and murmurs may not be heard.
RHD bele diagnostikadu bazeia husi karakteristika klinika: sintoma husi insufisiensia kardiaka, angina (ho lezaun grave iha valvula aortic), haemoptysis (asosiadu ho mitral stenosis) no arrhythmias; no murmurus detektadu iha auskultasaun ne'ebé mak aponta ba regurgitasaun mitral ou tricuspid (pan-systolic murmurs), ou mitral stenosis ou regurgitasaun aortic

(diastolic murmurs). No entantu, iha kazu RHD kaman, pasiente dalaruma bele asintomatiku no dalaruma ita la rona nia murmura.

In every case of suspected ARF or RHD, an echocardiogram should be done. This can clarify the diagnosis when the clinical findings are uncertain, and can define the severity, which is important for treatment and prognosis.
Kazu ne'ebé mak suspeitadu ba ARF ou RHD, tenke halao teste ekokardiograma. Ida ne'e bele klarifika diagnostiku wainhira konkluzaun klinikal la serteza, no bele define nia gravidade, ne'ebé mak importante tebes ba tratamentu no prognostiku.

A diagnosis of RHD should be made on the basis of World Heart Federation (WHF) criteria for the echocardiographic diagnosis of RHD (5). A diagnosis of RHD can be made with an informal echocardiogram, but if an informal or screening echocardiogram is inconclusive, the patient should be referred for a formal echocardiogram to confirm the diagnosis. In cases with suspected RHD, secondary prophylaxis should be commenced, and continued until echocardiography is completed. An urgent specialist review should be arranged if there is a diagnosis of severe RHD or heart failure (figure 3). Specialist review may be with a paediatrician, internal medicine specialist or cardiologist, depending on the clinical condition.
Diagnostiku ba RHD tenke halao bazeia ba World Health Federation (WHF) nia kriteria konaba diagnostiku ekokardiografia ba RHD (5). Diagnostiku ba RHD bele halao ho ekokardiograma informal ida, maibe karik ekokardiograma informal ou triagem ne'e inkonklusivu, entaun pasiente tenke enkaminha ba ekokardiograma formal hodi konfirma nia diagnostiku. Ba iha kazu ne'ebé mak suspeitadu RHD, tenke inisia kedas profilaxia sekundaria no kontinua até ekokardiografia konklui ona. Tenke hetan revizaun ida urgente ho espesialista karik iha diagnostiku ba RHD grave ou insufisiensia kardiaka (figura 3). Revizaun husi espesialista nian bele halao ho pediatriku (doutor ba labarik sira), espesialista medisina interna ou kardiologista depende ba kondisaun klinika.

People diagnosed with definite RHD should receive treatment according to this guideline. People with borderline RHD based on WHF criteria, may be monitored without specific treatment. They should have repeat echocardiography within 2 years of their diagnosis of borderline RHD to check for progression. If they develop probable or definite ARF, or clinical or echocardiography signs of definite RHD, they should be treated accordingly.
Ema ne'ebé mak diagnostikadu ho RHD definidu tenke simu tratamentu konforme tuir matadalan ida ne'e. Ema ne'ebé ho borderline bazeia tuir kriteria WHF nian, ita bele monitora sira sem tratamentu espesifiku. Sira tenke repete ekokardiografia iha tinan 2 nia laran ba sira nia diagnostiku borderline RHD hodi Verifika nia progresu. Karik sira dezenvolve ARF definidu ou provavel, ou sinais klinika/ekokardiografiku husi RHD definidu, entaun tenke fó tratamentu ba sira ho propriu.

Access to echocardiography / Asesu ba ekokardiografia
Access to echocardiography can be difficult. Options in Timor-Leste include:
Asesu ba ekokardiografia sei difisil. Opsaun iha Timor-Leste, inklui:

- Formal echocardiogram by local specialist cardiologist, with referral to HNGV
  Ekokardiograma formal, husi espesialista kardiologista lokal, ho enkaminhamentu ba iha HNGV
- Formal echocardiogram by visiting specialist cardiologist, with referral to NGO East Timor Hearts Fund (ETHF)

Ekokardiograma formal liu husi konsulta ho espesialista kardiologista, ho enkaminhamentu ba iha NGO East Timor Hearts Fund (ETHF)

- Informal echocardiogram by health practitioner with brief training in ultrasound and echocardiography (with remote support and review from experts)
  Ekokardiograma informal, liu husi profesional saude ne'ebé mak ho/hetan treinamentu breve konaba ultrasom no ekokardiografia (ho apoiu remota no revizaun husi espesialista sira
- Screening echocardiogram as part of an echocardiography screening program in school, clinic or community settings
  Triagem ekokardiograma hanesan parte ida husi programa triagem ekokardiografia iha fasilidade eskola, klinika ou komunidade

Increasing capacity amongst health practitioners to be able to conduct informal echocardiography for the detection and diagnosis of RHD is an important strategy for improving access to RHD diagnosis in Timor-Leste. Further training for health practitioners based on the findings of recent studies is anticipated.
Hasae kapasidade entre profesional saude sira atu bele halo ekokardiografia informal hodi detekta no halo diagnostiku ba RHD, ne'e hanesan estrategia importante ida ba melhorasaun asesu diagnostiku RHD iha Timor-Leste. Treinamentu adisional ba profesional saude sira bazeia ba konkluzaun husi estudu resente ne'e antisipadu.

RHD is sometimes diagnosed during pregnancy, because of increased health checks for antenatal care and the increased demand on the heart during pregnancy, which can lead to cardiovascular complications. Mitral stenosis is especially high-risk during pregnancy, to the health of both mother and baby. New murmurs, or signs and symptoms of heart failure or arrhythmia in pregnant women, should be investigated urgently with echocardiography.
RHD as vezes disgnostikadu durante inan isin-rua/gravidez, tamba iha aumentu verifikasaun saude nian ba tratamentu antenatal no tamba ejizensia fuan nian aumenta durante isin-rua, no ida ne'e bele kauza komplikasaun kardiovaskular. Mitral stenosis mak espesialmente iha risku a'as ba inan no bebé durante isin-rua. Tenke investiga urgentemente uza ekokardiografia karik iha murmura foun, ou sinais no sintoma konaba insufisiensia kardiaka ou arrhythmia iha feto ne'ebé isin-rua.

Notification and follow up / Notifikasaun no Akompanhamentu
RHD is a notifiable disease in Timor-Leste and all new cases must be notified to the Departementu Vijilansia e Epidemiologia (VE). In addition, cases should be reported to an RHD register to ensure clinical follow up and ongoing secondary prophylaxis through the relevant health centre (chapter 8), and access to echocardiography and cardiology assessment as needed. An example of an RHD register is one supported by Maluk Timor (non-government organisation (NGO) partnering with Ministry of Health), which is accessible to all health services in Timor-Leste.
RHD ne'e moras ne'ebé mak notifikavel iha Timor-Leste no kazu foun hotu-hotu tenke notifika ba iha Departementu Vijilansia e Epidemiologia (VE). Alem de ida ne'e, kazu tenke relatadu ba iha registrasaun RHD nian hodi asegura akompanhamentu klinika no profilaxia sekundariu kontinua, liu husi sentru saude relevante (kapitulu 8), no asesu ba ekokardiografia no avaliasaun kardiologia konforme tuir nesesidade. Ezemplu ida husi registrasaun RHD mak hanesan suporta husi Maluk Timor (organizasaun non-governamental (NGO) halo parseiru ho Ministeriu Saude), ne'ebé mak bele asesu ba servisu saude hotu-hotu iha Timor-Leste.

Table 2: World Heart Federation criteria for echocardiographic diagnosis of RHD (10)

Tabela 2: World Heart Federation nia kriteria konaba diagnostiku ekokardiografia ba RHD (10)

Echocardiographic criteria for individuals aged ≤20 years / Ekokardiografika nia kriteria ba individual sira ho idade <20
Definite RHD (either A, B, C or D): / RHD definidu (bele A, B, C ou D) **A)** Pathological MR and at least two morphological features of RHD of the MV MR patológiku no pelu menus karakteristika morfológiku rua ba RHD husi MV **B)** MS mean gradient ≥4mmHg (congenital MV anomalies must be excluded) Gradiente mediu ba MS ≥4mmHg (anomalia MV kongenital tenke ser exkluidu) **C)** Pathological AR and at least 2 morphological features of RHD of the AV AR patológiku no pelu menus karakteristika morfológiku rua ba RHD husi AV **D)** Borderline disease of both the AV and MV / Moras borderline husi AV no mos MV
Borderline RHD (either A, B or C): / RHD borderline (bele A, B ou C) **A)** At least two morphological features of RHD of MV without pathological MR or MS Pelu menus karakteristika morfológiku 2 ba RHD husi MV sem MR patológiku ou MS **B)** Pathological MR / MR patológiku **C)** Pathological AR / AR patológiku
Normal echocardiographic findings (all of A, B, C and D) / Ekokardiografia nia Identifikasaun normal (A, B, C no D) **A)** MR that does not meet all 4 Doppler echocardiographic criteria (physiological MR) MR ne'ebé mak la preenxe kriteria ekokardiografia 4 husi Doppler (MR fisiológiku) **B)** AR that does not meet all 4 Doppler echocardiographic criteria (physiological AR) AR ne'ebé mak la preenxe Doppler nia kriteria ekokardiografia 4 ne'e hotu (AR fisiológiku) **C)** An isolated morphological feature of the RHD of the MV without pathological stenosis or regurgitation Karakteristika morfológiku ida izoladu ba RHD husi MV sem stenosis patológiku ou regurgitasaun **D)** An isolated morphological feature of the RHD of the AV without pathological stenosis or regurgitation Karakteristika morfológiku ida izoladu ba RHD husi AV sem stenosis patológiku ou regurgitasaun
Echocardiographic criteria for individuals aged >20 years / Ekokardiografia nia kriteria ba individual sira ho idade >20
Definite RHD (either A, B, C or D): / RHD definidu (bele A, B, C ou D) **A)** Pathological MR and at least two morphological features of RHD of the MV MR patológiku no pelu menus ho karakteristika morfológiku 2 ba RHD husi MV **B)** MS mean gradient ≥4mmHg Gradiente mediu ba MS ≥4mmHg **C)** Pathological AR and at least 2 morphological features of RHD of the AV, only in people aged <35 years AR patológiku no pelu menus ho karakteristika morfológiku 2 ba RHD husi AV, apenas ba ema ho idade <35 **D)** Pathological AR and at least 2 morphological features of RHD of the MV AR patológiku no pelu menus karakteristika morfológiku 2 ba RHD husi MV

Table 3 Morphological features of RHD and criteria for pathological regurgitation (3)

Tabela 3: Karakteristika morfológiku ba RHD no kriteria ba regurgitasaun patológiku (3)

Morphological features of RHD / Karakteristika morfológiku husi RHD	
Mitral valve **Valvula mitral**	AVML thickening ≥3mm (age specific) AVML Mahar/Bokar ≥3mm (idade espesifika) Chordal thickening Mahar/Bokar Chordal Restricted leaflet motion Mosaun folhetu/leaflet restritu Excessive leaflet tip motion during systole Mosaun pontu folhetu/leaflet exesivu durante sistole
Aortic valve **Valvula aortic**	Irregular or focal thickening Mahar/Bokar iregular ou focal Coaptation defect Defeitu koaptasaun Restricted leaflet motion Mosaun folhetu/leaflet restritu Leaflet prolapses folhetu/leaflet prolapsu

Criteria for pathological regurgitation / Kriteria ba regurgitasaun patológiku	
Mitral valve **Valvula mitral**	Seen in 2 views Vistu iha visualizasaun 2 In at least 1 view, jet length ≥2cm pelu menus iha visualizasaun 1, jet nia kumprimentu ≥2cm Peak velocity ≥3m/s Velosidade ne'ebé atinje pontu maximu ≥3m/s Pan-systolic jet in at least 1 envelope Pan-systolic jet pelu menus iha envelope 1
Aortic valve **Valvula aortic**	Seen in 2 views Vistu iha visualizasaun 2 In at least 1 view, jet length ≥1cm Pelu menus iha visualizasaun 1, jet nia kumprimentu ≥1cm Peak velocity ≥3m/s Velosidade ne'ebé atinje pontu maximu ≥3m/s Pan-systolic jet in at least 1 envelope Pan-systolic jet pelu menus iha envelope 1

Table 4: Classification of severity of regurgitation based on echocardiography findings (6)

Tabela 4: Klasifikasaun konaba regurgitasaun nia gravidade bazeia ba konkluzaun ekokardiografia (6)

Severity / Gravidade	Echocardiographic findings / Konkluzaun ekokardiografia
0	Nil, including physiological or trivial regurgitant jet <1.0 cm, narrow, small, of short duration, early systolic at mitral valve or early diastolic at aortic valve. Zero, inklui jet regurgitante fisiológiku ou trivial <1.0 cm, klo'ot, kiik, durasaun badak, sistóliku sedu iha valvula mitral ou diastóliku sedu iha valvula aortic.
0+	Very mild regurgitant jet, more than 1.0 cm, wider, localized immediately above or below the valve, throughout systole at the mitral valve or diastole at the aortic valve. Jet regurgitante kaman, bo'ot liu 1.0 cm, luan, lokalizadu imediatamente iha valvula nia leten ou okos, liu husi sistóliku iha valvula mitral ou diastóliku iha valvula aortic.
1+	Mild regurgitant jet. Jet regurgitante kaman.
2+	Moderate regurgitant jet, longer and at a wider area. Jet regurgitante moderadu, kleur no iha area ne'ebé mak luan.
3+	Moderately severe regurgitant jet, reaching the entire left atrium (mitral regurgitation) or left ventricle (aortic regurgitation). Jet regurgitante moderadamente grave, atinje tomak atrium parte karuk (regurgitasaun mitral) ou ventrikulu karuk (regurgitasaun aortic).
4+	Severe regurgitant jet, diffusely into the enlarged left atrium, with systolic backward flow into pulmonary veins (mitral valve); markedly enlarged left ventricle filled with regurgitant jets (aortic valve). Jet regurgitante grave, espalha ba iha atrium karuk ne'ebé mak enlargadu, ho refluxu sistóliku ba iha veias pulmonares (valvula mitral); markadamente ventrikulu karuk ne'ebé mak enlargadu nakonu ho jet regurgitante (valvula aortic).

6. Management of acute rheumatic fever / Gestaun ba febre remátika aguda

Explain to the patient and their family, the diagnosis of ARF. Discuss the possibility of cardiac involvement, and consider referral for ECG and echocardiogram, if this has not been done already.

Explika ba pasiente no nia familia, konaba diagnostiku ARF. Diskute posibilidade ba envolvimentu kardiaka, no konsidera atu haruka ba ECG no ekokardiograma, karik ida ne'e seidauk halao.

Cases of ARF should be referred for inpatient management in a referral hospital or Hospital Nacional Guido Valadares (HNGV), if they have any of the following features:

- Heart failure
- Chest pain or dyspnoea
- Uncontrolled joint pain
- Chorea
- Jaundice
- Arrhythmia (including second or third degree heart block)

Kazu ARF nian tenke enkaminha ba gestaun inpatient/baixa iha hospital referal ou Hospital Nasional Guidu Valadares (HNGV), karik sira iha karakteristika hanesan tuir mai:

- Insufisiensia kardiaka
- Sente moras iha hirus matan ou iis boot
- Moras iha artikulasaun deskontroladu
- chorea
- Jaundice (moras kinur)
- Arrhythmia (inklui blokeiu kardiaku segundu ou terseiru grau)

Other, milder cases may be managed initially through community health centres, but a referral for an outpatient echocardiogram should be made, to diagnose or exclude RHD (chapter 6).

Ba kondisaun seluk, kazu kaman bele tratadu inisialmente liu husi sentru saude komunitaria, maibe tenke halo enkaminhamentu ba ekokardiograma outpatient, hodi halo diagnostiku ou exklui RHD (Kapitulu 6).

Management of an episode of definite or probable ARF, includes:

- Antibiotic treatment to clear GAS colonisation or infection (essential)
- Pain management for joint pain (if needed)
- Treatment for severe carditis and heart failure (if needed)
- Treatment for chorea (if needed)

Gestaun ba ARF definidu ou provavel nia episodiu, inklui mos:

- Tratamentu antibiótiku hodi hamos kolonizasaun GAS ou infeksaun (esensial)
- Tratamentu ba moras artikulasaun (karik nesesariu)
- Tratamentu ba carditis grave no insufisiensia kardiaka (karik nesesariu)
- Tratamentu ba chorea (karik nesesariu)

Antibiotic treatment to clear GAS colonisation or infection / Tratamentu antibiótiku hodi hamos infeksaun ou kolonizasaun GAS

Antibiotics are commenced immediately and should be continued as part of secondary prophylaxis (chapter 8).
Inisia antibiótiku imediatamente no tenke kontinua hanesan parte ida husi profilaxia sekundaria (kapitulu 8).

- Give a single dose of intramuscular (IM) benzathine penicillin-G (BPG) at the time of diagnosis (the next dose will be due 4 weeks later)
    - ≥20 kg: 1,200,000 IU
    - <20 kg: 600,000 IU
- Administra benzathine penicillin-G (BPG) liu husi intramuskular (IM) hanesan dose unika, iha momentu diagnostiku (dose tuir mai sei fó depois de semana 4)
    - ≥20 kg: 1.200.000 IU
    - <20 kg: 600.000 IU

Oral antibiotics may be given as an alternative in the following circumstances:
Antibiótiku oral bele administra hanesan alternativu ida, ba sirkumstansia hanesan tuir mai:

- Severe RHD with heart failure or severe pulmonary hypertension on echocardiography
    - Oral penicillin-V 250-500 mg twice daily OR
    - Oral amoxycillin 250-500 mg once or twice daily

  RHD grave hamutuk ho insufisiensia kardiaka ou hipertensaun pulmonaria grave iha ekokardiografia
    - Penisilina-V oral 250-500mg, loron ida dala 2 OU
    - Amoxycillin oral 250-500mg, loron ida dala 1 ou 2

- Confirmed penicillin allergy / Konfirmadu alergia ba penisilina
    - Oral erythromycin 250 mg twice daily
      Erythromycin oral 250mg loron ida dala 2

If oral antibiotics are given, they should be given for at least 10 days, and then continued as secondary prophylaxis if BPG still contraindicated (chapter 8).
Karik administra ona antibiótiku oral, pelu menus tenke administra durante loron 10, no depois kontinua hanesan profilaxia sekundaria karik BPG sei nafatin kontraindikadu (kapitulu 8).

Doses of antibiotics, and other treatment given, should be entered into the patient-held medical record for rheumatic heart disease (**PHMR-RHD).**
Antibiótiku nia dose no tratamentu sira seluk ne'ebé mak ita administra ona, tenke hatama ba iha Livrinu RHD / PHMR

Pain management for joint pain / Gestaun ba moras artikulasaun

Non-steroidal anti-inflammatory drugs (NSAID) or paracetamol can be given for fever or joint pain. Joint pain in ARF usually responds very well to NSAID therapy, and a rapid response to treatment is suggestive of the diagnosis of ARF. Aspirin is sometimes used but is not on the essential medicines list in Timor-Leste. Ibuprofen is a good alternative.

Bele administra Non-steroidal anti-inflammatory drugs (NSAID) ou paracetamol, karik febre ou sente moras iha artikulasaun. Moras artikulasaun iha ARF, normalmente responde ho diak ba terapia NSAID, no resposta ida ne'ebé mak rapida ba tratamamentu, ne'e sugestivu diagnostiku ba ARF. Dalaruma uza Aspirin maibe ida ne'e la tama ba iha lista medikamentu esensial iha Timor-Leste. Ibuprofen mak alternativu ne'ebé diak.

Treatment for severe carditis and heart failure / Tratamentu ba carditis grave no insufisiensia kardiaka

Mild carditis does not usually require any specific treatment, apart from commencement of secondary prophylaxis. People with severe carditis or heart failure should be admitted to hospital. They require an urgent echocardiogram to confirm the diagnosis and to guide treatment. The management of acute carditis is based on medical management of acute heart failure. In the setting of ARF with severe carditis or heart failure, the following management strategies should be considered, with involvement of specialist doctors with expertise in the management of severe RHD in a referral hospital (see table 2 for dosing):

Carditis kaman normalmente la nesesita kualker tratamentu espesifiku, alem de inisiu husi profilaxia sekundaria. Ema ne'ebé ho carditis grave ou insufisiensia kardiaka tenke ba baixa iha hospital. Sira presiza ekokardiograma urgente hodi konfirma diagnostiku no hodi guia tratamentu. Gestaun ba carditis agudu ne'e bazeia tuir gestaun medikal ba insufisiensia kardiaka aguda nian. Ba kondisaun ARF ne'ebé mak asosiadu ho carditis grave ou insufisiensia kardiaka, entaun estrategia ba gestaun hirak tuir mai tenke konsideradu, no hamutuk ho involvimentu husi doutor espesialista ne'ebé mak iha esperiensia ba gestaun RHD grave iha hospital referal (hare tabela 2, konaba atu administra dose):

- Bed rest, with limited mobilisation as symptoms permit
  Deskansa iha kama, ho mobilizasaun limitadu, konforme sintoma permite
- Fluid restriction and diuretics for heart failure
  Restrisaun fluidu no diuretiku ba insufisiensia kardiaka
    - Start with oral furosemide
      Inisia ho furosemide oral
    - Oral spironolactone can be added if heart failure not controlled and should be given if furosemide is dosed more than twice per day
      Bele adisiona Spironolactone oral karik insufisiensia kardiaka la kontroladu no tenke administra karik furosemide nia dose loron ida rua ba leten
    - Doses of diuretics can be increased gradually if tolerated without hypotension
      Diuretiku nia dose bele aumenta gradualmente karik bele tolera sem hipotensaun
- ACE inhibitors are sometimes used in cases with severe heart failure
  Inhibidor ACE, as vezes uza ba kazu ne'ebé mak ho insufisiensia kardiaka grave
    - Oral captopril should be started at a low dose and gradually increased if tolerated without hypotension (spironolactone and captopril should not be given together because of risk of hyperkalaemia)

Captopril oral tenke inisiadu ho dose kiik no aumenta gradualmente karik bele tolera sem hipotensaun (spironolactone no captopril la bele administra hamutuk tamba risku ba hyperkalaemia)

- Beta-blockers are sometimes used in cases with mitral stenosis
  Beta-blockers as vezes uza ba iha kazu ne'ebé mak asosiadu ho mitral stenosis
  - Bisoprolol can be started in consultation with a specialist
    Bele komesa Bisoprolol karik iha ona Konsultasaun ho espesialista
  - Titrate beta-blockers targeting heart rate 60-90 (or 100-120 if pregnant)
    Titrate beta-blockers aponta taxa kardiaka nian 60-90 (ou 100-120 karik inan isin-rua)
- Steroids are sometimes used in severe carditis
  Steroids dalaruma uza ba iha carditis grave
  - Oral prednisolone can be given in Timor-Leste
    Prednisolone oral, bele administra iha Timor-Leste
  - Meta-analyses do not show any significant long-term benefit
    Meta-analiza la hatudu kualker benefisiu longu prazu ne'ebé mak signifikativu
  - If steroids are given, beware of potential consequences of immunosuppression, and rule out tuberculosis (TB) before starting, especially if there is a history of household contact with tuberculosis
    Karik administra ona steroids, kuidadu no atensaun ba konsekuensia potensial husi imunosupresaun no deskarta/hasai tuberkuloze antes komesa, espesialmente karik iha historia konaba kontaktu ho tuberkuloze iha familia nia laran
  - If there is a history of household contact with tuberculosis, without evidence of active TB, empiric treatment for latent TB infection should be considered
    Karik iha istoria ba kontaktu tuberkuloze nian iha familia laran, sem evidensia husi tuberkuloze ativu, entaun tratamentu empiriku ba infeksaun tuberkuloze latente tenke ser konsideradu
- Anti-arrhythmic drugs are rarely indicated in acute carditis
  Medikamentu anti-arrhythmic raramente indikadu ba carditis agudu
  - Oral digoxin may be given if atrial fibrillation is present
    Bele administra digoxin oral karik iha fibrilasaun atrial

Treatment for chorea / Tratamentu ba chorea

Most cases of Sydenham's chorea do not need specific treatment, and patients can be reassured that the abnormal movements usually settle after 3-6 months. In cases that significantly impact function and quality of life, the following treatments can be considered:
Kazu barak husi Sydenham's chorea ne'e la presiza tratamentu espesifiku ruma no bele reafirma ba pasiente katak movimentu anormal bain-bain sei diak depois de fulan 3-6. Iha kazu ne'ebé mak fó impaktu signifikantemente ba funsaun no kualidade moris, entaun bele konsidera tratamentu hirak hanesan tuir mai:

- Oral carbamazepine is usually first-line and is available in all health services
  Carbamazepine oral ne'e normalmente linha primeiru no nia disponivel iha fasilidade saude hotu-hotu
- Oral sodium valproate is a second-line option for those who do not respond
  Sodium valproate oral, mak opsaun segunda linha ba sira ne'ebé mak la responde

Table 5: Medicines used in the treatment of ARF and RHD – Quick Reference Guide

Tabela 5: Medikamentu ne'ebé mak uza ba iha tratamentu ARF no RHD – Guia Referensia Rapida

Use	Medication	Strength (form)	Usual dose	Route	Health facility*	Pregnancy~
Antibiotic treatment	**Benzathine penicillin-G**	900 mg (1,200,000 IU) OR 1800 mg (2,400,000 IU) (powdered vial)	≥20 kg: 900 mg (1,200,000 IU) <20 kg: 450 mg (600,000 IU) as a single dose (then continue secondary prophylaxis)	IM	Health post	A
	Penicillin-V	250 mg (scored tablet) 250 mg/5ml (syrup)	250 mg BID for 10 days (then continue secondary prophylaxis)	PO	Health post	A
	Amoxycillin	500 mg (scored tablet) 125 mg/5ml (syrup	250 mg BID or 500 mg OD for 10 days (then continue secondary prophylaxis)	PO	Health post	A
	Erythromycin	250 mg (tablet) 125mg/ 5ml (syrup)	250 mg BID for 10 days (then continue secondary prophylaxis)	PO	Health post	A
Pain relief	**Ibuprofen**	400 mg (scored tablet) 100 mg/5ml (syrup)	Adult: 400 mg TID Child: 5-10 mg/kg TID	PO	Health post	C
	Paracetamol	500 mg (scored tablet) 125 mg/5ml (syrup)	Adult: 1000 mg QID Child: 15 mg/kg QID	PO	Health post	A
Carditis treatment	**Furosemide**	40 mg (scored tablet)	Adult: 20-40 mg OD, BID, TID or QID Child: 0.5-1 mg/kg OD, BID, TID or QID	PO	Health post	C
		10 mg/ml (2ml ampoule)	Adult: 20-40 mg OD, BID, TID or QID Child: 0.5-1 mg/kg OD, BID, TID or QID	IV	Health post	
	Spironolactone	25 mg (tablet)	≥20 kg: 25 mg OD, BID or TID <20 kg: 12.5mg OD, BID or TID	PO	Hospital	B
	Captopril	50 mg (scored tablet)	Adults: 12.5-25 mg TID Child 0.1 mg/kg TID	PO	District health centre	D
	Prednisolone	5 mg OR 20 mg (tablet)	1-2 mg/kg OD	PO	Sub-district health centre	A
	Digoxin	250 mcg (tablet) 50 mcg/ml (syrup)	Adult: 250 mcg OD Child: 3-5 mcg/kg OD	PO	Hospital	A
	Bisoprolol	5 mg (tablet)	Commence: 1.25 – 2.5 mg OD Increase to 10 mg OD as tolerated	PO	District health centre	C
Chorea treatment	**Carbamazepine**	200 mg (scored tablet)	Adult: 100 mg TID Child: 3.5-10 mg/kg BID	PO	Health post	D
	Sodium valproate	200 mg (tablet)	Adult: 200mg BID Child: 7.5-10 mg/kg BID	PO	Sub-district health centre	D
	Prednisolone	5 mg OR 20 mg (tablet)	1-2 mg/kg OD	PO	Sub-district health centre	A

*Health facility categories: **Hospital**: for use by hospitals only (HNGV and District Referrals Hospitals), **District health centre**: For use by District Health Centre and all hospitals, **Sub-district health centre:** For use by Sub-district Health Centres, all District Health Centres and all Hospitals, **Health post**: For use by all health facilities

*Kategoria Fasilidade Saude: **Hospital**: atu uza apenas iha hospital (HNGV no Hospital Referal Distrital), **Sentru Saude Munisipiu**: atu uza iha Sentru Saude Munisipiu no hospital hotu-hotu, **Sentru Saude Postu-Administrativu**: atu uza iha Sentru Saude Postu-Administrativu, Sentru Saude Munisipiu no Hospital hotu-hotu, **Postu Saude**: atu uza iha fasilidade saude hotu-hotu

~Pregnancy categories: **A:** no proven harmful effects, **B:** no known harmful effects, but limited data, **C:** may cause harmful effects, which may be reversible, **D:** have been proven to cause harmful effects that may be irreversible

~Kategoria ba inan isin-rua: **A**: la iha efeitu prejudisial ne'ebé mak komprovadu, **B**: la iha efeitu prejudisial ne'ebé mak konhesidu, maibe dadus limitadu, **C**: bele kauza efeitu prejudisial, ne'ebé mak bele kura, **D**: komprovadu ona katak bele kauza efeitu prejudisial ne'ebé mak dalaruma sei la bele kura

Notification and follow up / Notifikasaun no Akompanhamentu

ARF is not a notifiable disease in the current Integrated Disease Surveillance Response (IDSR) guideline in Timor-Leste. Regardless, cases of ARF should be reported to an RHD register to ensure clinical follow up and ongoing secondary prophylaxis through the relevant health centre (chapter 8), and access to echocardiography and cardiology assessment as needed. An example of an RHD register is one supported by Maluk Timor (non-government organisation (NGO) partnering with Ministry of Health), which is accessible to all health services in Timor-Leste. RHD is a notifiable disease in Timor-Leste and all new cases must be notified to the Departementu Vijilansia e Epidemiologia (VE).

ARF ne'e laos moras ne'ebé notifikavel iha Matadalan atual Resposta Vigilansia Moras Integradu (IDRS) nian iha Timor-Leste. Alem de ida ne'e, kazu ARF tenke relatadu ba iha registru RHD hodi asegura akompanhamentu klinikal no kontinua profilaxia sekundaria, liu husi sentru saude relevante (kapitulu 8), no asesu ba ekokardiografia no avaliasaun kardiológika konforme tuir nesesariu. Ezemplu husi registrasaun RHD, mak hanesan ida ne'ebé suporta husi Maluk Timor (organizasaun non-governamental (NGO)) halo parseira ho Ministeriu Saude, ne'ebé mak asesivel ba servisu saude hotu-hotu, iha Timor-Leste. RHD mak moras ne'ebé notifikavel iha Timor-Leste no kazu foun hotu-hotu tenke notifika ba iha Departementu Vijilansia e Epidemiologia (VE).

A patient-held medical record (PHMR) can be a very useful way of supporting a patient through long-term follow up, like what is needed for people with ARF and RHD. If possible, all patients with ARF should be given a PHMR which will stay with the patient, and include the patient's diagnosis, details of echocardiography and other investigation results, notes from clinical appointments, dates for follow up appointments, and a record of secondary prophylaxis. The secondary prophylaxis section will help the patient to know when their next BPG dose is due and will help ensure continuity of care across different parts of the health service.

Patient-held medical record (PHMR) bele sai dalan util ida hodi suporta pasiente sira ne'ebé mak halo akompanhamentu longu-prazu, ezemplu hanesan nesesariu ba ema sira ne'ebé mak ho ARF no RHD. Karik posivel, tenke fó PHMR ba pasiente RHD hotu-hotu, tamba ida ne'e sei rai hamutuk ho pasiente, no inklui pasiente nia diagnostiku, detalhus/informasaun husi ekokardiografia no rezultadu investigasaun sira seluk, notas husi apontamentu klinikal sira, data apontamentu hodi halo akompanhamentu, no profilaxia sekundaria nia registru. Seksaun profilaxia sekundaria sei ajuda pasiente hodi hatene bainhira mak sira atu simu tan dose BPG no sei ajuda hodi asegura tratamentu nia kontinuidade iha fatin servisu saude ne'ebé mak diferente.

7. Management of rheumatic heart disease / Gestaun ba moras rematizmu fuan

The medical management of RHD follows the same principles as the management of acute carditis in the setting of ARF (chapter 5). Patients with RHD also require ongoing secondary prophylaxis to prevent further episodes of ARF and progression of RHD (chapter 8). Most people with mild or moderate RHD do not require any specific ongoing medical treatment, apart from secondary prophylaxis. Secondary prophylaxis is very important, to prevent further episodes of ARF, which may worsen RHD.
Gestaun medikal ba RHD halo tuir prinsipiu ne'ebé hanesan ho gestaun ba carditis agudu iha kazu ARF nian (Kapitulu 5). Pasiente ho RHD mos nesesita profilaxia sekundaria ne'ebé kontinua, atu bele prevene ARF nia episodiu seluk no RHD nia progresu (kapitulu 8). Ema barak ne'ebé mak ho RHD kaman no moderadu la presiza kualker tratamentu klinikal espesifiku ne'ebé mak kontinua, alem de profilaxia sekundaria. Profilaxia sekundaria ne'e importante tebes, hodi prevene ARF nia episodiu seluk tan, ne'ebé mak dalaruma sei perigu liu tan.

Counselling is a very important part of the management of RHD. Patients and their families should receive information in their own language, so that they can understand the pathway to RHD, the opportunities for prevention and treatment, and the potential severe consequences of RHD, including heart failure, stroke and death.
Fó konselhu ne'e parte ida importante tebes husi gestaun ba RHD. Pasiente no sira nia familia tenke simu informasaun ho sira nia lian rasik, atu nune'e sira bele komprende prosesu/dalan ba RHD, oportunidade ba prevensaun no tratamentu no potensia ba konsekuensia grave husi RHD, inklui insufisiensia kardiaka, stroke no mate.

Those with severe RHD and associated heart failure may require ongoing treatment with diuretics (furosemide, spironolactone), ACE inhibitors (captopril). Those with arrhythmia may require digoxin, and people with mitral stenosis are sometimes treated with bisoprolol (table 2). Medical treatment should be individualised and will usually be guided by a specialist in paediatrics, cardiology or internal medicine.
Sira ne'ebé ho RHD no asosiadu ho insufisiensia kardiaka sei bele nesesita tratamentu ne'ebé kontinua hamutuk ho diurétiku (furosemide, spironolactone), inhibidor ACE (captopril). Sira ne'ebé ho arrhythmia sei bele presiza digoxin no ema ne'ebé ho mitral stenosis as vezes tratadu ho bisoprolol (tabela 2). Tratamentu medikal tenke individualizadu no normalmente sei guiadu liu husi espesialista iha pediatriku, kardiologia ou medisina interna.

Some people with severe valvular disease may be referred internationally for consideration of valve surgery. Following valve surgery, people remain at risk of further episodes of GAS infection and ARF, and secondary prophylaxis should be continued. Following valve replacement, anti-coagulation therapy may be required, and these patients should have ongoing follow-up with a specialist in paediatrics, cardiology or internal medicine.
Ema balun ho moras valvula grave dalaruma sei bele enkaminha internasionalmente ba konsiderasaun atu halao sirurgia valvula. Depois de sirurgia iha valvula, ema sira ne'e nafatin iha risku atu enfrenta episodiu seluk husi infeksaun GAS no ARF, no profilaxia sekundaria tenke ser kontinua nafatin. Depois de halo substituisaun ba valvula, terapia anti-koagulante

sei bele nesesariu, no pasiente sira ne'e tenke kontinua halo akompanhamentu ho espesialista iha pediatriku, kardiologia ou medisina interna.

Borderline RHD

People with borderline RHD, and no history of ARF, do not require any specific medical treatment. Some cases of borderline RHD resolve on their own, and many persist without change. Some cases can progress to definite RHD. Anybody who has been diagnosed with borderline RHD on echocardiography, should have repeat echocardiography within 2 years to check for progression. If the follow up echocardiography shows definite RHD, or if they have any episode of definite or borderline ARF, they should be treated accordingly.

Ema ne'ebé ho Borderline RHD, no la iha istoria ba ARF, sei la presija tratamentu medikal espesifiku. Kazu borderline RHD balun diak rasik deit, no barak mantein nafatin sem mudansa. Kazu balun bele progresa ba RHD definidu. Ema ne'ebé mak diagnostikadu ona ho borderline iha ekokardiografia, tenke repete ekokardiografia iha tinan 2, hodi Verifika nia progresaun. Karik akompanhamentu iha ekokardiografia hatudu RHD defenidu, ou karik sira iha episodiu ruma husi ARF defenidu ou ARF borderline, tenke trata ema sira ne'e apropriadamente.

Dental care / Tratamentu dental

People with RHD are at risk of infective endocarditis, which can sometimes happen because of transient bacteraemia associated with poor dental health. People with RHD should brush their teeth at least twice daily, and floss daily. They should be advised to avoid sugary foods and drinks, as these can cause dental cavities. Those with poor dental health should be referred urgently to a dental clinic for treatment, and all people with RHD should have a regular dental check yearly.

Ema ne'ebé ho RHD iha risku ba endocarditis infektivu, ne'ebé mak dalaruma bele mosu tamba bateremia transiente asosiadu ho saude dental ne'ebé la diak. Ema ho RHD tenke kose sira nia nehan pelu menus loron 1 dala 2, no sukit/hamos nehan (floss) loron-loron. Tenke fó konselhu ba sira atu evita hahan ho bebidas ne'ebé midar, tamba buat sira ne'e bele kauza nehan kuak. Sira ne'ebé mak saude dental la diak tenke enkaminha urgentemente ba iha klinika dental hodi halo tratamentu, no ema hotu-hotu ne'ebé mak ho RHD tenke halo konsulta dental regular, kada tinan.

Prevention of infective endocarditis / Prevensaun ba endocarditis infeksioza

Tattooing, piercing and intravenous drug use should be discouraged, due to the risk of bacteraemia and subsequent infective endocarditis. People with RHD or prosthetic valves should receive antibiotic prophylaxis prior to procedures expected to produce bacteraemia (e.g. dental or surgical procedures where infection is present).

Tattoo, tu'u isin (piercing) no uza droga liu husi intravenoza tenke desenkoraja/hapara, tamba hare ba risku husi bakteremia no endocarditis infektivu subsekuente. Ema ne'ebé ho RHD ou valvula prostetiku, tenke simu profilaxia antibiótiku antes ba prosedimentu ne'ebé mak bele produs bakteremia (ezemplu, prosedimentu dental ou sirurgika ne'ebé mak iha infeksaun)

- Amoxicillin 50 mg/kg (up to 2000 mg) PO, 60 minutes before a procedure
  Amoxicillin 50 mg/kg (até 2000 mg) PO, minutu 60 antes prosedimentu
- OR clindamycin 15 mg/kg (up to 600 mg) PO, 60 minutes before a procedure*, if there is a confirmed history of penicillin allergy*
  OU clindamycin 15 mg/kg (até 600 mg) PO, minutu 60 antes prosedimentu*, karik iha historia ne'ebé konfirmadu ba alergia penicillin*

Family planning / Planeiamentu familiar

Discussion regarding family planning should be undertaken with all women above the age of 16 who have a history of RHD, even if immediate pregnancy is not planned. This is because of the increased demand on the heart during pregnancy, to support blood flow to mother and baby.

Diskusaun konaba planeiamentu familiar tenke halao hamutuk ho inan/feton sira hotu, ho idade tinan 16 ba leten ne'ebé mak iha historia ba RHD, maske sira seidauk iha planu ba isin-rua. Ida ne'e tamba ita hare nesesidade ba fuan nian elevada durante isin-rua, hodi suporta fluxu ran ba inan no bebe.

It might be appropriate to involve family in the discussion and it should be done in a way that is culturally appropriate, focusing on heart health. All women should be advised to plan their pregnancy and to report a pregnancy to their health care provider as soon as they can.

Ida ne'e sei sai apropriadu liu atu envolve ho familia sira iha diskusaun refere no tenke halao tuir dalan ne'ebé kulturalmente apropriadu, foka konaba saude fuan nian. Inan/feton hotu-hotu tenke hetan konselhu atu iha planu ba sira nia isin-rua no hato'o sedu sira nia kondisaun (isin-rua) ba iha doutor, karik posivel.

Women with mild disease should be advised to discuss pregnancy with a doctor before they get pregnant. Patients with moderate to severe disease should be given family planning advice and a reliable method of contraception should be encouraged.

Inan/feton ne'ebé ho moras kaman tenke fó konselhu atu diskute doutor konaba sira nia isin-rua, antes atu hetan isin-rua. Pasiente ho moras moderadu até grave, tenke fornese ba sira konselhu konaba planeiamentu familiar no tenke enkoraja metodu kontrasepsaun ne'ebé mak konfiavel.

If a woman with RHD is pregnant, close follow up for the duration of the pregnancy should be advised. Beta-blockers may be needed (table 2). In cases of severe RHD during pregnancy, delivery should be discussed with a specialist, and caesarean section may be required.

Karik inan/feton ne'ebé ho RHD hetan isin-rua, entaun tenke fó konselhu atu halo akompanhamentu durante isin-rua. Dalaruma sei presiza Beta-blockers (tabela 2). Ba kazu RHD grave durante isin-rua, dalan atu partus nian tenke deskuti ho espesialista, no dalaruma sei nesesariu ba operasaun cesariana.

Patient-held medical record / Pasiente/kaer rasik nia registru medikal

If possible, all patients with RHD should be given a PHMR which will stay with the patient, and include the patient's diagnosis, details of echocardiography and other investigation results, notes from clinical appointments, dates for follow up appointments, and a record of secondary prophylaxis. The secondary prophylaxis section will help the patient to know when their next BPG dose is due and will help ensure continuity of care across different parts of the health service.

Karik posivel, tenke fó PHMR ba pasiente RHD hotu-hotu, tamba ida ne'e sei rai hamutuk ho pasiente, no inklui pasiente nia diagnostiku, detalhus/informasaun husi ekokardiografia no rezultadu investigasaun sira seluk, notas husi apontamentu klinikal sira, data apontamentu hodi halo akompanhamentu, no profilaxia sekundaria nia registru. Seksaun profilaxia sekundaria sei ajuda pasiente hodi hatene bainhira mak sira atu simu tan dose BPG no sei ajuda hodi asegura tratamentu nia kontinuidade iha fatin servisu saude ne'ebé mak diferente.

8. Secondary prevention of acute rheumatic fever and rheumatic heart disease / Prevensaun sekundaria ba febre remátika aguda no moras rematizmu fuan

Those with a history of ARF or established RHD, have a high risk of further episodes of ARF and progression of RHD following GAS infections. For this reason, regular antibiotics are given as secondary prophylaxis, to prevent GAS infection. This is effective at preventing ARF and preventing progression of RHD. In some cases, secondary prophylaxis can result in improvement and even resolution of RHD.

Ema sira ne'ebé mak ho historia husi ARF ou RHD estabilizadu, sira iha risku a'as ba ARF nia episodiu seluk tan no progresa ba RHD depois de infeksaun GAS. Tamba razaun ida ne'e mak, administra antibiótiku ho regular, hanesan profilaxia sekundaria, hodi prevene infeksaun GAS. Ida ne'e efetivu ba prevensaun ARF no prevene RHD nia progresu. Iha kazu balun, profilaxia sekundaria bele halo melhorasaun no bele fó rezolusaun ba RHD.

In pregnant patients, secondary prophylaxis should continue for the duration of pregnancy to prevent recurrent ARF. All antibiotics used for secondary prophylaxis are safe in pregnancy. Pregnant patients with RHD are at high risk and should have close and careful follow up.

Ba pasiente ne'ebé mak isin rua, profilaxia sekundaria tenke kontinua tuir durasaun isin rua hodi prevene ARF nia rekorensia. Antibiótiku hotu-hotu ne'ebé mak uza ba profilaxia sekundaria, ne'e seguru ba inan isin-rua. Pasiente isin rua ho RHD, iha risku a'as no tenke halo akompanhamentu estreitu no ho kuidadu.

Secondary prophylaxis with regular BPG injections (first-line) / Profilaxia sekundaria ho injeksaun BPG regular (linha primeiru)

BPG is preferred for secondary prophylaxis, because of its long half-life and the fact that it is effective when it is given every 28 days. Regular administration is required to prevent recurrent ARF (15), and poor adherence increases the risk of recurrent ARF and progression of RHD. BPG is safe in the majority of cases, and can be given earlier than day 28, and so patients who are receiving secondary prophylaxis should be encouraged to get their injection on time or early.

BPG ne'e preferidu ba profilaxia sekundaria, tamba nia meia-vida longu no tuir faktu hatudu katak profilaxia sekundaria ne'e efektivu wainhira administra kada loron 28. Administrasaun regular nesesariu hodi prevene ARF atu labele mosu fila fali (15), no aderensia ne'ebé la los sei aumenta risku ba ARF atu mosu fila fali no RHD nia progresaun. BPG ne'e seguru iha kazu barak, no bele administra sedu antes loron 28, no tamba ne'e mak pasiente sira ne'ebé simu profilaxia sekundaria tenke enkoraja atu simu sira nia injeksaun tuir nia tempu ou sedu.

Management considerations in cases with severe RHD / Konsiderasaun gestaun ba kazu ne'ebé ho RHD grave

A small proportion of people with RHD may require oral antibiotics rather than BPG for secondary prophylaxis, for medical reasons or because of refusal to accept injections. In these cases, antibiotics must be administered every day, and adherence should be monitored carefully.

Proporsaun ema oituan ne'ebé mak ho RHD, dalaruma sei presiza antibiótiku oral em vez de BPG ba profilaxia sekundaria, tamba razaun medikal ou tamba la bele simu injeksaun. Ba kazu ida ne'e, antibiótiku tenke administra loron-loron, no tenke monitoriza nia aderensia ho kuidadu.

In patients who have severe pulmonary hypertension or uncontrolled heart failure due to severe RHD, painful stimuli including BPG injections can result in rapid deterioration and cardiac decompensation, and in some cases even death (16). For this reason, patients with severe pulmonary hypertension, or uncontrolled heart failure requiring ongoing medical therapy, are recommended to have oral antibiotics for secondary prophylaxis in Timor-Leste. These cases should be discussed individually with a specialist in paediatrics, cardiology or internal medicine.

Ba pasiente sira ne'ebé mak iha hipertensaun pulmonariu grave ou insufisiensia kardiaka deskontroladu tamba RHD grave, kuandu fó estimulu ne'ebé mak dolorozu inklui injeksaun BPG bele kauza deteriorasaun rapidu no dekompensasaun kardiaka, no iha kazu balun bele kauza mate (16). Tamba razaun ida ne'e mak, pasiente ho hipertensaun pulmonariu grave ou insufisiensia kardiaka deskontroladu, ne'ebé mak presiza terapia medikal kontinua, rekomendadu atu simu antibiótiku oral ba profilaxia sekundaria iha Timor-Leste. Kazu sira ne'e tenke diskute individualmente ho espesialista iha pediatriku, kardiologia ou medisina interna.

Management considerations in cases with penicillin allergy / Konsiderasaun gestaun ba kazu ne'ebé alergia ba penisilina

Adverse outcomes from anaphylaxis are very rare in patients with RHD who are treated with BPG for secondary prophylaxis. The World Health Organization does not recommend routine skin testing prior to administration of BPG. If there is a history that is concerning for penicillin allergy, a skin prick test should be conducted by a trained provider before commencement of BPG or another penicillin-based antibiotic.

Rezultadu adversu husi anafilaxia ne'e oituan tebes ba pasiente ho RHD ne'ebé mak tratadu ho BPG ba profilaxia sekundaria. Organizasaun Mundial Saude la rekomenda teste kulit rutina antes administrasaun BGP. Karik iha historia ne'ebé mak relasiona ho alergia penisilina, entaun tenke halao teste skin prick/tuu iha kulit liu husi profesional ne'ebé mak treinadu antes atu komesa BPG ou antibiótiku seluk ne'ebé mak ho baze penisilina.

In patients with a confirmed, immediate and severe allergic reaction to penicillin, a non-beta-lactam antimicrobial (e.g. oral erythromycin) should be used instead of BPG.

Ba pasiente ne'ebé mak konfirmadu ba reaksaun imediata no alergika grave ba penisilina, entaun pasiente sira ne'e tenke uza antimikrobia beta-lactam (ezemplu, erythromycin oral) em vez de BPG.

Table 5: Recommended antibiotic regimens for secondary prevention
Tabela 5: Regimentu konaba antibiótiku ne'ebé mak rekomendadu ba prevensaun sekundaria

Antibiotic / Antibiótiku	Dose / Dose	Route / Via	Frequency / Frekuensia
First line / Linha primeiru			
Benzathine penicillin-G (BPG)	≥20kg: 900 mg (1,200,000 IU) <20kg: 450 mg (600,000 IU) ≥20kg: 900 mg (1.200.000 IU) <20kg: 450 mg (600.000 IU)	Deep IM injection Injeksaun IM profunda	21-28 days Loron 21-28
Second line options (if IM route is not possible or refused, or in cases with severe RHD with severe pulmonary hypertension or uncontrolled heart failure) Opsaun ba segunda linha (karik rute IM la posivel ou rejeitadu, ou iha kazu RHD grave ho hipertensaun pulmonariu grave ou insufisiensia kardiaka deskontroladu)			
Phenoxymethylpenicillin (Penicillin-V)	≥20 kg: 250mg BID ≥20 kg: 250mg BID	Oral	Twice daily Loron 1 dala rua
Amoxicillin	≥20 kg: 250 mg <20 kg: 500 mg ≥20 kg: 250 mg <20 kg: 500 mg	Oral	Twice daily OR Once daily Loron 1 dala 2 OU Loron 1 dala 1
If the patient has a documented severe penicillin allergy / Karik pasiente iha alergia grave ba penisilina, ne'ebé mak dokumentada			
Erythromycin	250 mg	Oral	Twice daily Loron 1 dala 2

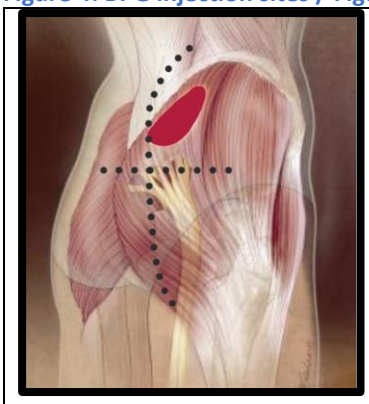
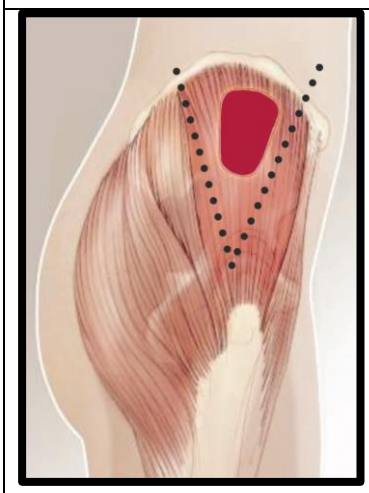
*IM = intramuscular / * IM = intramuskular

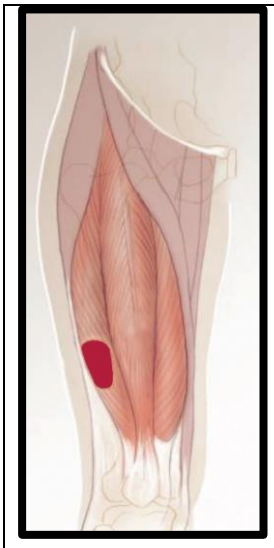
All people with ARF or RHD should continue secondary prophylaxis and have follow up according to the table below:
Ema hotu-hotu ne'ebé mak ho ARF ou RHD tenke kontinua profilaxia sekundaria no halo akompanhamentu konforme tuir tabela iha kraik:

Table 6: Recommended duration of secondary prophylaxis and follow up
Tabela 6: Durasaun rekomendadu ba profilaxia sekundaria no akompanhamentu

Diagnosis Diagnostiku	Duration of prophylaxis Durasaun ba profilaxia	Conditions for ceasing prophylaxis Kondisaun atu hapara profilaxia	Follow up after ceasing prophylaxis Akompanhamentu depois de para profilaxia
History of ARF (with no cardiac involvement) **Historia ba ARF (sem involvimentu kardiaka)**	Minimum 5 years after most recent episode of ARF, or until 21 years old (whichever is longer) Minimu tinan 5 depois de episodiu resente barak husi ARF, ou até idade 21 (ne'ebé mak kleur liu)	No ARF in the past 5 years, no progression of RHD on echo La iha ARF durante tinan 5 ikus liu, la iha RHD nia progresu iha echo	Repeat echo at 1 and 3 years Repete echo iha tinan 1 no 3
Mild RHD **RHD kaman**	Minimum 10 years after the most recent episode of ARF, or until 25 years old (whichever is longer) Minimu tinan 10 depois de episodiu resente barak husi ARF, ou até idade 25 (ne'ebé mak kleur liu)	No ARF in the past 10 years, no progression of RHD on echo. La iha ARF durante tinan 10 ikus liu, la iha RHD nia progresu iha echo	Repeat echo at 1, 3 and 5 years Repete echo iha tinan 1, 3 no 5
Moderate RHD **RHD moderadu**	Minimum 10 years after the most recent episode of ARF, or until 40 years old (whichever is longer) Minimu tinan 10 depois de episodiu resente barak husi ARF, ou até idade 35 (ne'ebé mak kleur liu)	No ARF in the past 10 years, no progression of RHD on echo La iha ARF durante tinan 10 ikus liu, la iha RHD nia progresu iha echo	Repeat echo annually for 5 years Repete echo anualmente durante tinan 5
Severe RHD **RHD grave**	Continue secondary prophylaxis life-long Kontinua profilaxia sekundaria durante moris tomak	No ARF in the past 10 years, no progression of RHD on echo and patient preference to cease prophylaxis La iha ARF durante tinan 10 ikus liu, la iha RHD nia progresu iha echo no pasiente nia preferensia hodi hapara profilaxia	Repeat echo annually for life Repete echo anualmente durante moris tomak

Figure 4: BPG injection sites / Figura 4: Fatin ba injeksaun BPG

 DORSOGLUTEAL SITE	1. Position the patient either lying face down or lying on the side or standing up and leaning against a wall for support (ask the patient to bend the knee on the injection side and to weight bear on the opposite leg). Pozisiona pasiente atu toba taka rabat ou latan sorin ou bele hamrik sadere ba iha parede (husu pasiente atu lulun ain ida husi parte fó injeksaun no husik ain sorin atu tahan isin nia todan). 2. The site for injection can be identified by either Fatin ba injeksaun bele identifika liu husi - Dividing the buttock into four quadrants. Select the upper outer quadrant, and devide this quadrant again into four quadrants. Give the the injection into upper outer quadran. OR Divide kidun sorin ba iha kuadrantes 4. Hili kuadrante husi parte leten exterior, no divide tan kuadrante ida ne'e ba 4. Fó injeksaun ba iha kuadrante parte leten exterior. OU - Draw an imaginary line between the greater trochanter and the posterior superior iliac crest. Administer the injection laterally and superior to this imaginary line Marka linha imaginaria ida entre trokanter maior no krista iliaka posterior superior. Administra injeksaun lateralmente no a'as liu linha imaginaria
 VENTROGLUTEAL SITE	1. Ask the patient to lie down on their side. Husu pasiente atu latan aan se isin sorin. 2. Place your right hand on the patient's left hip; or your left hand on the patient's right hip (depending which side you are giving the injection on). Tau ita bo'ot nia liman lo'os iha pasiente nia kanotak parte karuk; ou ita bo'ot nia liman karuk iha pasiente nia kanotak parte lo'os (depende ba parte ida ne'ebé mak ita atu administra injeksaun) a) Locate the greater trochanter of the femur and place the palm of your hand on it. Lokaliza trokante maior femur no koloka ita bo'ot nia liman iha nia leten b) Next make the "peace" sign- place your index finger towards the front of the body at the anterior superior iliac spine, and your middle finger as far along the iliac crest as you can reach. (The thumb should be pointed toward the front of the leg.) Tuir mai halo sinal "Peace" – koloka ita bo'ot nia liman-fuan indikador ba iha isin nia oin iha espinha iliaka anteru-superior, no liman-fuan klaran loke luan se'e ba iha krista iliaka. (liman-fuan bo'ot tenke aponta tu'un ba iha ain fuan) 3. The injection site is in the middle of the triangle between the middle and index fingers. Fatin injeksaun nian ne'e iha triangulu entre liman-fuan klaran no liman-fuan indikador nia klaran. 4. Mark the location and remove your fingers prior to inserting the needle. Marka uluk nia lokal no hasai ita bo'ot nia liman-fuan antes atu fó injeksaun.

 VASTUS LATERALIS SITE	1. Position the patient so they are lying down on their back OR sitting down. Infants can be held by their care-giver in a side-lying position Pozisiona pasiente atu toba latan ba sira nia kotuk OU tur. Ba infansia sira ita bele husik nia parentes kous sira ho pozisaun latan sorin 2. Place your hand on patient's thigh against greater trochanter, your other hand against the lateral femoral condyle near the knee. Koloka ita bo'ot nia liman iha pasiente nia kelen hasoru maior trokanter, ita bo'ot nia liman sorin kaer iha lateral femoral kondilu besik ba ain-tur. 3. Imagine a rectangle between the hands Imagina rektangulu entre ita bo'ot nia liman 4. The correct injection site is the middle third of this rectangle, in the anterolateral thigh. Fatin injeksaun ne'ebé los mak 3º mediu husi rektangulu refere, iha parte kelen anterolateral.

Notes on BPG administration / Nota konaba administrasaun BPG

Detailed guidelines about the preparation and administration of BPG can be found alongside the HNGV Injectable Medications Preparation (IMP) protocols. In facilities that do not have access to the IMP protocols, a standalone BPG guideline is available.

Matadalan detalle kona-ba preparasaun no fo BPG bele haree iha protokolu kona-ba Preparasaun Ai-moruk Injetavel (IMP) iha HNGV. Iha fasilidade sira ne'ebe mak la asesu ba protokolu IMP, iha matadalan BPG ne'ebe mak disponivel.

Injections are painful and children can become traumatised by repeated injections – taking steps to reduce injection site pain are important in maintaining secondary prophylaxis adherence. Pain relieving methods include:

Injeksaun ne'e sei sente moras makas no labarik kiik sira bele trauma atu repete fali injeksaun – toma etapa hodi redus moras iha fatin injeksaun, ne'e importante atu garante pasiente nia aderensia ba profilaxia sekundariu. Metodu hodi alivia/redus moras inklui:

- Apply an Ice pack to the injection site prior to administration and something warm after administration
  Koloka pakote jelu ida, ba iha fatin injeksaun, antes halo administrasaun no koloka buat ruma ne'ebé mak morna depois de administrasaun
- Apply pressure with your thumb to injection site 5-10 minutes before administration
  Hanehan/fó presaun kaman ba fatin injeksaun nian durante minutu 5-10, antes halo administrasaun
- Distraction – for example watching videos before and during the injection
  Distrasaun – por ezemplu husik sira hare video antes no durante injeksaun
- Rotate the injection site every month to avoid a build up of scar tissue
  Muda fatin injeksaun nian kada fulan hodi evita akumulasaun iha tesidu cicatricial/fitar
- Dilute BPG with lidocaine (Table 8)
  Halo nabe'en BPG ho lidocaine (Tabela 8)
- Paracetamol can be given before or after the injection

Bele administra Paracetamol antes ou depois de injeksaun

- Patients should be seen quickly to reduce anxiety and increase adherence
  Tenke halo verifikasaun lalais ba pasiente hodi redus ansiedade no melhora nia aderensia

Table 7: Instructions to dilute benzathine penicillin-G (BPG) in lidocaine
Tabela 7: Instruksaun hodi kahur benzathine penicillin-G (BPG) iha lidocaine

Use lidocaine (WITHOUT adrenaline) 2% in 2 mL / Uza lidocaine (sem adrenalina) 2% iha 2 mL	
BPG 900 mg (1,200,000 IU) vial	1. Dada Lidocaine 1 mL tama ba seringa 10 ml 2. Dada aquades 3mL ho seringa ne'ebé hanesan. Agora ita iha totál 4 mL iha seringa. 3. Sona daun liuhusi boraixa vial penicillin nia matan. Sona líkídu 4 mL husi seringa ba vial. Doko vial maka'as hodi asegura ai-moruk rahun sira kahur malu ho líkidu. 4. Dada montante penicillin ne'ebé ita presiza: - Atu fó 1,200,000 IU (900 mg) dada montante tomak (4 mL) no sona dala ida. - Atu fó 600,000 IU (450 mg) dada 2 mL no sona dala ida. Soe tiha nia restu sira. 5. Troka daun seringa nian, kontinua doko seringa no prepara sona ba pasiente.
BPG 1.8 g (2,400,000 IU) vial	1. Dada Lidocaine 2 mL tama ba seringa 10 mL. 2. Dada aquades 6 mL iha seringa ne'ebé hanesan. Agora totál iha seringa 8 mL 3. Sona daun liuhusi boraixa vial penicillin nia matan. Sona totál líkidu 8 mL husi seringa ba vial. Doko vial maka'as hodi asegura ai-moruk rahun sira kahur malu ho líkidu 4. Dada montante penicillin ne'ebé mak ita presiza: - Atu fó 1,200,000 IU (900 mg) dada 4 mL no sona dala ida. Depois soe tiha nia restu - Atu fó 600,000 IU (450 mg) dada 2 mL no sona dala ida. Depois soe tiha nia restu 5. Troka daun seringa nian, kontinua doko seringa no prepara hodi sona pasiente.

Encourage patients to be well hydrated prior to receiving their injection.
Enkoraja pasiente atu hidratadu ho diak antes simu sira nia injeksaun.

All patients with symptomatic cardiac failure, pulmonary hypertension or severe disease at risk of cardiac decompensation should lie down whilst receiving injections.
Pasiente hotu-hotu ne'ebé ho insufisiensia kardiaka sintomatiku, hipertensaun pulmonariu ou moras grave ne'ebé mak iha risku ba dekompensasaun kardiaka, pasiente sira ne'e tenke toba latan wainhira simu injeksaun.

Patients often have strong vasovagal reactions to BPG injection and patients with low blood pressure or who currently feel unwell should lie down to receive their injection.
Pasiente sira dalabarak iha reaksaun vasovagal makas ba injeksaun BPG no pasiente ho presaun ran menus ou sira ne'ebé mak atualmente sente la saudavel tenke toba latan wainhira simu sira nia injeksaun.

Fever and feeling unwell are not contraindications to receiving secondary prophylaxis and unwelll patients should still receive their injections as scheduled.
Isin manas no sente la saudavel ne'e laos kontraindikasaun hodi simu profilaxia sekundaria no pasiente ne'ebé mak sente la saudavel tenke nafatin simu sira nia injeksaun tuir horariu/agenda

All patients should be monitored for at least 10 minutes following their injection. Adrenaline and resuscitation equipment should be available at sites that administer BPG. Anaphylactic reacations to BPG are extremely rare.

Pasiente hotu-hotu tenke monitorizadu pelu menus durante minutu 10 depois de simu injeksaun. Ekipamentu adrenalina no resusitasaun nian, tenke disponivel iha fatin ne'ebé mak ita administra BPG. Reaksaun Anafilatiku ba BPG ne'e extremamente rara.

9. Implementation of rheumatic heart disease programs in health facilities and the Ministry of Health
Implementasaun programa moras rematizmu fuan iha fasilidade saude sira no Ministeriu de Saude

Recognition, diagnosis and management of ARF and RHD involves all levels of the health system, including hospitals, community health centres and health posts. Known RHD patients (mild, moderate and severe), should receive secondary prophylaxis at their local health centre (health post or community health centre). All new ARF and RHD cases should be referred for specialist input as outlined in figure 4. All known ARF and RHD patients who present with new onset or worsening cardiac failure, should be referred for specialist review.
Identifikasaun, diagnostika no gestaun ba ARF no RHD ne'e involve sistema saude nia nivel hotu-hotu, inklui hospital, sentru saude komunitaria no postu saude. Pasiente RHD ne'ebé mak notifikadu (kmaan, moderadu no grave), tenke simu profilaxia sekundaria iha sira nia sentru saúde lokal (postu saúde ou sentru saúde komunitaria). Kazu ARF no RHD ne'ebé foun tenke refere ba avaliasaun husi espesialista, konforme tuir saida mak esplika ona iha figura 4. Pasiente ne'ebé koñesidu ona ho ARF no RHD, ne'ebé mak aprezenta moras nia inisiu foun ou insufisiensia kardiaka mais pior, tenke refere ba avaliasaun husi espesialista.

Health posts and community health centres / Postu saude no sentru saude komunitaria

- Community education and addressing risk factors for ARF and RHD
  Edukasaun ba komunidade no foka konaba faktor risku ba ARF no RHD
- Recognition and treatment of GAS infections
  Rekonhesimentu no tratamentu ba infeksaun GAS
- Recognition and diagnosis of ARF and/or RHD. Clinical diagnosis of ARF and/or RHD can be made, referral for echocardiogram should be completed, and new diagnoses of RHD should be notified to Vijilansia. Treatment including secondary prophylaxis should be commenced.
  Rekonhesimentu no diagnostiku ba ARF no RHD. Bele halao diagnostiku klinikal ba ARF no RHD, tenke konklui mos enkaminhamentu ba ekokardiograma, no diagnostiku ne'ebé mak foun tenke notifika ba iha ekipa Vijilansia. Tratamentu inklui profilaxia sekundariu tenke komesa.
- If there is heart failure or arrhythmia, urgent referral and transfer for specialist review (paediatrics, internal medicine or cardiology) must occur
  Karik iha insufisiensia kardiaka ou arrhythmia, tenke halo enkaminhamentu no transferensia urgente ba espesialista hodi halo revizaun (Pediatriku, medisina interna ou kardiologia)
- Management of RHD, including administration of secondary prophylaxis
  Gestaun ba RHD, inklui administrasaun profilaxia sekundaria
- Continuing treatment for heart failure or other complications, after specialst review
  Kontinua tratamentu ba insufisiensia kardiaka ou komplikasaun sira seluk, depois de reviza husi espesialista
- Ensure adequate procurement of BPG, other medicines and consumables
  Asegura aprovizionamentu ne'ebé mak adekuadu ba BPG, medikamentu no mos konsumiveis sira seluk

Referral hospitals / Hospital referal

- Recognition and treatment of GAS infections
  Rekonhesimentu no tratamentu ba infeksaun GAS
- Recognition and diagnosis of ARF and/or RHD. Clinical diagnosis of ARF and/or RHD can be made, and new diagnoses of RHD should be notified to Vijilansia. Treatment including secondary prophylaxis should be commenced.
  Rekonhesimentu no diagnostiku ba ARF no RHD. Bele halo diagnostiku klinikal ba ARF no RHD, no diagnostiku ne'ebé mak foun tenke notifika ba iha ekipa Vijilansia. Tratamentu inklui profilaxia sekundariu tenke komesa kedas.
- Echocardiography may be performed in referral hospitals. If echocardiography is not available, suspected cases should be referred for an echocardiogram at a facility where this is available. If there is heart failure or arrhythmia, urgent referral and transfer for specialist review (paediatrics, internal medicine or cardiology) must occur.
  Iha hospital referal balun bele halao ekokardiografia. Karik ekokardiografia la disponivel, kazu suspeitadu tenke enkaminha hodi halo ekokardiograma iha fasilidade ne'ebé mak disponivel ba ekokardiografia. Karik iha insufisiensia kardiaka ou arrhythmia, tenke enkaminha no transfere urgente ba espesialista hodi halo revizaun (Pediatriku, medisina interna ou kardiologia)
- Management of RHD, including administration of secondary prophylaxis
  Gestaun ba RHD, inklui administrasaun profilaxia sekundaria
- Ensure adequate procurement of BPG, other medicines and consumables
  Asegura aprovizionamentu ne'ebé mak adekuadu ba BPG, medikamentu no mos konsumiveis sira seluk

Patient coordination and follow-up / Pasiente nia kordenasaun no akompanhamentu

A coordinated RHD register can be used to monitor and promote adherence to secondary prophylaxis and facilitate regular specialist review and echocardiography. Evidence shows that prevention of ARF and progression of RHD is most effective when at least 80% of prescribed antibiotics are given (17). For this reason, RHD registers based within health services or NGOs, should report quarterly on the following key service indicators:
Registru RHD ne'ebé mak kordenadu bele uza hodi monitoriza no promove aderensia ba profilaxia sekundaria no fasilita espesialista nia revizaun regular no ekokardiografia. Evidensia hatudu katak prevensaun ba ARF no RHD nia progresaun, sei efetivu liu kuandu ita administra ona antibiótiku ne'ebé mak preskrevidu pelu menus 80% (17). Tamba razaun ida ne'e, registru RHD ne'ebé mak bazeadu iha servisu saude ou NGO nian, tenke relata trimestralmente konaba indikador servisu prinsipal sira, hanesan tuir mai:

- Number of cases of new and existing ARF and RHD
  Numeru husi kazu ARF no RHD, foun no ezistente
    - Proportion male and female, and aged <5, 5-14, 15-24, 35-44, ≥45 years
      Proporsaun mane no feto, no idade husi tinan <5, 5-14, 15-24, 35-44, >45
- Adherence to BPG secondary prophylaxis in prior 12 months
  Aderensia ba profilaxia sekundaria BPG durante fulan 12 liu ba.
    - Proportion of patients who had ≥80% of due injections, and proportion of patients who had 50-79% of due injections, and proportion of patients who had <50% of due injections
      Proporsaun husi pasiente ne'ebé mak simu ona injeksaun ≥80%, no proporsaun husi pasiente ne'ebé mak simu ona injeksaun 50-79%, no proporsaun husi pasiente ne'ebé mak simu ona injeksaun <50%

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