



Rheumatic heart disease in the Pacific island nations

A pending motion from WHO might seek to eradicate rheumatic heart disease, which is still prevalent in Pacific island nations where progress is lagging. Chris McCall reports.



Maatu Siliu—Cure Kids New Zealand

A trained community health worker in Fiji discusses treatment with a young boy living with rheumatic heart disease

"This happened in the morning", Fijian Erini Tokarua recalled. "I got out of bed. He was crying. He couldn't get out of bed, and I thought it was him trying to be a baby." But her son Walter could not stand up. "He fell. I noticed his knees—the joints were all swollen. He said the bottom of his feet, it's like standing on nails." Tokarua diagnosed him with rheumatic fever herself a few hours later, after reading a poster in a hospital waiting room. She might have saved him from an early and avoidable death from rheumatic heart disease. Not every child in the western Pacific has had this chance. Across a string of island nations, many could be affected by the two related diseases—rheumatic fever and rheumatic heart disease.

Both diseases were once common in western Europe and North America, but are no longer a major health problem due to improvements to housing and basic education on hygiene. Available data indicate that the western Pacific has among the highest rates of rheumatic heart disease, fuelled by poor housing conditions, overcrowding, and little awareness. Experts estimate the prevalence around the Pacific at between 1% and 3%, depending on location.

The pathology of rheumatic heart disease is complex. It is a secondary result of rheumatic fever, a febrile illness caused by infection with group A streptococcus, particularly *Streptococcus pyogenes*, classically affecting the joints. The antibodies produced as a response to the infection are thought to slowly damage the heart valves, in particular the mitral valve, potentially leading to rheumatic heart disease. Regular injections of long-acting penicillin help to reduce the number of bacteria.

Rheumatic fever on its own is not that likely to be fatal, but rheumatic heart

disease, if untreated, could well be. "This is such an expensive disease to treat when it is severe", said Rosemary Wyber, a doctor with RheACH, an action group on rheumatic heart disease. "The downstream effects of these problems are quite catastrophic."

The initial symptoms of rheumatic fever can be deceptively mild and the

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simple poster on the hospital wall can be a life-saver, as Walter's mother found out. Doctors can miss the diagnosis, a mistake that can prove fatal years later. Now aged 10 years, Walter still has a heart murmur and needs penicillin injections every 3 weeks, but he has every chance of living a long life.

In Australia, rheumatic heart disease among Aboriginals has become a major concern in recent decades, as Indigenous rights became a hot political issue. In New Zealand's large cities, particularly Auckland, these problems are associated with overcrowding in Indigenous Maori families, and also large migrant population of Pacific Islanders. New Zealand has spent NZD\$67 million over the past 5 years to reduce its rate of rheumatic fever and rheumatic heart disease, with substantial success, Wyber said. Several Australian states and New Zealand now have centralised registers of affected patients.

In Fiji, Samoa, and some other Pacific countries, registers are now being developed, but follow-up presents challenges. Mainstays of the treatment programmes in Australia and New Zealand are echocardiogram and surgery to repair or replace heart valves. However, sonographers are few throughout the islands and if

trained, are very likely to move away in search of higher pay. Specialist cardiac surgery teams visit from Australia and New Zealand, but the expertise is not available in most Pacific island countries. Some patients have to be flown overseas for surgery; the cost of cardiac surgery in New Zealand is around NZD\$50 000 (GBP26 000). Bo Remenyi, of Menzies School of Health Research in Darwin, said "a very large percentage" of Samoa's health budget was at one stage spent on flying patients to New Zealand. Itinerancy among the patients also limits follow-up. "When you try to find them, they have gone back to the outer islands or the rural areas where they came from", said Joe Kado, a Fijian paediatrician.

Eradication of these diseases will require a centrally planned approach and a long-term focus on prevention, early detection, and follow-up, which are much more cost-effective than treating advanced disease, experts say. Fiji, Samoa, and Tonga are starting to organise follow-up in smaller communities, such as monitoring penicillin treatment and screening schoolchildren.

In May, WHO will vote on a motion to eradicate rheumatic fever and rheumatic heart disease and its potentially fatal complication. The islands of the western Pacific, where many still die young from these preventable illnesses, are likely to feature heavily in the debate.

"It is a real challenge to engage governments in any of these countries. Commitment has to come from their own health ministers", said Remenyi. "The Pacific has so many different health priorities...They very much focus on the agendas set by WHO."

Chris McCall