Reducing a striking health inequality

Jonathan Jarman

Nearly 40 years ago a tribe of Native Americans in Arizona decided to do something about the high levels of rheumatic fever and rheumatic heart disease in their communities.

Tribal members with no previous technical training worked in partnership with the local health provider, set up a streptococcal laboratory, and throat-swabbed children in schools. Teaching sessions using audiovisual techniques were held for groups of parents, teachers and the administrative staff of schools in the tribal area. Children with group A streptococcus were given either an injection of benzathine penicillin, or 10 days of oral penicillin or erythromycin.

Rates of acute rheumatic fever subsequently steadily declined over a 5-year period. But so did the incidence of group A streptococcal pharyngitis. A paper published in 1982 raised the question: was the decline in rheumatic fever in these Native American communities caused by the change in the “total streptococcal milieu”?1

Despite the success of most developed countries and some developing countries in greatly reducing rheumatic fever, the numbers of cases in New Zealand remain high and in fact have been increasing in recent years.2 There are also striking differences between the disease burden in different ethnic groups in New Zealand with Pacific peoples 37 times and Māori 20 times more likely to be admitted to hospital with first time acute rheumatic fever than people of European/Other ethnicity in 2010 (Personal Communication, J Mardani, Ministry of Health 2011).

Why are there such striking disparities in New Zealand for a disease which is preventable? Jones suggests that there are three main pathways that contribute to ethnic inequalities in health:

- Differential access to the determinants of health or exposures leading to differences in disease incidence,
- Differential access to health care, and
- Differences in the quality of care received.3

All of these pathways are likely to be drivers for the ethnic differences seen in rheumatic fever incidence in New Zealand. It is important to bear in mind that the main reason for rheumatic fever in New Zealand is untreated streptococcal throat infections.4

The article by Mardani et al in this issue of NZMJ5 has shown that targeted health education for high-risk families can measurably increase throat swabbing rates for children with sore throats. The approach used in Hawke's Bay should be replicated in all schools in communities where there are high levels of rheumatic fever in order to raise community awareness.
But will health education alone reduce rheumatic fever? Probably not, unless the other health inequality pathways are addressed at the same time. Making people aware of the importance of sore throats will make little difference to the large number of our children who are living in cold overcrowded homes. It will not improve their access to medical attention and will not ensure that they are correctly prescribed a course of 10 days of oral antibiotic which some will struggle to complete.

In 2010 there were 168 cases of acute rheumatic fever notified in New Zealand. One estimate is that the attack rate of acute rheumatic fever following an untreated group A streptococcal throat infection in school-aged children was 0.4%. This would mean there were at least 40,000 untreated streptococcal throat infections last year in New Zealand.

The answers for eradicating rheumatic fever are likely to be similar to the answers for eliminating the ethnic disparities seen in many other childhood diseases in New Zealand. The causal pathway with its differences in the determinants of health, lack of access to health services, and differences in health care received between ethnic groups is likely to be identical.

The first step is to make rheumatic fever a specific childhood health inequality indicator and make it a health target for district health boards (DHBs). External accountability for outcomes is an important strategy for improving the health of indigenous and vulnerable populations.

Leadership and funding is required from the centre. It is obvious that government departments, DHBs, hospitals, public health agencies, universities, non-governmental organisations (NGOs), and primary care providers all have a part to play, ideally in a coordinated approach.

Health education interventions such as those described by Mardani et al need to occur alongside interventions that can be shown to reduce streptococcal disease in communities. There needs to be a whole of health sector intolerance of incorrect or incomplete treatment of streptococcal pharyngitis and a focus on quality. But some of the most important traction for reducing health inequalities comes from the vulnerable communities themselves but only if they are involved as equal partners from the outset.

So far only one community in New Zealand has managed to eradicate acute rheumatic fever. The small community of Whangaroa in Northland worked in partnership with their public health unit and local general practice to carry out community education and school-based throat swabbing of children with sore throats. They used to have one of the highest notification rates of acute rheumatic fever in New Zealand. The last case from the area was in 2002—8 days after the intervention started.

Ehara taku toa i te toa takitahi, engari taku toa he toa takitini
(Our strength is not ours alone but that of our community)

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