



## Rheumatic heart disease in Indigenous children in northern Australia: differences in prevalence and the challenges of screening.

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Abstract: To compare regional differences in the prevalence of rheumatic heart disease (RHD) detected by echocardiographic screening in high-risk Indigenous Australian children, and to describe the logistical and other practical challenges of RHD screening.

Cross-sectional screening survey performed between September 2008 and November 2010.

Thirty-two remote communities in four regions of northern and central Australia.

3946 Aboriginal or Torres Strait Islander children aged 5-15 years.

Portable echocardiography was performed by cardiac sonographers. Echocardiograms were recorded and reported offsite by a pool of cardiologists.

RHD was diagnosed according to 2012 World Heart Federation criteria.

The prevalence of definite RHD differed between regions, from 4.7/1000 in Far North Queensland to 15.0/1000 in the Top End of the Northern Territory. The prevalence of definite RHD was greater in the Top End than in other regions (odds ratio, 2.3; 95% CI, 1.2-4.6, P = 0.01). Fifty-three per cent of detected cases of definite RHD were new cases; the prevalence of new cases of definite RHD was 4.6/1000 for the entire sample and 7.0/1000 in the Top End. Evaluation of socioeconomic data suggests that the Top End group was the most disadvantaged in our study population.

The prevalence of definite RHD in remote Indigenous Australian children is significant, with a substantial level of undetected disease. Important differences were noted between regions, with the Top End having the highest prevalence of definite RHD, perhaps explained by socioeconomic factors. Regional differences must be considered when evaluating the potential benefit of widespread echocardiographic screening in Australia.

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