Table 2: Prevalence[a] of rheumatic heart disease in the Top End of the Northern Territory and in Central Australia, 2002

| Age (years) | Top End | | Central Australia | |
	Indigenous Australians	Other Australians	Indigenous Australians	Other Australians
5–14	5.8	0.2	7.6	0.0
15–24	19.8	0.3	18.6	0.5
25–44	29.4	0.8	15.8	0.4
45+	18.6	0.8	14.9	1.4
Total	16.6	1.7	12.5	0.6

(a) Per 1,000 population in each region.

Sources: Top End Rheumatic Heart Disease Register and the Central Australian Rheumatic Heart Disease Register.

Trends in prevalence of rheumatic heart disease

Despite a stabilising of trends in the incidence of acute rheumatic fever in the Top End of the Northern Territory, the reported prevalence of chronic rheumatic heart disease continues to increase. In 2002, there were 17 cases per 1,000 Indigenous Australians, compared with nine per 1,000 in 1995. This increase is likely to be due to an improvement in reporting and case finding, and better awareness of the condition and its symptoms, rather than an actual rise in the number of cases.

It is too early to assess trends from the Central Australian register.

National data on acute rheumatic fever and rheumatic heart disease

Hospitalisation

Acute rheumatic fever is a serious disease and usually requires hospitalisation. Richmond & Harris (1998) reported hospitalisation rates in the Kimberley region of Western Australia as high as 80% for new cases of acute rheumatic fever and 73% for recurrences. In the Northern Territory, it is recommended that all cases of acute rheumatic fever be hospitalised for proper assessment.

Reflecting the incidence and prevalence of acute rheumatic fever and rheumatic heart disease obtained from the Top End of the Northern Territory and the Central Australian registers, the national hospitalisation rate for these diseases is much higher among Indigenous Australian males and females than among other Australians (Table 3). In 2001–02, the rate of hospitalisation for acute rheumatic fever and rheumatic heart disease among Indigenous Australian males was six times as high, and among Indigenous Australian females was eight times as high, as the rates among other Australians. These rate ratios were substantially higher than for other cardiovascular diseases.

In 2001–02, there were 341 hospitalisations in Australia for either acute rheumatic fever or rheumatic heart disease among those identified as Indigenous. This represents 15% of all hospitalisations for these diseases. The remaining 85% are likely to be for treatment of rheumatic heart disease among other Australians. These data cannot separate initial and subsequent hospitalisations for the same individual.

Rheumatic heart disease

Table 3: Hospitalisations among Indigenous patients for principal diagnosis of the major cardiovascular diseases[a], by sex, 2001–02

	Males			Females		
	Number	**Rate[b]**	**Ratio of the rate for Indigenous Australians compared with the rate for other Australians[c]**	**Number**	**Rate[b]**	**Ratio of the rate for Indigenous Australians compared with the rate for other Australians[c]**
Acute rheumatic fever and rheumatic heart disease	125	0.5	5.7	216	0.9	8.1
Coronary heart disease	1,568	15.9	1.4	1,243	11.6	2.2
Heart failure	516	5.9	2.4	507	5.7	3.1
Stroke	238	2.8	1.2	304	3.4	1.9
Peripheral vascular disease	90	1.3	0.7	50	0.6	0.7
Other diseases of the circulatory system	951	8.7	0.9	1,028	8.3	1.0
Total	**3,488**	**35.0**	**1.3**	**3,348**	**30.6**	**1.7**

(a) Data are for public and most private hospitals. Disease categories are based on ICD-10-AM codes I00–I02 for acute rheumatic fever; I05–I09 for rheumatic heart disease; I20–I25 for coronary heart disease; I50 for heart failure; I60–I69 and G45 for stroke; I70–I74 for peripheral vascular disease and I26–I28, I30–I49, I51–I52 and I75–I99 for other diseases of the circulatory system.

(b) Per 1,000 population. Hospitalisation rates have been directly age-standardised to the total Australian population as at 30 June 2001.

(c) The rate of hospitalisations for patients identified as Indigenous divided by the hospitalisation rate among other Australians.

Source: AIHW National Hospital Morbidity Database.

It is likely that these are underestimates of the rates of hospitalisation for circulatory diseases, including acute rheumatic fever and rheumatic heart disease, as identification of Indigenous status is incomplete in the national hospital morbidity database. Similarly, comparisons of hospitalisation rates between states and territories have not been presented because regional differences are affected by the variation in Indigenous identification among state and territory hospital data collections (AIHW 2003).

Surgical procedures

Acute rheumatic fever, particularly recurrences of the disease, can cause damage to the heart valves. A defective heart valve is one that fails to fully open or close. Historically, Aboriginal and Torres Strait Islander peoples in the Northern Territory with severe rheumatic heart disease have undergone heart valve replacement surgery with mechanical devices at a late stage in their illness. However, techniques of valve repair have been shown to improve health outcomes compared with valve replacement (Carapetis et al. 1997b).

Recent national data show that there were 106 heart valve procedures among Indigenous Australian patients in 2001–02 where acute rheumatic fever or rheumatic heart disease was the principal diagnosis during hospitalisation (Table 4). Mitral and aortic valve replacements comprised nearly 60% of these, and repairs comprised 23%. The situation among other Australians was similar, where mitral and aortic valve replacements comprised 67% and valve repairs comprised 15%. Consistent with the incidence and prevalence of these diseases, about two-thirds were performed on females.

Among patients undergoing these procedures, 45% of Indigenous Australian patients were less than 25 years old compared with just 4% of other Australians of a similar age.

As more than one procedure can be performed at each hospital visit, and the data do not indicate repeat hospitalisations for the same individual, it is difficult to estimate the proportion of individuals with acute rheumatic fever or rheumatic heart disease who have undergone heart valve procedures.

Table 4: Heart valve procedures for principal diagnosis of acute rheumatic fever or rheumatic heart disease(a), by Indigenous status, 2001–02

Heart valve procedure	Indigenous Australians		Other Australians	
	Number	Proportion of all heart valve procedures %	Number	Proportion of all heart valve procedures %
Replacement of mitral valve	42	39.6	435	35.4
Replacement of aortic valve	20	18.9	390	31.7
Repair of mitral or aortic valve	24	22.6	178	14.5
Other heart valve procedures	20	18.9	227	18.5
Total	**106**	**100**	**1,230**	**100**

(a) Acute rheumatic fever refers to ICD-10 codes I00–I02 and rheumatic heart disease to ICD-10 codes I05–I09.

Source: AIHW National Hospital Morbidity Database.

Deaths

Similar to differences in hospitalisation rates, Indigenous Australians are much more likely to die from acute rheumatic fever and rheumatic heart disease than other Australians. Although the numbers of deaths were higher among other Australian males and females than among Indigenous Australians over the period 2000–02, the death rates for Indigenous Australian males and females were 17 and 21 times the respective death rates in other Australians (Table 5).

Table 5: Standardised mortality ratios where acute rheumatic fever or rheumatic heart disease(a) was the underlying cause of death, by Indigenous status and by sex, 2000–02

	Indigenous Australians		Other Australians	
	Number of deaths	Standardised mortality ratio(b)	Number of deaths	Standardised mortality ratio(b)
Males	18	16.6	95	1.0
Females	37	21.1	164	1.0

(a) Acute rheumatic fever refers to ICD-10 codes I00–I02 and rheumatic heart disease to ICD-10 codes I05–I09.

(b) The standardised mortality ratio has been presented in this table, instead of death rates, due to the small number of deaths in the Indigenous Australian population. For further information see the Methods section.

Note: All deaths are based on year of registration for usual residents of Queensland, South Australia, Western Australia and the Northern Territory.

*Source:* AIHW National Mortality Database.

Rheumatic heart disease

The majority of deaths (about 90%) for acute rheumatic fever and rheumatic heart disease among other Australians occur in those aged 55 years and over, and reflect a time (pre-1960s) when acute rheumatic fever was more common among children in the general population.

Trends

Trends in death rates have been assessed for the whole population because until fairly recently identification of Indigenous status on death certificates has been poor.

Between 1980 and 2002, the national death rates for rheumatic heart disease fell on average by 3–4% per year for both males and females (Figure 2). Death rates are higher among females than males (1.7 per 100,000 in females compared with 1.0 per 100,000 in males in 2002) reflecting the higher incidence and prevalence of acute rheumatic fever and rheumatic heart disease in females.

Figure 2: Trends in death rates among the total population where the underlying cause of death was rheumatic heart disease, by sex, 1980–02
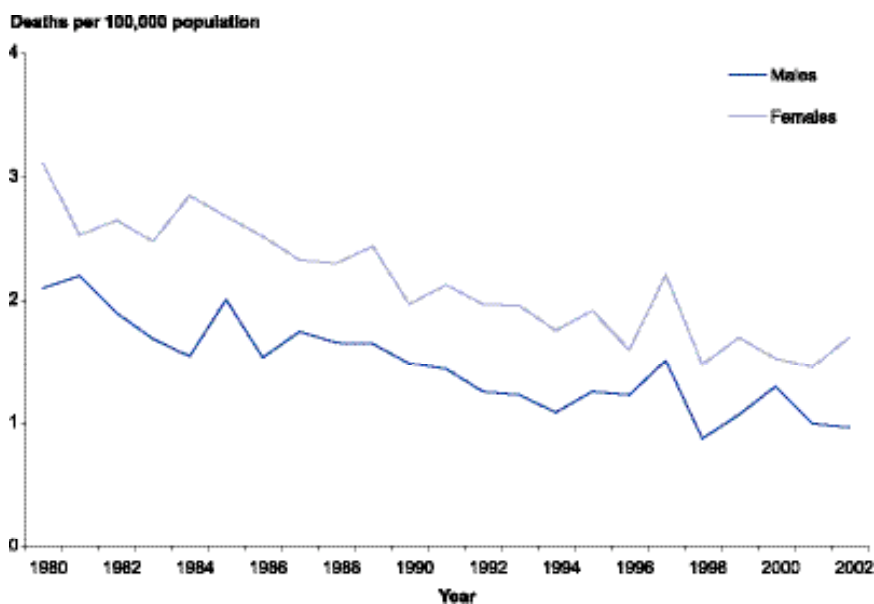
Notes

1. Rheumatic heart disease refers to ICD-9 codes 393–398 and ICD-10 codes I00–I09.

2. Death rates have been directly age-standardised to the total Australian population as at 30 June 2001.

3. All deaths are based on year of registration.

Source: AIHW National Mortality Database.