



**Queensland
Government**

Coronary heart disease mortality, hospital admission, and procedure rates for Indigenous Queenslanders

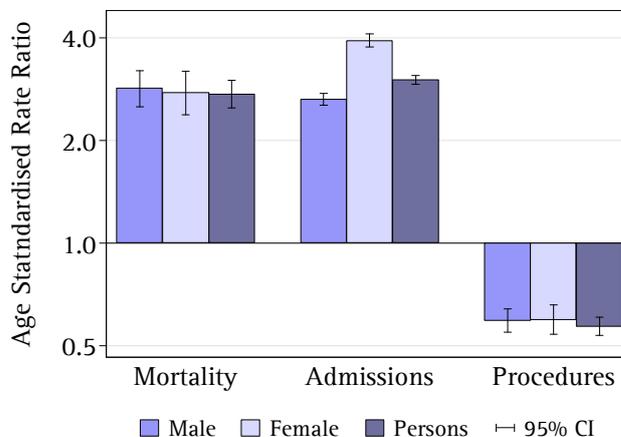
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Circulatory disease, including coronary heart disease (CHD), was the leading cause of death in both Queensland's Indigenous and non-Indigenous populations in 2007¹. In a recent analysis of CHD deaths, Mathur et al² reported that the mortality rate for Indigenous Australians was 1.4 times the non-Indigenous rate for fatalities without admission to or after discharge from hospital, and 2.3 times as great if the fatality was in-hospital. The study also showed that the hospital admission rate for major coronary events, defined as CHD deaths or non-fatal admissions for acute myocardial infarction, in the Australian Indigenous population, was approximately three times greater than the non-Indigenous population in 2002 and 2003². For an Indigenous patient hospitalised for CHD in 2002 or 2003, the chance of the patient undergoing an angiography, percutaneous coronary intervention (PCI), or coronary artery bypass graft (CABG) procedure was 40% less than for other patients².

The results of an investigation of the prevalence of coronary events and procedures using Queensland admitted patient and mortality data are reported here. Summaries of in-hospital mortality, admissions, and coronary artery procedures for Indigenous and non-Indigenous Queensland residents diagnosed with CHD are given in Figure 1. The age-standardised rates (ASR) for mortality and admissions indicate that both the mortality rate (2003-2007) and the admission rate (2004-2008) of Indigenous Queenslanders diagnosed with CHD were approximately three times the respective rates in the non-Indigenous Queensland population. The 95% CI error bars show the 95% confidence interval for each ASR estimate. They indicate that Indigenous mortality and hospital admission rates for CHD are significantly higher than for other Queensland residents, at the 95% confidence level.

Figure 1 also shows that Queensland patients who were identified as Indigenous and who were admitted to hospital with a principal diagnosis of CHD were 40% less likely to undergo a coronary artery procedure. The associated 95% CI error bars indicate that, at the 95% confidence level, there is a significantly lower rate of coronary artery procedures for Indigenous persons admitted for CHD than for non-Indigenous.

Figure 1. Age standardised rate ratios* of coronary events in Indigenous versus non-Indigenous populations in Queensland. Mortality, 2003-2007. Admissions and procedures, 2004-2008.



*Age standardised rate ratios greater than one indicate higher event rates in the Indigenous population.

One notable result is that, after adjusting for age differences between populations, the hospital admission rate for Indigenous females diagnosed with CHD was estimated to be almost four times the admission rate for their non-Indigenous counterparts, but approximately three times for Indigenous males. These ASRs of approximately four and three for respective Indigenous female and male hospital admissions for CHD persisted after removal of admissions with separation codes indicating that the patient was transferred to another hospital or died in hospital.

The age specific rate ratios in Table 1 demonstrate the age differences in CHD event rates for Indigenous and non-Indigenous Queensland residents. As each population ages the difference in mortality and hospital admission rates decreases until they are approximately the same in the Indigenous and non-Indigenous population aged 80 years or more. For coronary artery procedures, the age specific rate ratios show that, for all age groups, Indigenous patients admitted with a primary diagnosis of CHD were less likely than non-Indigenous to undergo a coronary artery procedure and that the difference in procedure rates of the two populations was higher as age increased.

Analysis of Queensland data has shown differences in the outcomes for Indigenous and non-Indigenous Queensland residents diagnosed with coronary heart disease. In essence, the recent data show that mortality and hospital admission rates for Indigenous Queenslanders with coronary heart disease were almost three times those for other Queensland residents. However, the coronary artery procedure rate for the Queensland Indigenous population was a little over half that of non-Indigenous Queenslanders. Further investigation is needed to ascertain the reasons for and actions required to minimise these health differentials.

Acknowledgment:

On behalf of the Health Statistics Centre, the authors would like to acknowledge the contribution of Bryan Kennedy, who was Manager, Indigenous Information Strategy Team. Bryan suggested that this investigation of coronary events and procedures be undertaken to identify any differences between Indigenous and non-Indigenous populations in Queensland. He was responsible for the conceptual design of the study. Sadly, Bryan passed away suddenly before the study was completed.

Table 1. Age specific rate ratios* of coronary events in Indigenous and non-Indigenous Queensland populations by age groups. Mortality, 2003-2007 Admissions and procedures, 2004-2008.

Age Group (Years)	Age Specific Rate Ratios		
	Mortality	Admission	Procedure
30-39	8.66	7.54	0.91
40-49	7.54	4.59	0.67
50-59	4.88	3.14	0.50
60-69	3.60	2.26	0.49
70-79	1.96	1.76	0.45
80+	0.87	1.15	0.28

*Age specific rate ratios greater than one indicate higher event rates for the Indigenous residents belonging to the specific age group

1. Closing the Gap Report: 2008/09 Indicators and Initiatives for Aboriginal and Torres Strait Islander Peoples: Department of Communities, State of Queensland 2010.
2. Mathur S, Moon L, Leigh S. Aboriginal and Torres Strait Islander people with coronary heart disease: further perspectives on health status and treatment. Cardiovascular series no. 25. Cat. no. CVD 33. Canberra: Australian Institute of Health and Welfare, 2006.