

## Mental disorders due to substance use and cardiovascular disease risk in Aboriginal adults

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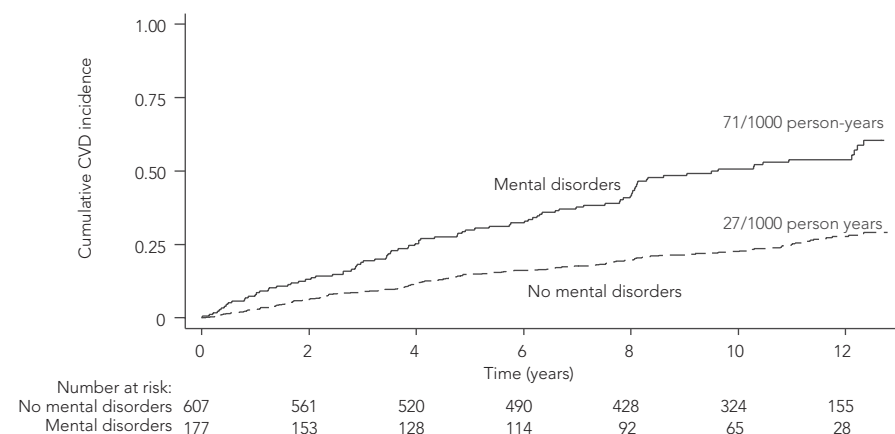
**TO THE EDITOR:** Cardiovascular disease (CVD) and mental disorders are the top two contributors to the total burden of disease in Indigenous Australians and make a substantial contribution to the excess morbidity and mortality in this group.<sup>1</sup> There is increasing evidence that mental disorders are risk factors for, or consequences of, CVD.<sup>2</sup> Awareness and better understanding of the intertwined relationship between mental disorders and CVD in Indigenous populations can provide opportunities for coordinated and seamless management of these conditions in health care systems.

We investigated the association between mental disorders due to substance use and CVD in a remote Indigenous community in the Northern Territory. A cohort of 897 Aboriginal adults aged 20–74 years (85% of the community's total adult population) was established through a population-based renal disease screening program in the community between 1992 and 1995.<sup>3</sup> We followed up 784 participants, who were free of CVD at baseline, to 31 May 2005, using hospital and death records. The study was approved by the Behavioural and Social Sciences Ethical Review Committee of the University of Queensland.

Substance use-related mental disorders were determined from participants' hospital records, using International Classification of Diseases, ninth revision (ICD-9) codes 192, 291 and 303–305; and 10th revision (ICD-10) codes F10–F19. Cases of CVD were identified by the first CVD event recorded in participants' hospital and death records, using ICD-9 codes 390–459 and ICD-10 codes I00–I99. We used the Kaplan–Meier method to calculate cumulative CVD incidence rates for those with and without substance use-related mental disorders. CVD hazard ratios were estimated using Cox proportional hazards models.

During a median follow-up period of 10 years, 177 of the 784 participants (23%) had clinically diagnosed mental disorders due to substance use (mainly alcohol: 140 participants), and 243 (31%) developed CVD. Incidence rates of CVD were 71

### Kaplan–Meier estimates of cardiovascular disease (CVD) incidence among Aboriginal adults with and without substance use-related mental disorders



(95% CI, 58–87) and 27 (95% CI, 23–32) per 1000 person-years for those with and without substance use-related mental disorders, respectively (Box). Participants with substance use-related mental disorders were 2.6 (95% CI, 2.0–3.3) times more likely to develop CVD than those without. After adjusting for CVD risk factors measured at baseline (age, sex, body mass index, smoking status, alcohol use, blood pressure, serum cholesterol level, diabetes and albuminuria status), the association remained statistically significant, with an adjusted hazard ratio of 2.6 (95% CI, 1.9–3.5).

Our findings confirm an association between substance use-related mental disorders and CVD in an Indigenous population, after adjusting for potential confounders.

Traditional health care systems tend to separate services and treatment for mental disorders from those for physical health problems such as CVD.<sup>4</sup> This separation is even more evident in remote Indigenous settings, where primary health care practitioners are already overwhelmed in providing general medical care to community members, with mental health services being delivered infrequently by visiting psychiatrists.<sup>5</sup> The observed intertwined relationship between these two common conditions calls for integration of mental health services into routine primary health care, and enhanced collaboration between primary care practitioners, cardiologists and psychiatrists, in an effort to curb the huge burden imposed by these diseases.

The emerging Aboriginal mental health worker program in the NT has the potential

to be an effective service model to bridge the gap between mental health care and day-to-day primary health care.<sup>5</sup> Dedicated financial resources and ongoing support for recruitment, training and retention of Aboriginal mental health workers will be required for sustained integration of mental health care with primary care in Indigenous communities.

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