

## Measuring the burden of mental illness and substance use and the level and impact of health care response in patients with spinal trauma: a record linkage study.

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### Background with rationale

Traumatic spinal injuries (TSI) include column fractures, spinal cord injury, or both. They are among the most severe injuries with potential long-term physical, psychological, and social consequences. Primary causes of TSIs are falls and motor vehicle crashes, however, mental illness and substance use are known to significantly increase all injury risk. Injury is also known to increase risks of mental deterioration and physical complications including self-harm and self-neglect.

### Main aim

We aimed to identify comorbid mental illness and/or substance use at incident TSI, quantifying associated costs and health service management of these inequities.

### Methods

NSW record-linkage administrative data analyses (2013-2016) will determine accurate prevalence of mental illness and/or substance use disorder among all patients who sustained acute TSI during the study period. Using recurrent event analyses, we will estimate the contributions of mental illness and/or substance use disorder on the impact on hospital acquired complications (HAC), length of stay and costs; assessing records for social work and/or psychologist consultation.

### Results

13,489 individuals were hospitalised with acute TSI; 21% had either mental health and/or substance use diagnoses; 8.7% had both. These patients were more likely to have experienced falls or intentional self-harm, be male and have multiple comorbidity. Acute care stay and costs were on average twice that of patients with TSI without mental health and/or substance use diagnoses; additionally they were more than twice

as likely to experience HACs. Only 56% of TSI patients with these comorbid conditions in the context of TSI, had documented social work or psychologist consultation.

### Conclusion

Patients with mental illness and/or substance use disorder, experience significant health disparities that require concerted health system attention that should begin early in acute care.

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