

within four hours) who completed alcohol treatment. A comparison group ($n = 806$) of those with one or two violations who did not attend alcohol treatment was created by matching to the treatment group on demographic and risk factors.

Results The program keys most correlated with higher interlock rates were having a requirement to instal interlocks ($r = 0.63$), and monitoring to ensure interlocks are installed and used ($r = 0.56$). Incorporating alcohol treatment into an interlock program was effective with the treatment group experiencing 32% lower recidivism following interlock removal compared with the non-treatment group.

Conclusions Strengthening program keys and incorporating treatment into interlock programs increases use of interlocks and reduces AID re-arrest.

301 MARIJUANA USE AND EXCESS RISK OF INJURY EVENTS: FINDINGS FROM A LARGE PROSPECTIVE COHORT STUDY

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Background Marijuana is one of most widely used illicit substances globally. The risks of injury experienced by marijuana users relative to non-users have been poorly quantified in prospective studies. We investigated the associations between marijuana use and fatal or hospitalised injury in the New Zealand Blood Donors' Health Study.

Methods At recruitment to this prospective cohort study in 1998–1999, the 22,389 participants completed a self-report survey on demographic, personal and lifestyle questions including the frequency of marijuana use. Using unique identifiers, these data were record-linked to national mortality and hospital discharge databases to ascertain participants' injury-related admissions or deaths from recruitment to 31 December 2014. The associations between marijuana use and injury were investigated using Cox proportional hazards analyses, adjusting for socio-demographic and confounding factors.

Results At baseline, 15% of participants of the cohort reported marijuana use in the preceding 12 months. During a median follow-up period of 16.8 years, 3,693 incident injury cases (3,651 non-fatal and 63 fatal) occurred, the majority of which were falls (1204 incident cases) and motor vehicle crashes (779 incident cases). Compared to non-users, marijuana users were more likely to experience injuries related to self-harm (adjusted HR 2.00, 95% CI: 1.39–2.89), assault (adjusted HR 1.83, 95% CI: 1.27–2.66), motor vehicle crashes (adjusted HR 1.35, 95% CI: 1.09–1.69), or unintended cutting or piercing trauma (adjusted HR 1.76, 95% CI: 1.31–2.35). Risk estimates were greater with more frequent use of marijuana.

Conclusions Relative to non-users, participants who used marijuana were at increased risk of most major types of injuries, with an apparent dose-response effect. The pathways and correlates of harm underlying the increased risks of injury (particularly self-harm and assault) associated with marijuana use, require public health attention.

302 ALCOHOL OUTLET DENSITY AND HOSPITAL ADMISSIONS FOR ALCOHOL-RELATED INJURY: AN ELECTRONIC RECORD-LINKED COHORT STUDY

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Background Little is known on the longitudinal relationship between alcohol availability and the risk of admission to hospital for an alcohol-related injury. We aimed to quantify this relationship using observational record-linked data in a total adult population cohort in Wales, UK; population 2.5 million aged 16 years and over.

Methods Data sources included licensed outlets held by the 22 local authorities in Wales under The Licensing Act 2003 for each quarter between 2006 and 2011. Alcohol outlet density was estimated for Census geography small areas ($n = 1896$ divided into quintiles of equal counts) based on the mean network walking distances between each household and alcohol outlet within a 10 minute walk. Hospital admissions 2006–2011 from the Patient Episode Database for Wales (PEDW) for wholly alcohol-related conditions were anonymously record-linked to the Welsh Demographic Service age-sex register within the Secure Anonymised Information Linkage Databank. Injury admissions were defined by ICD-10 codes S00-99 and T00-19 linked to an alcohol code. Longitudinal statistical analysis used Cox regression models of hospital admissions as a function of outlet density at baseline, adjusting for confounding variables of age, sex and small area deprivation and settlement type, and censoring for death, migration and other cause admission.

Results Alcohol outlet density at baseline was significantly associated with emergency hospital admission; the hazard ratio (HR) of an alcohol-related admission ($n = 25,722$) for living in the highest compared with the lowest quintile of outlet density was 1.17 (95% CI: 1.11, 1.23). The risk was higher for alcohol-related admissions with injury ($n = 4,308$; HR 1.27, 95% CI: 1.13, 1.42).

Conclusions Higher alcohol outlet availability was associated with more emergency hospital admissions for alcohol-related injury. This suggests that restricting the density of alcohol outlets within walking distance from home may improve population health.

303 DOES INCREASING ALCOHOL TAXES ALWAYS REDUCE ALCOHOL-RELATED CRASHES: MARYLAND SALES TAX INCREASE?

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Background The sales tax on all alcoholic drink was raised in Maryland from 6 to 9% on July 1, 2011. This study evaluates the effects of the alcohol sales tax increase on the rate of alcohol-involved drivers involved in fatal crashes.