

## Three years of minimum unit pricing in the Northern Territory, what does the evidence say?

In Australia, alcohol consumption and related harms are highest in the Northern Territory (NT) [1]. The region has a high proportion of Indigenous residents compared to the national average, 80% of whom live in remote areas with high levels of socioeconomic disadvantage [2]. Alcohol-attributable death rates are 10 times the national death rate for Indigenous Territorians, and twice the national average for other Territorians [1]. Many policies have been implemented to reduce this level of harm, including a 1995 excise tax on alcohol, which was ruled unconstitutional by the Federal High Court in 1997 and removed in 2002 [3]. In October 2018 the NT government introduced a minimum unit price (MUP) of alcohol, which required alcohol retailers to sell liquor at or above AU\$1.30 per standard drink (10 g of pure alcohol). This price point was chosen specifically to target cask wine consumption [4], which had also been specifically targeted by an increase in the excise tax in 1995 [3]. In this way the MUP acts as an alternative for taxation, as has also been seen in Scotland [5]. Cask wine has high alcohol content and is associated with many harms [6], it can also be sold cheaper than other alcohol products due to differences in taxation [7]. A range of other policies were also introduced alongside the MUP from 2017 to 2019, including purchasing bans and new policing practices [3, 8], which have made it difficult to determine the unique impact of the MUP on harm. In recent years, similar policies have been implemented in Scotland, Ireland and Wales [9]. A 3-year evaluation of the NT MUP was released in October 2022, conducted by the consulting company Frontier Economics in partnership with the local consultancy service Yarning [10]. The report contained 12 key findings and 7 recommendations, the overall conclusion from these was that the MUP had reduced cask wine consumption and should be kept at its current level [10]. However, not every conclusion of the report was supported by the evidence it contained. Knowing which claims made about the NT MUP have been supported by the evidence of the last 3 years is important for researchers, policy makers and public discussion about the policies' future.

Prior to the publication of the 3-year evaluation, three peer-reviewed publications and two reports were published examining the impacts of the MUP. The first of these was a report published by the Foundation for Alcohol Research and Education [11]. This report examined the change in alcohol-related assaults, domestic violence and emergency department presentations in the 12 months prior to the MUP and the 12 months after the MUP, across the NT's major population centres. Despite not using inferential statistics, the report concluded that the MUP resulted in a substantial decline in alcohol-related violence across the NT [11]. The second publication was the 1-year evaluation prepared for the NT government by Deakin University [12]. This report used mixed methods cross-section data from four key sources to evaluate the impact of the MUP, these included: administrative data (hospital, emergency department, ambulance, sobering up shelters, treatment centres, road traffic crashes, child protection, liquor licencing, school attendance, tourism, alcohol wholesaler), a population telephone survey, key informant interviews and pricing monitoring of two large online retailers. A fifth key data source was attempted, monitoring sales of liquor alternatives (e.g., mouthwash), however, the retail outlets either refused or did not respond to investigators' data requests. This study also separated its findings based on major population centres within the NT. It noted that due to the close proximity of the MUP and another intervention aimed at reducing harmful alcohol consumption (Police Auxiliary Liquor Inspectors) in all areas outside of Darwin and Palmerston that the Darwin/Palmerston area would best reflect the unique impact of the MUP [12]. In this region the report found that cask wine and cider wholesale supply per capita declined, there were significant decreases in the rate of alcohol-related assault offences, protective custody episodes and alcohol-related ambulance attendances. There was also an indication of some decline in the rate of alcohol-related hospital admissions, a significant decline in the rate of assault-related hospital admissions, and a decline in alcohol and drug treatment episodes in government and non-government organisations. Across the Territory there

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had been no significant changes in the number of liquor licences, or the number of tourists and amount they spent in the NT [12].

The first peer reviewed publication was a 12-month pre and post MUP examination of alcohol-related intensive care unit admissions to a hospital in Alice Springs [13]. Due to the introduction of Police Auxiliary Liquor Inspectors in Alice Springs the unique impact of the MUP could not be determined, rather the study made conclusions about the implementation of the range of policies introduced during this period. The study found a reduction in intensive care unit admissions associated with alcohol misuse following the implementation of the policies [13]. This was followed by a study examining wholesale alcohol supply trends, conducted by the researchers that produced the 1-year MUP evaluation [14]. This article took a more in depth look at the impact of the MUP on wholesale supply trends than the initial report and concluded that the MUP significantly and substantially reduced cask and total wine consumption. This article also interrogated a significant gradual rise in spirits sales within the Darwin/Palmerston region that was present in the results. Post hoc analyses revealed this trend had begun two quarters prior to the introduction of the MUP [14]. The last peer reviewed study published ahead of the 3-year evaluation was a wastewater analysis examining how trends in the amount of ethyl sulphate in wastewater entering treatment plants changed in response to the MUP per-capita [15]. The study found a substantial immediate decline of 38.75% in per-capita alcohol consumption following the implementation of the MUP across the NT, this was followed by a gradual increase in alcohol consumption that approached but did not reach pre MUP levels [15].

The 3-year evaluation of the MUP used a wide variety of datasets to assess consumption trends, alcohol-related harm and other impacts on the NT. Unlike any of the prior publications, the 3-year evaluation contained the period during the COVID-19 pandemic, which had a substantial impact on the trends being examined. Australia first entered lockdown near the end of March 2020, meaning that the 3-year evaluation was only able to reliably assess an additional 6 months beyond the 1-year evaluation. The 3- and 1-year evaluations used many of the same data sources and had similar methodologies. The 3-year evaluation did not use hospital data outside of the emergency departments, ambulance attendance data, or data from treatment centres and did not include a population survey. The 3-year evaluation uniquely examined retail pricing data, the annual gross regional product and gross value added across NT regions, and the monthly unemployment rates. Where data was shared the key findings of the 3-year evaluation closely

mirrored the 1-year evaluation, there was a clear drop in cask wine consumption, there was evidence of a reduction in alcohol-related harms (although direct causation was difficult to determine), there was no evidence that the MUP had a negative impact on the liquor industry or tourism, and the MUP was clearly a cost-effective policy. In terms of unique findings, the 3-year evaluation was able to determine that the MUP did not influence the use of alternative substances to liquor (e.g., mouthwash), the MUP did not influence unemployment, and there was a shift in retail prices between AU\$1.30 and AU\$1.50 following the MUP. While the broad findings of the evaluation mirror earlier work, there were findings, recommendations and conclusions that went beyond the evidence presented.

The report argued that drinkers switched from cheap alcohol to spirits based on increasing spirits sales, a switch which was seen among some drinkers in Scotland [16]. However, this increase has been shown to predate the MUP in prior research [14], which the report acknowledges. To date there is no direct evidence that the individuals that consumed less cask wine are the same individuals consuming more spirits. Substitution usually involves shifting to the next cheapest liquor product [17], which is beer by a distinct margin compared to other liquor types in the NT [18]. The report also argued that the MUP operates based on the assumption that harmful drinkers consume cheap alcohol, and that the price shift above this point demonstrated that moderate drinkers were also affected by the policy. This assumes that moderate drinkers were consuming alcohol below AU\$1.50 per standard drink, which the report has no evidence for. There is currently no publicly available evidence which demonstrates the scope to which moderate drinkers were affected by the MUP.

The NT MUP was considered a cost-effective approach that targeted and substantially reduced cask wine consumption, with minimum cost to government, and likely resulting in returns through reduced harms. While there have been some indicators that harms reduced following the MUP, more peer-reviewed evidence is required. Particularly as only police identified alcohol-related assaults have been examined, which may give a misleading understanding of actual alcohol-related violence trends [19–21]. There are many things we are yet to determine about the NT MUP, including whether it has impacted on moderate drinkers in a meaningful way, or whether there are detrimental effects to heavy drinkers, as seen in specific subsets of drinkers in Scotland [16]. The COVID-19 pandemic clearly limited researchers' ability to determine the long-term impacts of the MUP. However, in 2023 the MUP is set to increase based on changes in the consumer price index, which will give researchers a second chance to examine the impact of an elevated MUP.

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## CONFLICT OF INTEREST STATEMENT

None to declare.

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