



Alcohol-related acute medical reviews in an acute hospital before and immediately after the introduction of minimum unit pricing

Matthew McKenna-Barry¹ · Paud O'Regan¹

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Abstract

Background Minimum unit pricing (MUP) is one aspect of the Public Health (Alcohol) Act 2018 to limit the detrimental health impacts of alcohol use. Alcohol withdrawal syndrome (AWS) can occur within hours to days after alcohol cessation. This audit assesses two periods to see if the introduction of MUP had a significant impact on acute alcohol-related medical reviews mediated through a change in the incidence of AWS.

Methods The medical inpatient handover documents all acute medical reviews of patients in Tipperary University Hospital in the preceding 24 h. Documents were retrospectively reviewed for two 28-day time periods 5th January to 1st February 2021 and 2022. Patients were assessed for presentations related to alcohol.

Results 518 patients were reviewed by the acute medical service between 5th January and 1st February 2021. 28 patients presented with alcohol-related medical complaints. 637 patients were reviewed by the acute medical service between 5th January and 1st February 2022. 24 patients presented with alcohol-related medical complaints. The proportion of patients presenting with alcohol-related medical conditions, 5.41% for the first assessment period and 3.77% for the second period, was compared using MedCalc software. This demonstrated a difference of 1.64% (95% confidence interval –0.78 to 4.24%, $P=0.18$).

Conclusion At this institution, the introduction of MUP did not result in increased presentations with alcohol-related medical complaints. It is unlikely that it leads to an increase in the incidence of AWS.

Keywords Alcohol · Medical · Pricing · Unit

Background

Alcohol use is a major cause of mortality and morbidity in Ireland. It has been implicated as the cause for 4.4% of deaths in 2010 [1] and 3.2% of hospital admissions in 2015 [2]. Minimum unit pricing (MUP) is one aspect of the Public Health (Alcohol) Act 2018 to limit the detrimental health impacts of alcohol use [3]. Other features of this act included limiting advertising for alcoholic products, product labelling, and environmental modifications to alcohol retailers [3]. MUP was introduced in Ireland on 4th January 2022 with a minimum price of 10 c per gram of ethanol. Similar legislation has been enacted in Scotland which has resulted in a reduction in alcohol purchasing [4]. One adverse effects

of alcohol use is alcohol withdrawal syndrome (AWS) which can occur within hours to days of alcohol cessation [5]. As such it is plausible that a significant negative impact on the incidence of AWS would be observable in a short period following the introduction of MUP.

Aims

This audit assesses two periods to see if this plausible unintended consequence of the introduction of MUP has a significant impact on acute alcohol-related medical reviews.

Methods

The medical inpatient handover documents all acute medical reviews of patients in Tipperary University Hospital in the preceding 24 hours. This document was retrospectively reviewed for two 28-day time periods 5th January to 1st February inclusive

✉ Matthew McKenna-Barry
mmckennabarry@gmail.com

¹ Department of Gastroenterology, Tipperary University Hospital, Tipperary, Ireland

2021 and 2022 respectively. The standard chosen for this audit was a 2018 study by McNicholl et al. that found that 5.9% of Irish emergency department presentations were alcohol related [6].

Acute medical reviews are derived from referrals from primary care, emergency medicine, surgery, and psychiatry specialities resulting in admission, discharge, or onward referral.

The demographic data of all patients were assessed. Each review was assessed for duration of inpatient admission following review. Patients were considered to have an alcohol-related medical complaint if alcohol use or excess was documented as part of presenting complaint or past medical history on the handover document. The length of stay for each patient was derived from the electronic medical record. The age and length of stay were plotted as a scatter graph.

Statistical analysis was performed using Medcalc [7] software. The proportion of patients presenting with alcohol related medical conditions was calculated as a percentage of total patients who were reviewed by the acute medical service for each assessment period. The exact Clopper-Pearson 95% confidence intervals were calculated for each proportion for each assessment period [8]. These proportions were then compared using “ $N-1$ ” chi-squared test [9].

Results

A total of 518 patients were reviewed by the acute medical service between 5th January and 1st February 2021. Of these, 28 (5.41%, 95% confidence interval 3.63–7.72) patients presented with alcohol related medical complaints Fig. 1. This was lower than the standard derived from McNicholl et al. [6]. The median age was 51 years, and 9 (32.14%) were female. The number of bed days used by this cohort for this period was 231 with a median length of stay of 2 days. The mean length of stay for this period for all patients was 8.25 days with a standard deviation of 18.29 days.

A total of 637 patients were reviewed by the acute medical service between 5th January and 1st February 2022. 24

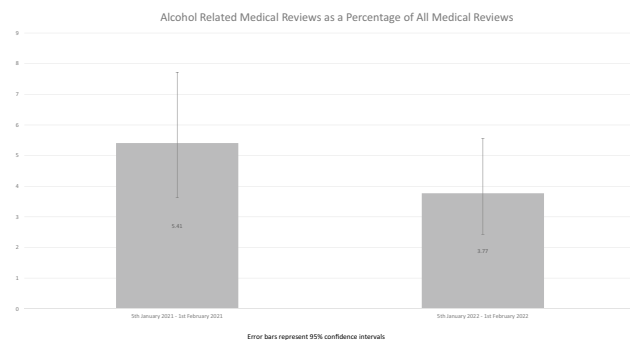


Fig. 1 Age and length of stay for all patients with alcohol-related medical complaints

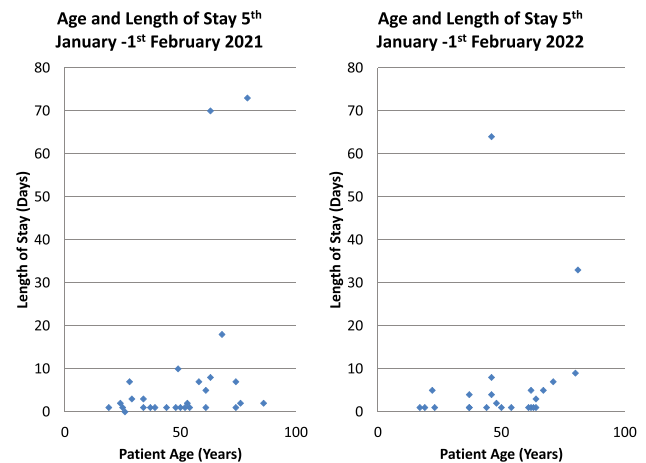


Fig. 2 Alcohol-related medical reviews as a percentage of all medical reviews

(3.77%, 95% confidence interval 2.43–5.56) patients presented with alcohol-related medical complaints Fig. 1. This was lower than the standard derived from McNicholl et al. [6]. The median age was 49 years, and 9 (37.5%) were female. The number of bed days used by this cohort for this period was 161, with a median length of stay of 1.5 days. The mean length of stay for this period for all patients was 6.71 days with a standard deviation of 13.88 days.

There was a 22.98% increase in the total number of patients reviewed by the acute medical service between the first and second assessment periods. There was a 16% decrease in the total number of patients presenting with alcohol-related medical presentations between the first and second assessment periods. The proportion of patients presenting with alcohol-related medical conditions Fig 2, 5.41% for the first assessment period and 3.77% for the second period, was compared using MedCalc software [7]. This demonstrated a difference of 1.64% (95% confidence interval –0.78 to 4.24%, $P=0.18$) [8].

Conclusion

This audit demonstrates the ongoing harm caused by alcohol-related medical conditions which are common and the importance of instituting public health measures to limit the detrimental effects of alcohol-related harms.

The demographic data demonstrate that alcohol-related harm affects adults of all ages. Although the median duration of stay for both assessment periods was low, a small minority of patients had hospital admissions lasting greater than 30 days.

There was no increase in patients presenting with alcohol-related medical complaints in the immediate period following the introduction of MUP at our institution. This data

provides reassurance that the introduction of MUP does not appear to be associated with an immediate increase in alcohol-related medical complaints, including AWS, necessitating medical review. It is important to note that this does not encompass the true spectrum of alcohol-related harm as it is limited to those requiring the input of general medical specialities and does not assess those managed through primary care, psychiatric, and surgical specialities.

The authors attempted to reduce the impact of the seasonality of alcohol use [10] and its associated harms by comparing two corresponding 28-day periods. There was variability across these two periods, most obviously in the incidence and relative severity of Covid-19 resulting in a curtailment of the provision of elective healthcare and a reduction in public utilisation of healthcare. The first time period assessed coincided with the peak in hospitalisation of patients with Covid-19 at 1954 nationally per day compared with a peak of 1022 nationally per day during the second assessment period [11]. This severity was reflected in a peak of deaths attributed to Covid-19 of 59.86 nationally per day during the first assessment period compared to 13.4 nationally per day during the second assessment period [12]. It would not be useful to attempt to control for the impact of the pandemic on alcohol-related harms due to the interaction between these factors. In the USA, alcohol-related deaths increased by 22.5% during the pandemic [13]. This study is unable to make a similar comparison for an Irish context as both studied time periods occurred during the pandemic. However, the relationship between alcohol use and Covid-19 reinforce the need for effective public health interventions to limit alcohol-related harm.

Declarations

Ethics approval Not required as study undertaken as audit.

Conflict of interest The authors declare no competing interests.

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