CHIEF SCIENTIST OFFICE

CODE: HIPS/18/57

RESEARCH PROJECT BRIEFING

THE IMPACT OF ALCOHOL ON AMBULANCE CALL-OUTS AND THE AMBULANCE SERVICE IN SCOTLAND (IMPAACT)

BACKGROUND & AIMS

No previous study has examined whether increasing the price of cheap alcohol affects ambulance call-outs, nor used qualitative methods to explore the impact of alcohol on a public ambulance service. We therefore aimed:

- to examine the impact of alcohol on the Scottish Ambulance Service (SAS) in terms of numbers of call-outs and ambulance clinician experiences, and
- to evaluate the impact of minimum unit pricing for alcohol (MUP, introduced on 1st May 2018) on alcohol-related ambulance call-outs in Scotland.

KEY FINDINGS

- Over 16% of ambulance call-outs were identified as alcohol-related in 2019 including over 230 call-outs per day on average, or 86,780 in total for the year; at weekend night times (6pm-6am) the figure rose to over one in four call-outs (28.2%).
- As well as call-outs to people who have been drinking at parties, pubs or other entertainment venues, a large number of the call-outs are to people with chronic alcohol problems including alcohol dependence often also with mental health problems.
- Alcohol-related call-outs can be time-consuming and challenging to respond to, for various reasons, including a lack of response options felt suitable for patient needs and little/no specific training on alcohol problems. Drunk bystanders, loud music, and physical and sexual harassment were commonly reported in call-outs to night-time entertainment venues/urban centres. All such calls divert ambulances from responding to calls unrelated to alcohol and clinicians felt that they affected staff and service morale.
- The introduction of MUP on 1st May 2018 did not significantly affect numbers of identifiable alcohol-related ambulance call-outs in Scotland in our analyses. Whilst other evidence has shown that MUP modestly reduced population consumption, its impact may not have been large enough in the specific sub-groups of drinkers most likely to call an ambulance for a reason related to alcohol, for a significant reduction in call-outs to be found.

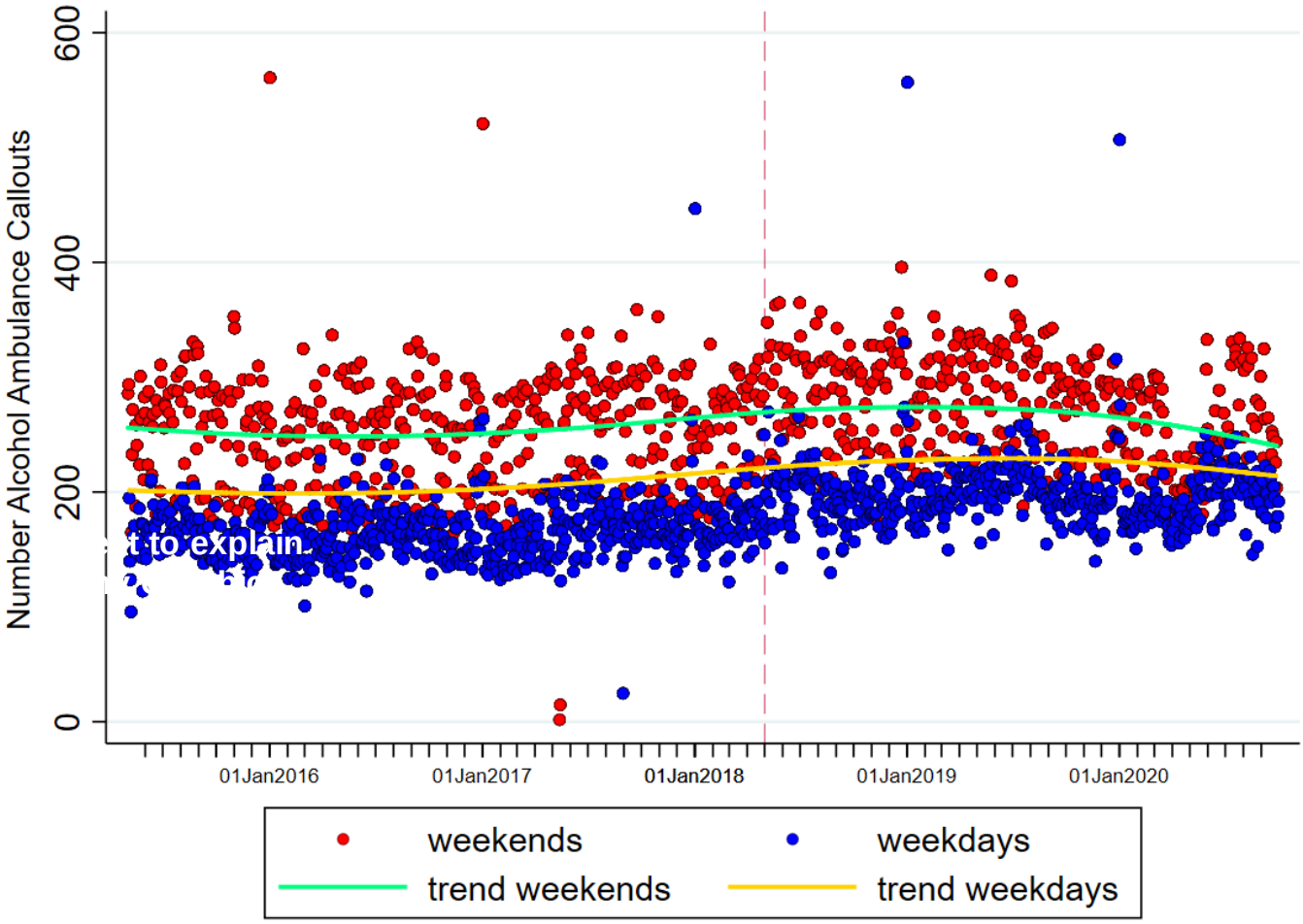
WHAT DID THE STUDY INVOLVE?

Ambulance Service Patient Records: We developed a highly accurate algorithm (set of rules) that was applied to notes made by ambulance clinicians in electronic patient records to search for mentions of alcohol or related terms, indicating that alcohol was likely a factor in the call-out. The algorithm was developed using a sub-sample of 5,416 call-outs, and found to perform very well (99% accuracy) in identifying call-outs from notes when compared to the professional judgement of an experienced paramedic who manually reviewed the notes. We applied this algorithm to all ambulance call-outs in Scotland from May 2015-October 2021 and analysed alcohol-related call-outs statistically over time using time series analysis.

Ambulance Staff Interviews: We conducted in-depth qualitative interviews with a diverse sample of 27 frontline ambulance clinicians (paramedics/technicians/others, 19male/8female, with 1-40+ years experience) and four staff in senior roles. Interviews were transcribed and analysed thematically, via deductive (pre-planned) and inductive (emerging) coding in line with study aims.

WHAT WERE THE RESULTS AND WHAT DO THEY MEAN?

Quantitative findings: The graph below shows the number of alcohol-related ambulance call-outs on weekdays and weekend days from May 2015 to March 2020 prior to the pandemic. The red dashed line illustrates the date (1st May 2018) at which MUP came into effect. Findings are further explained overleaf.



WHAT WERE THE RESULTS AND WHAT DO THEY MEAN? (*continued*)

Minimum unit pricing

The statistical analysis showed that the introduction of minimum unit pricing for alcohol was not associated with a change in volume of alcohol related callouts in Scotland. Variations in the overall number of callouts and in alcohol-related call-outs in specific subgroups were likely to be related to other factors. Any effect of MUP was difficult for ambulance clinicians to observe but was felt to be small, as alcohol prices in entertainment venues like bars and clubs were unaffected by MUP (as they were already higher), and because alcohol continued to be widely accessible and available.

MUP has been found in other studies to have reduced alcohol consumption at population level, likely to convey health benefits, but it was not found to have significant impact on existing dependent drinkers who generate a large proportion of alcohol-related ambulance call-outs (see first quote overleaf). Furthermore, it is unlikely to affect call-outs arising from drinking in entertainment venues, though a sufficiently high MUP could reduce 'pre-loading' with off-trade alcohol before going out which would be expected to reduce intoxication, a key cause of ambulance call-outs. Call-outs related to cancer or cardiovascular disease or any other presenting condition where the contribution of alcohol may be hidden to ambulance clinicians, would not have been detected in our analysis.

Types of Alcohol-Related Ambulance Call-Out

There were two broad categories of alcohol-related call-out which were most commonly reported: firstly, attending patients with alcohol problems/dependence with or without mental health problems, and secondly, attending patients who were drunk or injured after attending parties, bars, nightclubs or other entertainment venues. Interviewees reported that attending call-outs in busy pubs/clubs was complicated and stressful due to the noise and busyness of such venues. Calls to patients with chronic alcohol issues, were also challenging, especially with repeat callers, as they tended to have mental health and more entrenched problems.

> *" You have people who have had too much to drink on a night out and something happens as a result of that. I think there are quite a few of those but they're certainly not the phenomenon that I think the media would display. I wouldn't say that that's the big issue. Then the other two are chronic alcoholics who are drunk at that point in time or people who are chronic alcoholics and have related medical conditions that have caused them to present to the Ambulance Service. And I honestly think those two categories, the second two I mentioned, probably form the majority of our alcohol related work in my opinion "*
>
> Int 11, Male, Paramedic

WHAT WERE THE RESULTS AND WHAT DO THEY MEAN? (*continued*)

> *"It's absolutely horrific. It really is. You get tied up with drunks for long, long periods of time. Both groups, back and forward, back and forward and you can have an evening…you can have an evening of drunks … obviously it's a huge drain on resources, dealing with alcohol day in day out"*
>
> Int 08 Male, Ambulance Technician

Handling alcohol-related call-outs

Ambulance clinicians reported no specific training for handling alcohol-related callouts, but learned on the job. Whilst the involvement of alcohol did complicate the clinical handling of injuries or illnesses, interviewees felt that future education and training on alcohol dependence, links with mental ill health, and how best to communicate effectively with patients in alcohol-related calls, were training priorities. Further, many clinicians reported poor knowledge or availability of services to meet the needs of patients, especially those with chronic alcohol problems, and expressed a desire to have pathways and services available to them to invoke with patients facing alcohol dependence.

Alcohol is a major burden for staff & SAS

Alcohol calls were unpredictable, relentless and repetitive, caused anxiety for ambulance clinicians, many of whom had experienced aggression, or physical and sexual harassment during such calls. Many alcohol-related call-outs were not considered clinical emergencies and were seen as potentially delaying responses to other patients. Negative experiences were accepted as part of the job and did not deter most from abiding by their duty of care to those patients but alcohol calls were felt to be a drain on staff morale and resources overall.

> *"…one thing that needs to be incorporated into training, how you speak to a person, not just how to take a pulse or the clinical aspects of it. Communication is a good ninety five percent of this job"*
>
> Int16, Male, Ambulance Technician

> "*unfortunately they don't have anything at the minute specifically for addictions or substance misuse. So we're unable to refer the person directly to a rehab facility or we can't take them to an Alcohol Support Unit*
>
> Int24, Male, Ambulance Technician

WHAT IMPACT COULD THE FINDINGS HAVE?

- The findings clearly show how alcohol constitutes a large burden on the Scottish Ambulance Service; few other risk factors give rise to anything approaching the same number of call-outs. The public and Scottish Government should consider whether or not this is acceptable, when ambulances are a limited resource in high demand.
- The best available evidence suggests that this level of alcohol-related call-outs is not inevitable, rather, it could be reduced if stronger alcohol policies to reduce the affordability, promotion and availability of alcohol were implemented, as recommended by the World Health Organization.
- Other recent studies have shown that MUP has reduced alcohol consumption in Scotland. A higher MUP is probably needed to see an effect on ambulance call-outs. With MUP, the quantities of alcohol being consumed by dependent drinkers may fall over time due to a lack of cheap, high-strength alcohol. Attention could also be paid to the numbers of premises serving alcohol, especially later at night to reduce levels of drunkenness, related harms and ambulance call-outs.
- The Scottish Ambulance Service should continue to collaborate with experts to develop, implement and evaluate a strategic approach to alcohol-related call-outs, considering its role in primary and secondary prevention, as well as acute treatment.

HOW WILL THE OUTCOMES BE DISSEMINATED?

We have published or are preparing up to seven papers using the data described in this report. Two are already published; there will be one further quantitative paper on the impact of minimum unit pricing on call-outs and up to four further qualitative papers on call-out types, ambulance clinician experiences, clinician preparedness for such call-outs and clinical handling of alcohol-related calls.

We shared a summary of the findings with all senior staff interviewees (see methods above) and had an in-depth discussion with them about the implications for SAS. We have disseminated findings to the Public Health Scotland MUP evaluation collaborative and plan to host a stakeholder workshop in 2023 to share the findings of the full study with a wider audience.

Further research should seek to examine the burden arising from different call types including duration and frequency, and evaluate the impact of any future policy changes on alcohol call-outs.

PUBLISHED PAPERS *(at December 2022)*

Fitzgerald N, Manca F, Uny I, et al. Lockdown and licensed premises: <scp>COVID</scp>-19 lessons for alcohol policy. Drug Alcohol Rev. 2022;41(3):533-545. doi:10.1111/dar.13413

Manca, F.; Lewsey, J.; Waterson, R. et al. Estimating the Burden of Alcohol on Ambulance Callouts through Development and Validation of an Algorithm Using Electronic Patient Records. Int. J. Environ. Res. Public Health 2021, 18, 6363. doi:10.3390/ijerph18126363

CONCLUSION

The burden of alcohol on the Scottish Ambulance Service is high, and manifests not only in numbers of call-outs but also in negative experiences for staff, affecting morale. This burden was not reduced by the introduction of a minimum unit price of 50 pence per unit of alcohol in the timeframe of our study.

A multifaceted approach to reducing alcohol related harms would reduce this burden on SAS. This needs to include improved availability and accessibility of services for patients with alcohol problems and especially those with co-occurring mental health problems and improved training for ambulance staff, as well as stronger regulation of the availability, promotion and affordability of alcohol.

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Funding: This study received £243,608 in funding from the CSO.