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The more things change the more they stay the same: Assessing the immediate impact of the licensing act (2004) on attendances to accident & emergency departments

Robert Patton, John Strang, Catherine Birtles, Mike Crawford

This paper reports on a survey of 39 Accident and Emergency departments (AED) in England regarding presentations over a three month time period before and after the changes in the Licensing Act (2003) which came into force in November 2005. The time periods reported are January – March 2005 (the **PRE** period) and January – March 2006 (the **POST** period). Our data indicated NO significant change in the number of attendances that could be related to alcohol consumption (hereafter referred to as 'attendances') in the first two months following increased availability. In the third month there was a significant decrease in 'attendances'. There was considerable variation in the changes in 'attendances' between participating AEDs. The pattern of 'attendances' on weekdays (Monday – Thursday) was unchanged. Following increased availability 'attendances' on Saturday fell, but increased on Fridays and Sundays. There were no changes in the pattern of 'attendances' across the 24 hour period, with most patients presenting at around Midday. Rates of 'attendances' for Assault and Head Injury fell significantly following the change in availability. The number of 'attendances' where alcohol was specifically mentioned increased significantly during the **POST** period. Prior to the increase in availability, the number of 'attendances' where alcohol was specifically mentioned peaked sharply around Midnight. Following the change in the law, there was a general increase in such 'attendances' from 11PM through to 3AM. Although there was a general increase in alcohol specified 'attendances' across the week, there was a significant increase in such 'attendances' on a Sunday. Data from one Northern and one Southern Local Ambulance Service was provided to complement the data obtained from individual AEDs. The number of alcohol related ambulance call outs for the LAS and NEAS increased following the change in the law.

The more things change the more they stay the same: Assessing the immediate impact of the licensing act (2004) on attendances to accident & emergency departments.

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Executive Summary

This paper reports on a survey of 39 Accident and Emergency departments (AED) in England regarding presentations over a three month time period before and after the changes in the Licensing Act (2003) which came into force in November 2005. The time periods reported are January – March 2005 (the **PRE** period) and January – March 2006 (the **POST** period).

- National data provided by the Department of Health indicates a steady rise in AED attendances over time, with an average 5% increase per year.

- Our data indicated NO significant change in the number of attendances that could be related to alcohol consumption (hereafter referred to as 'attendances') in the first two months following increased availability. In the third month there was a significant decrease in 'attendances'.

- There was considerable variation in the changes in 'attendances' between participating AEDs.

- The pattern of 'attendances' on weekdays (Monday – Thursday) was unchanged. Following increased availability 'attendances' on Saturday fell, but increased on Fridays and Sundays.

- There were no changes in the pattern of 'attendances' across the 24 hour period, with most patients presenting at around Midday.

- Rates of 'attendances' for Assault and Head Injury fell significantly following the change in availability.

- The number of 'attendances' where alcohol was specifically mentioned increased significantly during the **POST** period.

- Prior to the increase in availability, the number of 'attendances' where alcohol was specifically mentioned peaked sharply around Midnight. Following the change in the law, there was a general increase in such 'attendances' from 11PM through to 3AM.

- Although there was a general increase in alcohol specified 'attendances' across the week, there was a significant increase in such 'attendances' on a Sunday.

- Data from one Northern and one Southern Local Ambulance Service was provided to complement the data obtained from individual AEDs.

- The number of alcohol related ambulance call outs for the LAS and NEAS increased following the change in the law.

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Introduction

The current UK government are concerned with the prevalence of binge drinking and perceived increase in alcohol related hospital admissions (costing the NHS in excess of £4 billion per year) [1]. The Alcohol Harm Reduction Strategy for England [2] and the "Choosing Health" White Paper [3] proposed several strategies to combat excessive alcohol consumption, including the extension of pub licensing hours to enable drinkers to pace their consumption and to reduce the numbers of intoxicated persons in competition for limited town centre facilities (Taxis, Toilets and Takeaways). On the 24th November 2005 the Licensing Act (2003) was enacted, and pubs, clubs and supermarkets could then apply for extensions to their opening hours up to 24 hour opening.

Concern has been expressed by many academics and clinicians regarding the potential impact of an increase in the availability of alcohol in the UK [4-7], as there is compelling evidence that suggests this would increase levels of alcohol consumption and result in a subsequent increase in alcohol related morbidity and mortality. These concerns were reflected by the popular media, led by the Daily Mail, with several newspapers launching campaigns to abandon the proposed change*.

Such an increase in both per capita alcohol consumption and alcohol related problems following increased availability have been demonstrated previously in Sweden (1955) [9], Finland (1969) [10;11] and Australia (1990) [12;13]. Edwards (2000) [14] noted that in one New Zealand study, greater availability was associated with an increase in harm. However the relationship between availability and consumption is not clear. The Alcohol Advisory Board of New Zealand report that over the last ten years increased access to alcohol has been associated with a reduction in consumption [15], and one Australian study [16] found no significant increase in levels of consumption.

In a recent survey of 26 A&E departments undertaken by the BAEM, 12% stated that following the recent changes in the licensing act they were dealing with an increase in alcohol related violence or accidents.

This is not the first change to opening hours in England within living memory. In 1988 "all day drinking" was introduced, and at that time there was much media speculation that this would lead to dramatic increases in alcohol related problems. Subsequent research found that although there was a significant increase in alcohol related problems [17], there was no increase in alcohol related mortality [18].

Changes in Scotland's liquor licensing laws (1976) were associated with a reduction in public order offences and no significant changes in alcohol related morbidity or mortality [19], which continued to increase at the same rate as before the change.

* For a full report on the lead up to the change in the law, refer to the Institute of Alcohol Studies "Licensing Act" report (2005) [8]

During the 1990's the Australia introduced later trading hours for licensed hotels in Perth. This led to a significant increase in alcohol consumption, alcohol related road crashes and levels of violent assault [12;13].

Further evidence on the impact of increasing availability to alcohol is provided by Norstrom & Skog (2005) [20]. During 2000 alcohol became available on a Saturday in certain parts of Sweden, and this was then extended to the whole country. The authors found that although there was a statistically significant increase in consumption, they did not detect any increase in alcohol related harm.

In 1997 a policy of uniform closing times was introduced in England. This had the effect of placing extra strain on limited town centre resources. Graham and colleagues (1998) [21] used an alcohol meter to determine the blood/alcohol levels of patients attending an inner-city AED both before and after this change. The authors found that there were no significant changes in alcohol levels or alcohol related assaults.

A recent audit of blood alcohol levels in one Belfast AED over a four year period demonstrated an increase in the number of intoxicated patients presenting [22].

Kemm (2001) [23] commenting on the proposed changes to the Licensing act urged caution, reminding us that the fears that preceded the changes in 1976 and in 1988 had not been realised, but noted that the potential public health impact of these changes could be detrimental, and advised that the process should be closely monitored and assessed.

Alcohol-related attendances to accident and emergency departments will provide a useful indication of the impact of increased availability. Huntley et al (2001) [24] have identified the 'top ten' AED presentations most likely to be associated with hazardous drinking (i.e. PAT positive) . Further refinement to this list was provided by Brown (2006) [25], who identified six presenting conditions that accounted for 75% of all patients identified as PAT positive.

Clearly there is no easily predictable change in health consequent to changes in the availability of alcohol, with some disagreement amongst experts as to the outcome of increased availability through extended opening hours. However the balance of evidence does suggest that, at least in the longer term, per capita levels of alcohol consumption will increase together with associated alcohol related harms. The relationship between access to alcohol, alcohol consumption and alcohol related harms are complex. The UK government has previously conceded that availability of alcohol may interact with other (undisclosed) factors and result in "unexpected" consequences [2].

It is likely that any increase in alcohol consumption within a given locality will result in an associated increase in alcohol related harm, and that this in turn will precipitate an increase in use of A&E services. Therefore we decided to

compare the number of such attendances to AEDs before and after the change in the law.

Methods

This was a cross-sectional survey of all AEDs in England over the period January – March 2005, and January – March 2006. Anonymous data was collated by local AED staff from their existing computerised records and sent electronically to the research team for analysis.

Precise definitions of the presenting conditions that are directly related to alcohol consumption are not clear. The work of Touquet and colleagues has led to the development of a "top ten" set of presenting conditions that account for over 75% of patients subsequently identified as hazardous drinkers (those consuming at least double the recommended daily unit allowance on one or more occasion per week) [24;26;27]. For the purposes of this study we further refined the "top ten" to encompass just six conditions based on further work undertaken at St Mary's Hospital, Paddington (personal communication with resident Alcohol Health Worker) [25].

For the purposes of this report, we shall refer to these conditions as "presentations that could be related to alcohol consumption".

Procedure

R&D approval for this study was granted by the SLaM / IoP committee on 18/11/2005. As no patient identifiable data was requested this study was classified as Audit and therefore Ethical approval was not required (this was confirmed by the IoP ethics advisor).

There is, at present, no central repository of A&E department contact details. Names of A&E lead clinicians, together with address, email and telephone details for each English AED (N=192) were obtained from sources in the Department of Health and British Association of Emergency Medicine.

A cover letter introducing the project was sent to the named contact in each department. A follow-up phone call was made to each department two weeks after the initial letter was posted.

During the initial telephone contact some basic data concerning the provision of alcohol services was obtained. Follow-up emails were sent periodically remind participating departments to send their data. Departments were requested to provide data in a specified format.

Each department was asked to provide data on falls, collapse or fits, non-specific gastro-intestinal disorders, feeling unwell (including alcohol related presentation), assaults and accidents. The time periods requested were January – March 2005 (The **PRE** period) and 2006 (the **POST** period). Details

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requested included patient demographics (age, gender), time and date of presentation, presenting condition, and disposal details (InPatient, OutPatient, GP, DNA).

Data handling

Data was sent by email in SPSS or Access format. Data was stored on a secure removable hard-drive. The researcher was able to contact individual departments to resolve any issues regarding the data. Data was collected from departments over a two month period. Data cleaning was then undertaken in SPSS with each case (N=275,000) being transformed to fit the common data structure.

Additionally data on alcohol related ambulance calls outs during the survey period was obtained from two local ambulance services (Newcastle and London).

Results

One hundred and eighty nine departments provided details of about alcohol screening, measurement of blood alcohol level and access to an Alcohol Health Worker (98.9% response rate). Four departments used formal screening tools and 24 asked general questions about consumption. Blood alcohol levels were measured as required by 100 departments. No departments routinely measure blood alcohol, and 84 departments never assess blood alcohol levels. Alcohol related attendances were formally recorded by 131 departments. Access to an alcohol health worker (AHW) or clinical nurse specialist (CNS) was reported by 32 departments.

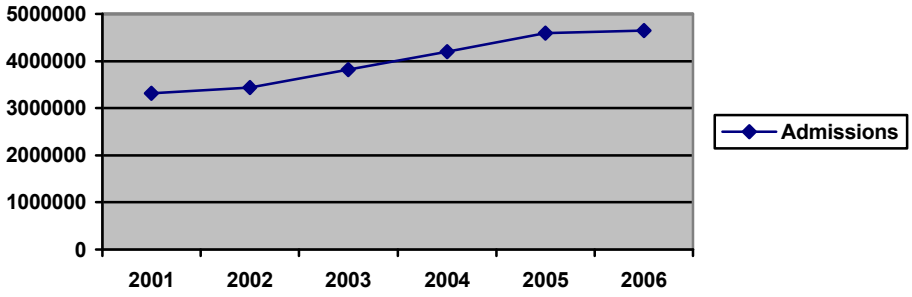
Of the 192 departments identified, 56 consented to participate in the study (29.2% of all AEDs). Data was actually received from 43 departments (22.4%), however due to technical issues four departments were excluded[†], therefore data from 39 AEDS was included (20.3%).[‡] In total, data from **166514** cases were included in our analysis (84650 for the **PRE** period, and 81864 for the **POST** period).

[†] One hospital sent data in paper format, three provided data on ALL AED activity for the period requested however it was not possible to identify those presentations that matched our inclusion criteria.
[‡] No data was available from any London based hospitals, or any departments that admitted use of formal screening methods

Overall attendance.

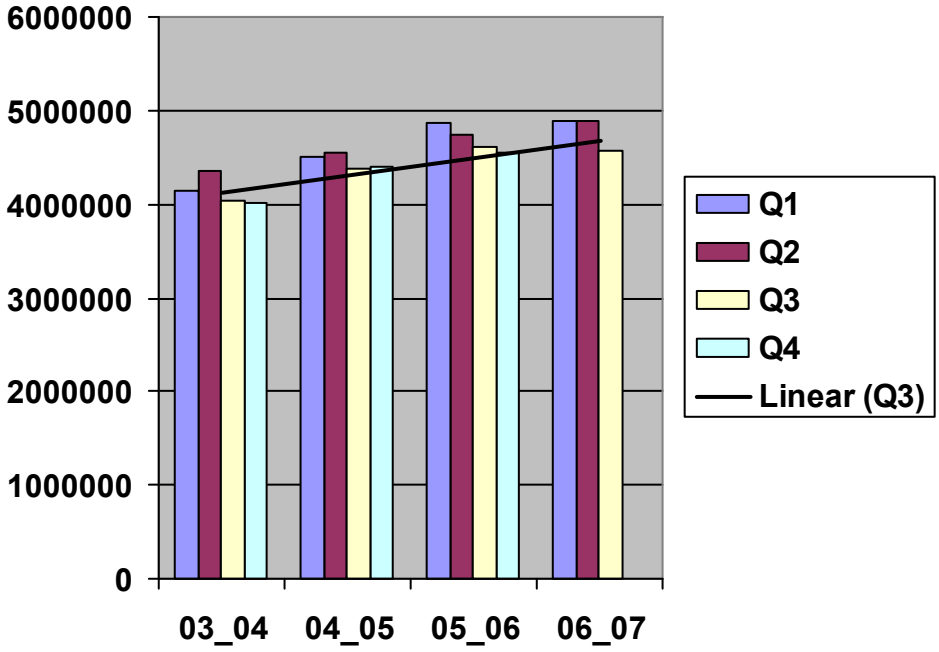
Data from the DH indicates a general increase in the number of AED attendances over time (25% increase over 5 years).

Figure 1 ***General data on AED admissions England – including minor injuries units, 2001-2006***



This chart shows the total number of AED admissions for each quarter from Q1 03/04 to Q3 06/07[§]. There has been an increase in admissions year on year. Reasons for this steady increase remain unclear.

Figure 2 ***Total AED admissions in England Q1 2003/4 – Q3 2006/7***



[§] Data on Q4 2006/7 is not yet available.

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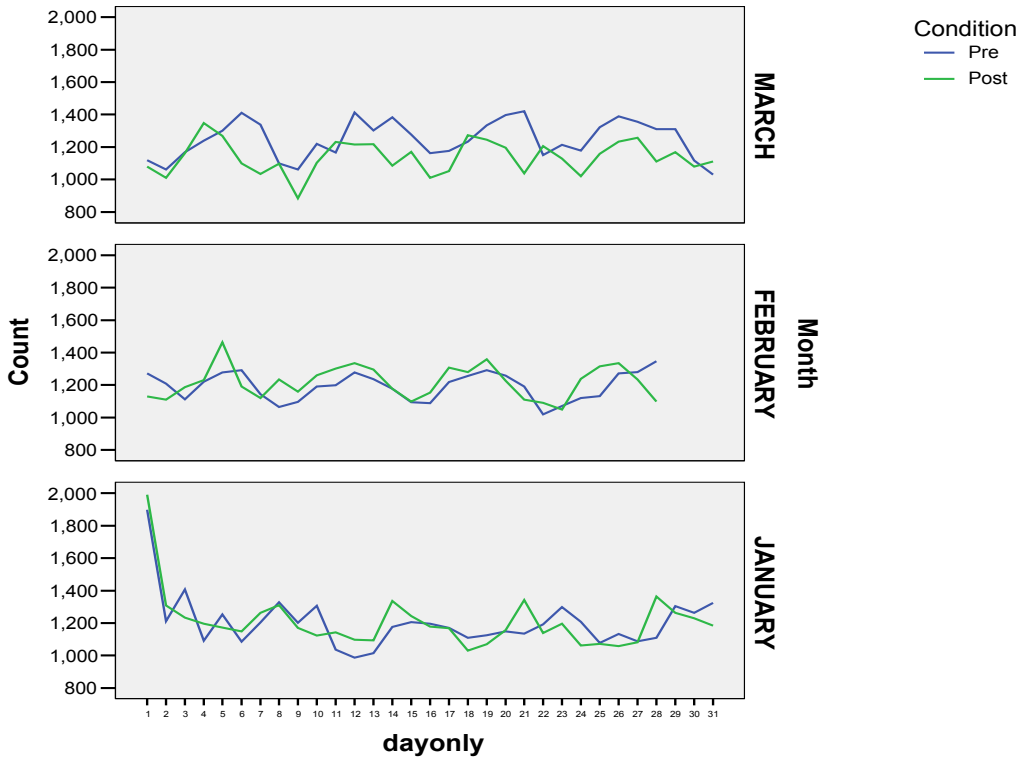
The following graphs show a monthly breakdown of total attendances for the **PRE** and **POST** period.

Figure 3 Presentations that could be related to alcohol consumption – Monthly Distribution



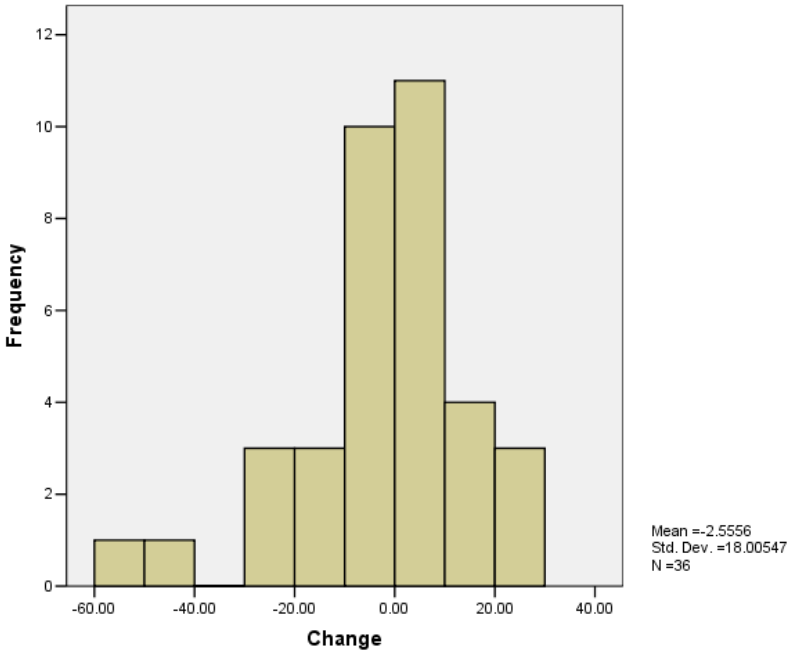
This data would suggest that following the introduction of the change in licensing laws in November 2006 there was no significant change in the number of presentations that could be related to alcohol consumption. This pattern was sustained though January and February 2006, however by March 2006, rates of presentation had REDUCED.

The distribution of AED attendance across the 24 hour day has remained unchanged. Attendances peak at around mid-day, and fall to their lowest point at around 6AM.

Changes in AED attendance.

There is no uniform pattern of change in AED attendance following the changes in the licensing act. This graph illustrates the proportional change in actual attendances (both positive and negative).

Figure 4 ***Overall Changes in Presentations that could be related to alcohol consumption***



This variation indicates that the pattern of consumption may be medicated by factors other than the general availability of alcohol. Other factors, such as the number of licensed premises opening beyond the 'traditional' hours, may be responsible. The two departments that indicated reductions of between 40 and 60% may have errors present in the data.

The proportion of attendances on each weekday (Monday-Thursday) remained consistent throughout the study period. However, there was a significant *decrease* on Saturday (χ^2=164.9, df=6, p<0.01), and modest (but statistically insignificant) *increases* on Friday and Sunday.

Figure 5 ***Presentations that could be related to alcohol consumption – Daily distribution***

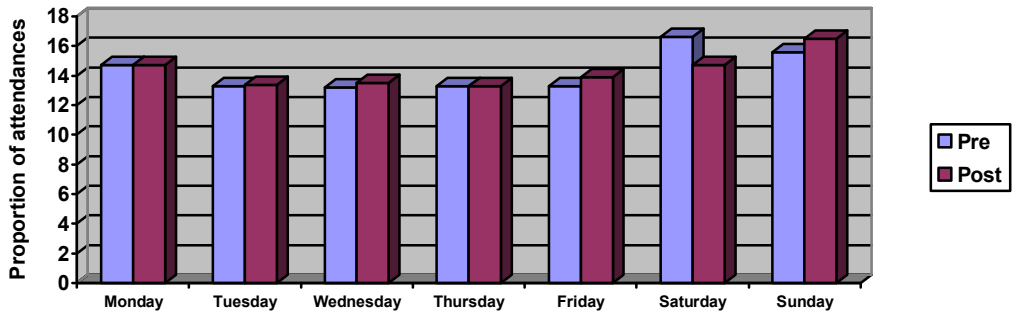


Figure 6 ***Presentations that could be related to alcohol consumption – Time Distribution***

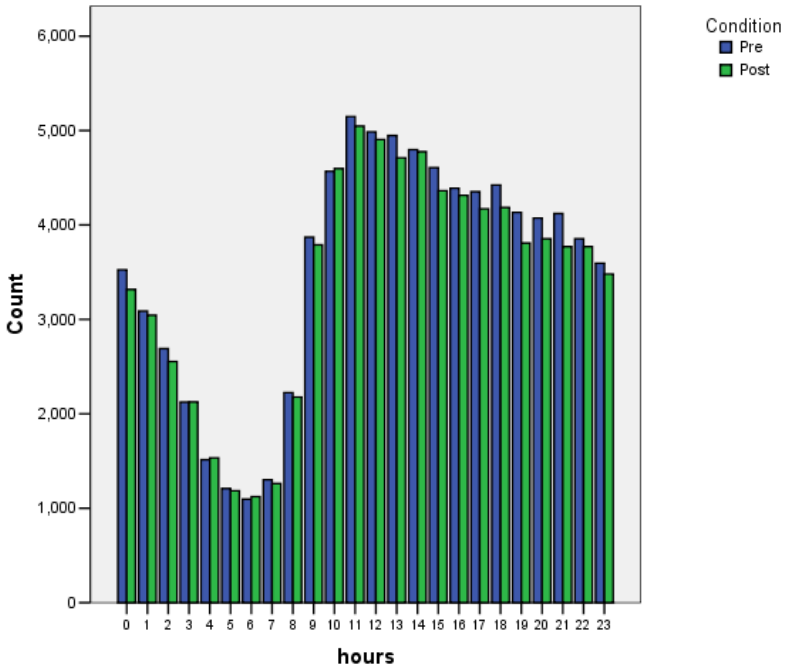
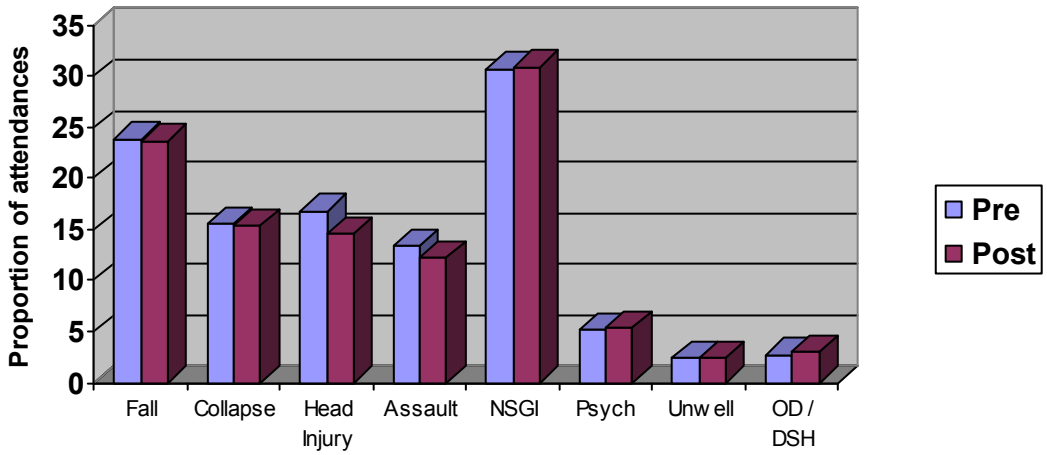


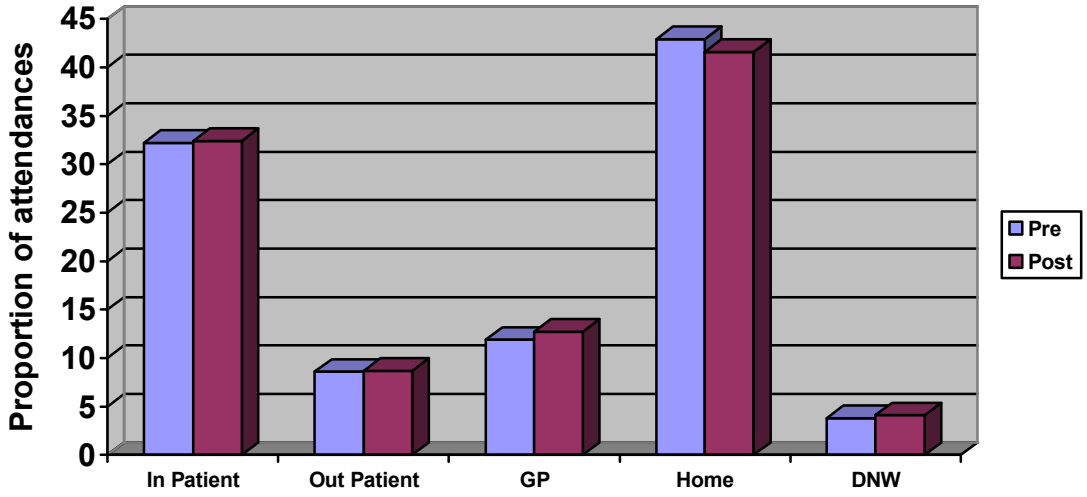
Figure 7 ***Presentations that could be related to alcohol consumption – presenting conditions***



There was a significant reduction in the proportion of Head Injury (χ^2=27.3, df=1, p<0.01) and Assault (χ^2=56.1, df=1, p<0.01) presentations following the introduction of the law change. The proportions for each other condition remained unchanged throughout the study period.

There was no significant change in what happened to patients (disposal) following the change in the law. However a slight (non-significant) increase in the proportion of patients advised to attend their GP practice, and those who left the AED prior to being seen (Did Not Wait – DNW) was observed, together with a reduction in those sent home with no further medical contact required.

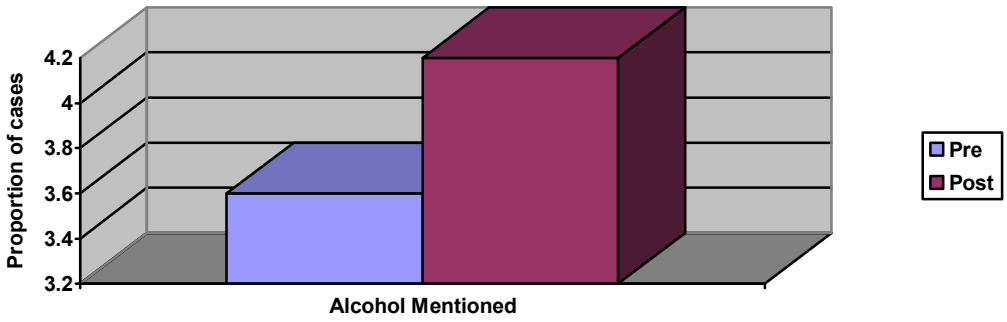
Figure 8 ***Presentations that could be related to alcohol consumption – patient disposal***



Admissions known to be related to alcohol.

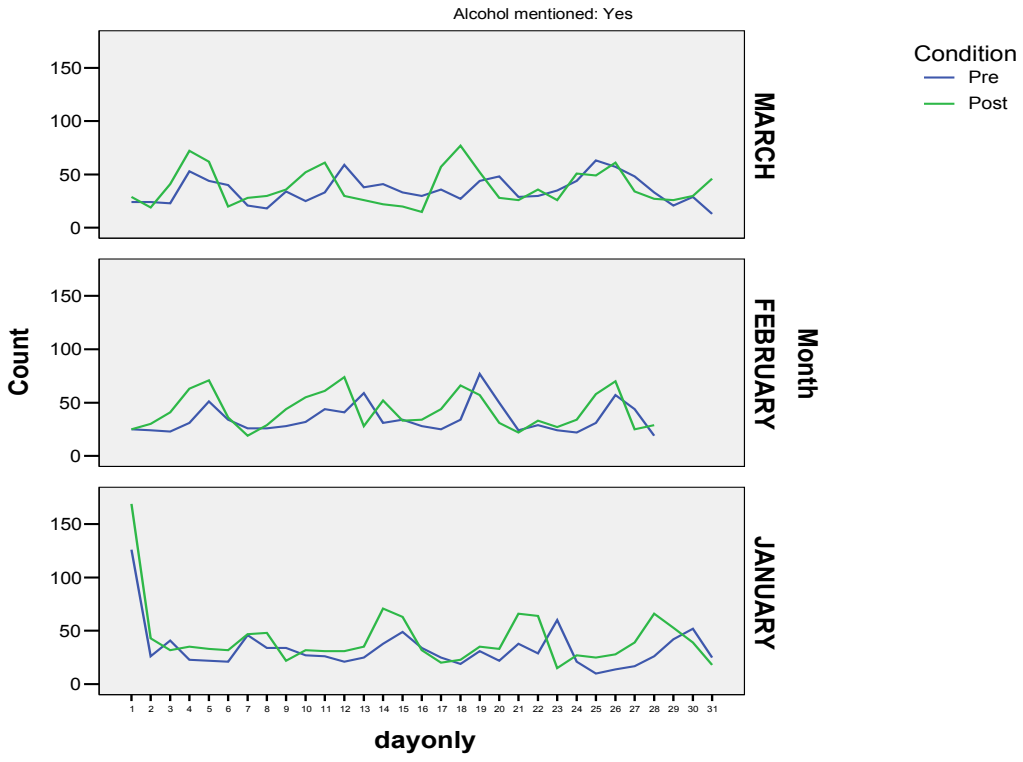
Overall, there was a significant ***increase*** in the number of cases were alcohol was specifically mentioned (χ^2=40.9, df=1, p<0.01)

Figure 9 Specific mention of alcohol – Overall change



An examination of the data recorded by participating hospitals where alcohol is specifically mentioned in the case record is presented below.

Figure 10 Specific mention of alcohol – Monthly distribution



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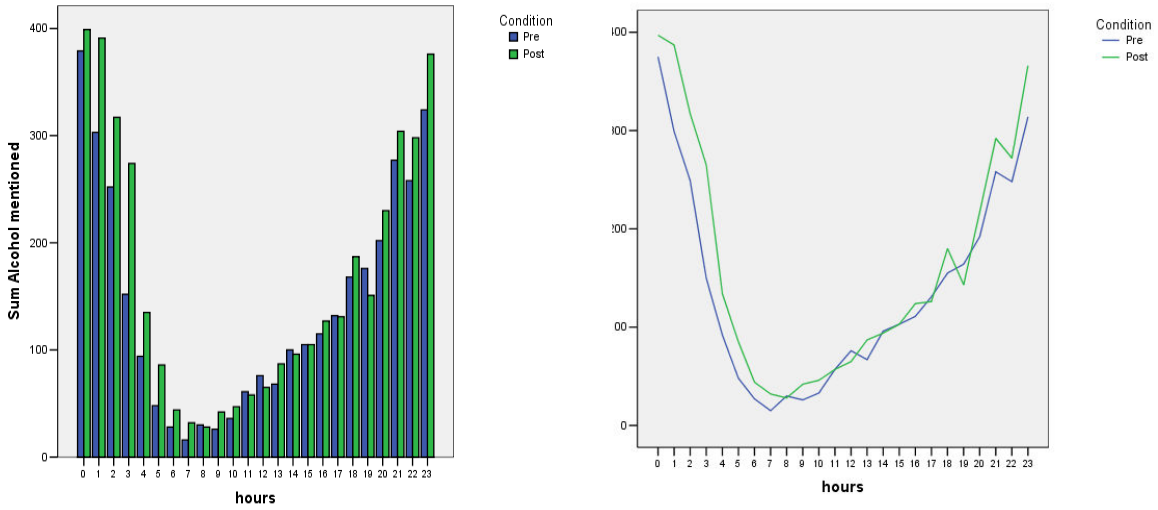
An analysis the number of admissions were alcohol is specifically mentioned across the 24 hour period indicates that, following changes to the law, there has been an increase in such admissions, particularly from 11PM – 4AM.

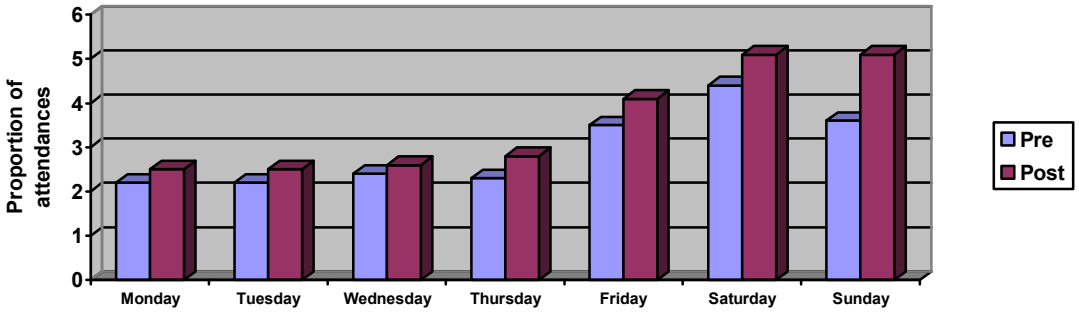
This data reflects the anecdotal evidence reported by AED staff that there has been a change in the pattern of alcohol related presentations.

Figure 11 Specific mention of alcohol – Hourly Distribution



There is a trend towards an overall increase in specific mention of alcohol cases, with a significant increase in such cases on a Sunday, following the change in the law (χ^2=425.1, df=6, p<0.01)

Figure 12 Specific mention of alcohol by day



Data from Local Ambulance Services

Data on alcohol related calls to local ambulance services was obtained from two areas (London and the North East).

Figure 13 ***Data from London Ambulance service on alcohol related calls 2005/2006***

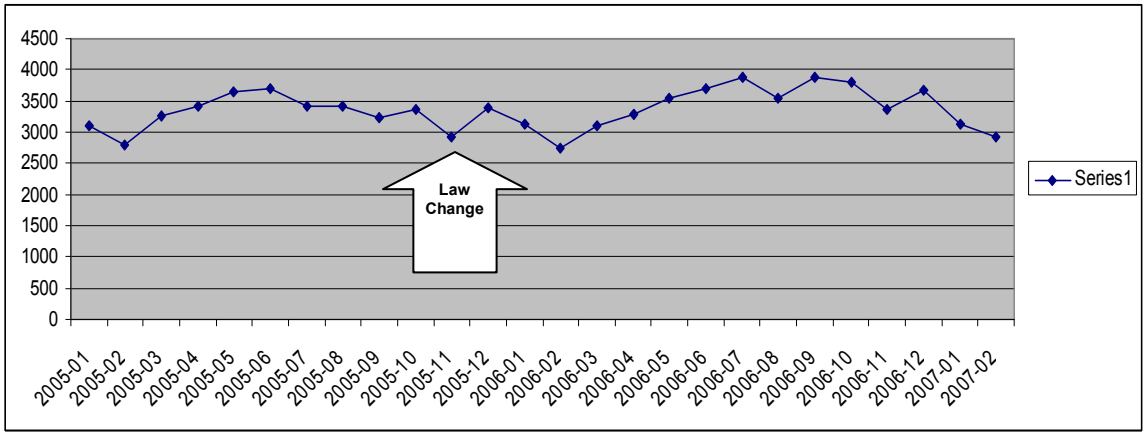
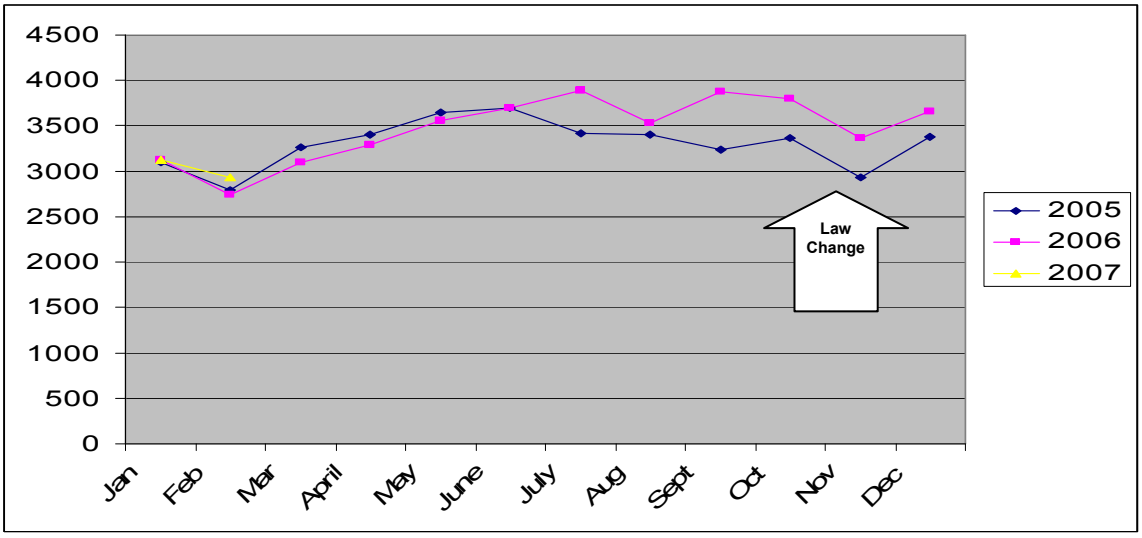
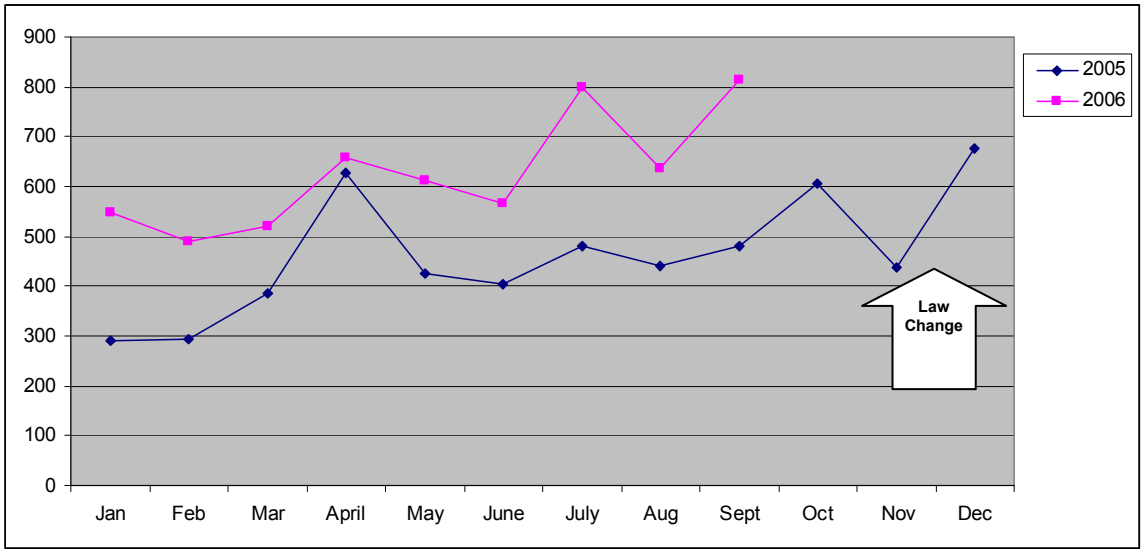


Figure 14 ***Data from London Ambulance service on alcohol related calls 1/2005 – 1/2007 (by year)***



Following the change in the law, the number of calls between January and June 2006 was lower than the same period in 2005. From July 2006 the number of calls was significantly higher than the previous year.

Figure 15 Data from North East Ambulance service on alcohol related calls 1/2005 – 9/2006 (by year)



Following the change in the law, the number of alcohol related ambulance call outs in the North East increased.

Discussion

Analysis of 'attendances'

Data was obtained from 39 AEDs. It has not been possible to ascertain if there are any significant differences between those departments who did and who did not contribute data. Certainly the absence of data from any London AED and from any department that currently has access to an AHW may limit the ability to generalise from the results of the study. Nevertheless, this is the first attempt to quantify what the actual impact of the changes in the Licensing Act (2003) has had on both alcohol related and potentially alcohol related AED attendances.

Our use of the six specific AED presentations thought to be most related to alcohol consumption may not have been sensitive enough to detect any changes in alcohol related attendances. Although these presenting conditions may be relevant to the inner-London AED where they were identified, it could be that they are not appropriate for other departments in other parts of the UK.

The results of the study may have been confounded by the introduction of an Alcohol Misuse Enforcement Campaign (AMEC) immediately following the change in the law. The increased activity focused upon dealing with and preventing alcohol related violence, and may explain the reduction in head injuries and assaults observed. A recent report published by Cardiff University Violence Research Group confirms that attendances following violent assault have reduced between 2005 and 2006 [39], estimating an overall 2% fall.

Although the changes in the law permitted licensed premises to open up to 24 hours per day, it is clear that not all pubs and clubs have done so. In fact most have opted to remain open for one or two extra hours on weekend evenings. Again, this may explain the observed increase in 'attendances' at this time. The wide variation observed in the relative changes in 'attendances' could be indicative of local variation in actual increases in availability. At this time it has not been possible to determine the proportion of local licensed premises that have applied for an extension to their opening hours, and of those granted such an extension, which ones are in fact opening longer.

Data on alcohol specified 'attendances' suggest that mention of alcohol related presentations has increased following the legislative changes. The extent to which this may be a function of the increased awareness of alcohol issues and hence better recording, remains unclear.

The observation that alcohol specified 'attendances' have increased on Sundays, and that the midnight peak has been replaced by a general increase between 11PM and 3AM, supports the anecdotal observations by AED clinicians [40] that far from reducing their workload, increased availability of alcohol has in fact increased it.

Conclusions and Recommendations

This study has found that although there has been a significant increase in the number of AED attendances where alcohol use is recorded, there has been no change in the number of attendances that could be related to alcohol consumption. There are a number of confounding factors that may have impacted upon the results.

Changes in the Licensing Act (2003) seem to have had little impact on alcohol related attendances. However, we do not suggest that the increased availability of alcohol has had no effect upon levels of alcohol consumption. We recommend that future studies should attempt to obtain accurate details on alcohol use among AED attendees. To facilitate this AEDs must in turn adopt formal methods of assessing alcohol consumption, and in doing so the needs for the provision of an Alcohol Health Worker in every department will become apparent.

The data obtained from both the Department of Health and from Local Ambulance Services indicate that the general trend towards ever increasing AED attendances and alcohol related call outs is continuing despite the change in the law. How should we interpret this? While the dramatic increase in alcohol fuelled assaults and injuries has not materialised, the hoped for reduction in AED workload has not been observed. The evidence base from other countries where the availability of alcohol has increased does suggest that levels of consumption will increase accordingly. Hazardous levels of alcohol consumption are associated not only with acute harms (such as accidents and assaults), but also with longer term chronic health problems. From this we conclude that it is too early to determine what the impact of increased availability of alcohol has upon the health of the nation in the longer term. At this time it seems appropriate to conclude that, as far as alcohol consumption is concerned, the more things change, the more they stay the same.

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