Applied **Criminology** Centre

The University of Huddersfield

Evaluation of Licensing Act:

Measuring Crime and Disorder in and around Licensed Premises

Research Study SRG/05/007

Final Report Prepared for the Home Office

Dr Andrew Newton, Professor Alex Hirschfield, Dr. Rachel Armitage, Michelle Rogerson, Leanne Monchuk and Dr Aidan Wilcox

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Applying criminological research for policy and practice

University of HUDDERSFIELD

Executive Statement

Introduction

The Licensing Act 2003 (hereafter referred to as the Act), which came into effect on 24th November 2005, represented a major change to the sale of alcohol in England and Wales, by potentially allowing licensed premises to sell alcohol for up to 24 hours, 7 days per week.

The introduction of the Act brought with it a range of additional measures. These included an expansion of police powers to close areas or particular premises, specific offences relating to the sale of alcohol to children and a new mechanism for reviewing the granting of licenses that takes into account crime prevention, public safety public nuisance and child protection.

The rationale behind the Act was that by removing fixed and artificially early closing times, the numbers of people exiting licensed premises would be dispersed over a longer time period. The expectation was that this would reduce binge drinking, violent behaviour, damage to property and disorder. At the same time, concerns were voiced that the Act would lead to greater alcohol consumption, increased levels of violence and more pressure on accident and emergency units.

In October 2005, the Applied Criminology Centre (ACC) at the University of Huddersfield was commissioned to carry out an evaluation of the impact of the legislation on changes in crime and disorder. The study examined baseline conditions and subsequent change occurring in the town centres of five case study areas, namely, Blackpool, Birmingham, Croydon, Guildford and Nottingham.

Research questions

The overall aims of the research were to provide a baseline indicator of levels of crime and disorder in and around licensed premises, and to examine the impact of the Act on patterns of crime and disorder in and around licensed premises, in each of the five case study areas.

A number of specific research questions were formulated to guide this research. These were as follows:

- What patterns of crime and disorder exist in and around licensed premises?
- What other local factors may explain the prevalence of crime and disorder in and around licensed premises?
- Has the introduction of the Act, and the granting of additional opening hours to licensed premises, led to a change in violence and disorder at these licensed premises?
- Have overall levels of crime and disorder within town and city centres changed following the Act?
- Have the peaks of crime and disorder displaced to later or earlier periods?
- Has the profile of crime and disorder in and around licensed premises and associated ‘hot spots’ changed in relation to venues with additional opening hours?
- Has the Act resulted in unintended consequences such as geographical displacement or diffusion of benefits to surrounding areas?

Data and methods

The study employed both quantitative and qualitative research methods to answer these questions. Baseline conditions were identified in each of the areas using data on recorded crime, police calls for service for disorder, and data on assaults obtained from Accident and Emergency (A&E) units and from the ambulance service. Much of this covered a period of up to two years baseline and one year post implementation of the Act. The baseline conditions

and changes in these offences/incidents following the implementation of the Act were analysed using a range of quantitative techniques. These included:

- Calculating monthly and yearly crime and disorder counts and rates and percentage change;
- Analysing crime and disorder by time of day and day of week;
- Analysis of domestic violence and alcohol 'flags';
- Analysing the age and gender of victims;
- The use of Geographical Information Systems (GIS) to map licensed premises and crime and disorder incidents in each area;
- The identification of clusters of licensed premises (i.e. areas of concentrated drinking) and their coalescence with crime and disorder 'hot spots';
- Analysis of crime and disorder in areas close to licensed premises (buffer zones);
- Proportional change analysis of crime and disorder;
- GIS analysis to test for evidence of spatial and temporal changes in crime and disorder;
- Benchmarking changes in crime and disorder in premise clusters against the remainder of the town centres;
- Constructing Resource Targeting Tables (RTTs) to identify the concentration of violence in licensed premises;
- Analysis of accident and emergency data.

The qualitative research involved both participant observation of licensed premises and key drinking areas and face-to-face interviews with bar, door staff and door supervisors. The fieldwork was conducted in three phases. Participant observation took place prior to the Act's implementation in November 2005; an initial round of interviews and further participant observation was conducted between January and March 2006 and a final round of interviews and participant observation took place in January 2007.

The data sets used in the research included:

- Police recorded crime data for violence against the person, criminal damage and sexual offences;
- Police calls for service data (disorder incidents only);
- Licensed premises data;
- A&E data;
- Ambulance data;
- Ordnance Survey AddressPoint®;
- Ordnance Survey 1:10 000 scale raster;
- UKBORDERS digital boundaries;
- Office for National Statistics (ONS) mid-2005 population estimates;
- ACORN 2006 population estimates.

Caveats

There were two major difficulties faced within this research. Firstly, the introduction of the Act was applied universally across England and Wales. Thus, it was not possible to identify a true counterfactual for the research (areas or licensed premises not affected by the intervention). Secondly, it was not possible to obtain comprehensive data on licensed premises that contained full records of operating hours before the Act (baseline period), and on current hours *applied for* and *used* hours (post implementation). It was possible to obtain data on current hours *applied for* (post implementation) for all five case study areas, although this required considerable processing for some of the case study areas.

Key findings

The findings from this study are discussed below by crime and incident type. This is followed by a brief summary of the main recommendations arising from the research.

Violence against the person

The study examined changes in crime and disorder across five case study sites. When the data are aggregated across all five areas, a reduction of 2.8% can be identified in levels of violence against the person from the baseline to the post implementation period. On weekdays, the overall reduction was 4.4% but only 1.2% during weekends. Thus the introduction of the Act coincided with an overall decrease in violence against the person, but to a lesser extent at weekends.

Different patterns emerged at individual case study-level. Overall violence against the person (i.e. Monday through Sunday) fell in Croydon and Blackpool (by 13.4% and 9.6%, respectively) but rose in Guildford, Birmingham and Nottingham (by 11.5%, 6.7% and 2.8 % respectively).

In Croydon and Blackpool, violence against the person fell compared with the baseline period for 10 of the 12 months post implementation. In Guildford, it rose for 10 of the 12 months following implementation of the Act.

Statistical analyses (t tests) indicated that most of the post implementation period was characterised by either the absence of any significant change or a statistically significant reduction in violence against the person compared with the baseline. Only one statistical test identified a significant increase in violence and that was in the second half of the post implementation period for Guildford (comparing November 2005 through May 2006 with November 2004 through May 2005).

Within this overall picture of negligible change and significant reductions in violence, there were some variations. Birmingham did not experience any significant change either during the baseline or through the post implementation period, whereas, in Croydon significant reductions in violence against the person occurred in the six months leading up to the Act and for the first six months post implementation. The reductions in this case might reflect the continuation of a pre-existing trend rather than a direct result of the Licensing Act.

Nottingham moved from a position of no significant change, preceding the Act, to significant reductions in violence against the person in the first six months following implementation although this was not sustained thereafter.

In three areas (Blackpool, Guildford and to a lesser extent Nottingham), reductions in violence against the person coincided with the implementation of alcohol misuse enforcement campaigns (AMEC). It is possible that focussed police activity from AMEC may result in additional offences being recorded. There was insufficient data to identify any causal relationship between the two. Elsewhere, no such relationship was evident.

In Nottingham and Blackpool, increases in violence against the person took place during the period of the 2006 Football World Cup. In other areas there was either no relationship or a decrease in violence. Once again, there was insufficient data to identify any causal relationship between the two.

There was some evidence that a shift in the timing of violence against the person had taken place since the introduction of the Act, specifically, from between 11.00pm and midnight to much later in the night/early hours. Thus, all areas except Nottingham saw a reduction in violence against the person between 11:00pm and midnight whilst every case study area (with the exception of Croydon) saw an increase in the number of violence against the person offences taking place between 3am and 3:59am and between 4.00am and 4.59am. The increase between 3am and 3.59am was substantial (e.g. exceeding 45 per cent on the

baseline) in all four areas It is acknowledged that a relatively small proportion of crime occurs at this time of day but the volume increases (+91 in Birmingham; +114 in Blackpool; +27 in Guildford; and+87 in Nottingham) are noticeable, and did increase the proportion of crime that occurred between 3.00am and 3.59am.

Croydon was the only area to have witnessed a reduction in violence against the person throughout the evening and night, reflecting the substantial fall in violence against the person post implementation. The statistical tests suggest Croydon also experienced a significant reduction in violence against the person in the six months leading up to the act also.

Examining change in the proportion of offences by time of day revealed a number of important findings. In Blackpool and Birmingham, there were large decreases in the proportion of offences between 2.00am and 2.59am and in the following one hour period these areas saw large increases. In Nottingham similar trends were observed but only in areas near to licensed premises. The trend was not evident throughout the case study area. In Guildford, a reduction occurred between 11.00pm and midnight, with subsequent proportional increases between midnight and 1.00am, and 2.00am and 3.00am. Croydon experienced reductions between 1.00am to 1.59am.

This is suggestive in some areas of a displacement of offences to a later time period, coinciding with the change in licensing hours. Moreover, when examining this change within 50m of licensed premises, these changes occurred in the same direction but at a greater magnitude than in the case study area, implying the change was greater close to licensed premises. For example in Blackpool in the case study area there was a 2.7% reduction in the proportion of crime occurring (-214 offences). Within the cluster area (high concentration of licensed premises) this proportion reduced by 4.8% (-145 offences). In the following hour, there was then an increase in the case study area in the proportion of offences by 3% (114 offences). Within the cluster area this proportional increase was 6.1% (117 offences).

An examination of changes in the peaks of violence against the person suggested that post implementation there was a flattening out of peaks in Blackpool and Birmingham. In Croydon and Nottingham there was no observable change, and in Guildford there was a shift in the peak to later in the early morning.

Many of the changes in the timing of violence during the week also occurred at weekends but to a greater extent. For example, Croydon saw falls in violence against the person between 11pm and 3am, both during the week and at weekends, but the magnitude of the change was greatest at the weekend. In Blackpool, reductions in violence against the person were observed between midnight and 3am both during the week and at the weekend but as in Croydon, reductions were greatest during the weekend. In Birmingham, there was a modest reduction in violence on weekday nights between 1am and 2am and between 2am and 3am but this was stronger during the weekends.

However, where there were increases in violence on weekday nights there was also a tendency for these to be greater at weekends reflecting the relatively high volume of incidents concentrated at the weekend. Around half of all violence against the person offences occurred during the weekend. In Blackpool, 56.2% of all such offences occurred at weekends. The post implementation period saw a marginal increase in these levels of concentration in most areas.

There were clear seasonal variations in changing levels of violence at weekends. For example, in Blackpool, post implementation increases in weekend violence tended to occur in the winter and early spring. It is encouraging that the post implementation period reductions in violence against the person in Blackpool occurred during the busy summer and autumn seasons. This may well be a reflection of the impact of the Licensing Act and any additional policing associated with its implementation.

Changes in the timing of overall violence against the person occurred to a greater extent in areas within close proximity of licensed premises. This finding was subject to a distance decay effect; that is, the further the distance from the main concentration of licensed

premises, the less pronounced the effect. There is a strong suggestion that many of these changes in the timing of offences are due to the licensing Act, but no causal relationship can be identified.

There was a considerable degree of concentration of violence against the person offences in a relatively small number of drinking establishments. In Guildford and Blackpool, the 15 premises with the highest crime accounted for between 65 per cent and 79 per cent of violence against the person offences.

Most licensed premises falling into the top 15 premises (i.e. the worst performing premises) for violence against the person offences within the baseline period, also occupied this position in the post implementation period. One of the intended outcomes of the Act was to give police the power to close down and introduce additional conditions to premises where incidents of violence and disorder were repeatedly reported. Although some premises in this top 15 were closed down for periods of time, it is suggested that as a number of premises remained in the top 15, that this aspect of the Act may not be operating effectively. However, it should be noted that this research uses incidents recorded inside or directly adjacent to premises. If a number of premises are in close proximity, it may be difficult to attribute incidents outside a cluster of premises to an individual premise.

In most areas, licensed premises falling into the top 15 used only half of the additional hours for which they applied. In all five case study areas, the concentration of violence increased among high crime licensed premises that *used* six or more additional hours per week but decreased amongst those open for five or fewer hours. This was not found when examining hours *applied for*. This demonstrates the importance of having accurate information on the actual used or operating hours of premises. It is also difficult to link crime by time of day and day of week at individual premises directly with that premises closing hours at the time of the incident, due to the current data structures.

A new technique of synthesis mapping (where the change over time between baseline and post-implementation hot spot maps is summarised on a single map) revealed that most of the reductions and increases in violence against the person corresponded with the location of licensed premises concentrated in the key drinking areas.

There was some evidence that violence against the person hot spots located within the key drinking areas of town/city centres remained visible later into the early night/early hours post implementation compared with the baseline period.

The location of criminal damage hot spots often did not correspond with the location of licensed premises and the key drinking areas.

A& E and ambulance data on violence

In Blackpool, Birmingham and Croydon, there were between two and three times as many police recorded violence against the person offences as ambulance or A&E recorded assaults. In Guildford, the number of violence against the person offences out numbered A&E department assault counts more than seven fold and a similar differential was identified between police and ambulance service data within Nottingham. This may be due to different recording mechanisms.

This is likely to be due to differences in the way violence as an offence is recorded by the police and assaults are logged by the A&E units and the ambulance service. The analyses of data from these sources involved selecting cases clearly labelled as ‘assaults’ In several areas there were a number of unclassified incidents and cases it was not always clear whether injuries were associated with violence or other causes.

The trajectory of assaults data from A&E and ambulance service sources was often the reverse to that of police recorded violence against the person offences. In Guildford, violence against the person rose by 10 per cent whilst assaults fell by 33 per cent. In Blackpool, violence against the person fell by 9 per cent whilst assaults increased by 18 per cent. Only in

Croydon and in Nottingham were the trajectories in the same direction. There are no obvious explanations here, and further research may be necessary to explore these trends.

Criminal damage

Criminal damage fell in every month of the post implementation period in Nottingham and in nine out of the 12 months in Blackpool. In Birmingham, it increased in eight of the 12 months and markedly so in June and October.

With the exception of Nottingham, there is no statistically significant change in criminal damage in the post implementation period. In Blackpool significant decreases in criminal damage in the baseline period were not sustained post implementation.

Criminal damage did reduce significantly throughout the post implementation period in Nottingham. This was preceded by a statistically significant increase in criminal damage in the baseline period. Thus in Nottingham, the Licensing Act coincided with significant reductions in criminal damage but did not do so anywhere else.

A distinctive feature of monthly changes in weekend and weekday criminal damage in several case study areas was the relatively large number of cases where criminal damage fell during weekdays whilst rising at weekends. Almost a third of all monthly change across the five case study sites fitted this pattern. For example, in Guildford this happened in seven out of the 12 post implementation months. It also happened in Croydon for six of the 12 post implementation months. In both areas, this occurred far more in the winter and spring than in the summer and autumn.

Changes in the timing of criminal damage overall, and on week at days and at weekends were marginal. Furthermore, the changes that were observed often took place at times of the day/night and in locations that one would not expect to be influenced by the changes in the operating hours of licensed premises.

Disorder calls for service

Apart from a significantly increase in disorder in Croydon in the latter half of the post implementation year, in the remaining case study areas there was either no significant change or significant reductions in calls for disorder compared with the baseline.

In Birmingham, significant reductions in disorder preceded the introduction of the Act and continued into the first half of the post implementation year. Overall disorder fell by one fifth in Birmingham between the baseline and post implementation period. In Croydon, significant reductions leading up to the Act were not sustained post implementation. In Blackpool and in Nottingham there was no significant change either during the baseline period or beyond.

Disorder calls for service overall (i.e. Monday through Sunday) generally peaked earlier in the evening than violence against the person offences. For example, in Blackpool they peaked between 9pm and 10pm and in Croydon and in Nottingham between 8.00pm and 8.59pm. This did not alter substantially between the baseline and post implementation period.

However, there were differences in the temporal distribution of disorder calls it once they were broken down into weekday and weekend calls. Weekend calls for disorder peaked later in the night and their temporal distribution and was not too dissimilar to those for violence against the person and criminal damage.

In the majority of areas there was very little change between the baseline and post implementation period in the timing of calls for disorder whether during the week or at the weekend. However, in Birmingham there was a sizeable reduction between 11pm and midnight and between 1am to 2am but the greatest decrease occurred between 2am and 3am at the weekends (three per cent fewer calls were received in this hourly period compared with the baseline).

Sexual offences

The relatively small number of sexual offences precluded any analyses being carried out in the same level of detail as for other offence types and incidents. However, at an aggregate level there were some changes between the baseline and post implementation period.

Nottingham registered the largest number of sexual offences (around 500 per annum) and the smallest change of all the case study areas; an increase of just 1.6% between the baseline and post implementation period. This was fairly much in line with its change in overall violence against the person (up 6.2%). Sexual offences were down by one fifth in Blackpool double its percentage fall in violence against the person. Guildford was the area with the greatest reduction in its number of sexual offences; a decrease of just over 25%, although numbers were very small.

Qualitative research

Interviews with those working with the night-time economy revealed that the majority of respondents either perceived there to be no change in levels of violence within their premises, or that there had been a reduction in levels of violence, following the introduction of the Act. There were no consistent views as to whether the time of offences had shifted.

Collectively, the findings from the quantitative and qualitative research inevitably lead to the conclusion that some of the early expectations voiced within the media regarding the potential harmful effects of the changes introduced by the Act were actually unfounded.

The main obstacle to being able to study the relationships between alcohol supply points and crime change is the lack of comprehensive consistent data not on the latter but on the former. There is an urgent need to for licensing authorities across the country to begin to collect comprehensive, detailed and time-stamped information regarding licensed premises under their jurisdiction.

Recommendations

A number of recommendations can be made from the experience of conducting this research. These are elaborated upon in some detail in the main body of the report. There were five recommendations in total which were as follows:

Recommendation 1

That the Home Office, in partnership with the licensing authorities, commission, within the next six months, a feasibility study into the design, implementation, maintenance and funding of a system for the capture of consistent, geographically-referenced data on licensed premises and other alcohol supply points including off-licences, restaurants, supermarkets and hotels.

Recommendation 2

That Licensing Authorities, in partnership with the police maintain a database of violence offences by premise name and location (address, full postcode and 12 figure grid reference) which includes the date and time of the offence, the name of the premise, and the premise closing hours at the time of the offence.

Recommendation 3

That Licensing Authorities, in partnership with the police, develop their own ‘Resource Targeting Tables’ to monitor closely the most prolific high crime licensed premises with a view to targeting enforcement action and crime prevention measures.

Recommendation 4

That the Home Office commission a feasibility study into the capture and maintenance of core data on policing and other policy interventions that potentially influence crime in public places and town centres. Such a database would need to record, as a minimum, the start and end dates of each initiative, its geographical location, the principal objectives of the intervention, principal beneficiaries, tactics, implementation timetable and level of resources provided.

Recommendation 5

That further research is conducted into the feasibility of deriving indicators of land use that can be incorporated as contextual variables in evaluation studies.

Acknowledgements

This research constitutes part of a number of studies commissioned to examine the impact of the Licensing Act 2003, both by the Home Office and the Department for Culture, Media and Sport. For a more detailed overview of the main findings from all strands of the evaluation, released March 2008, the reader is referred to the following.

DCMS Findings:
http://www.culture.gov.uk/Reference_library/Publications/archive_2008/evaluation_licensing_act_impact.htm
Evaluation of the Impact of the Licensing Act 2003, DCMS, March 2008.

Home Office Findings
http://www.homeoffice.gov.uk/rds/horrpubs.html
Home Office Research Report 04 - The impact of the Licensing Act 2003 on levels of crime and disorder: an evaluation.

This research focuses on analysis of the five case study areas.

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1. Introduction

The Applied Criminology Centre (University of Huddersfield) was commissioned by the Home Office to examine the impact of the Licensing Act (2003) upon crime and disorder in and around licensed premises. The Licensing Act (hereafter referred to as the Act) came into effect in November 2005 and was designed to make the night time economy a safer place. The rationale was that by abolishing fixed and artificially early closing times, binge drinking and the associated crime and health related problems would be reduced. It was also designed to make it easier for authorities to deal with problem premises, and to complement other measures within the criminal justice system designed to crack down on consumers and providers of alcohol who go beyond the boundaries of what is lawful or socially acceptable.

This research examined two time periods - a baseline (23rd November 2003 to 23rd November 2005) and a post implementation period (24th November 2005 to 24th November 2006). A mixture of quantitative and qualitative research methods were used to assess potential impacts of the Act at three scales, the macro level (entire study area), meso level (near to licensed premises) and micro level (at or inside licensed premises). Five case study areas were pre-selected for the analysis. The justification for the selection of these areas is provided in the methodology section of this report. The five areas were:

- Blackpool Unitary Authority (UA);
- Birmingham City Centre (police force area F1);
- Croydon Borough;
- Guildford Borough;
- Nottingham Unitary Authority (UA).

For each case study area a separate Annex has been produced. These detailed Annexes are supplemented by a technical annex as well as this final report. There is also a supplementary annex with some additional findings for all case study areas as a response to reviewer's comments.

Aims and objectives

The overall aims of the research were to provide a baseline indicator of levels of crime and disorder in and around licensed premises, and to examine the impact of the Act on this.

Research questions

The research questions addressed within this final report (and supplementary annexes) were:

- What patterns of crime and disorder exist in and around licensed premises?
- What other local factors may explain the prevalence of crime and disorder in and around licensed premises?
- Has the introduction of the Act, and the granting of additional opening hours to licensed premises, led to a change in violence and disorder at these licensed premises?
- Have overall levels of crime and disorder within town and city centres changed following the Act?
- Have the peaks of crime and disorder been displaced to later or earlier time periods?
- Has the profile of crime and disorder in and around licensed premises and associated hot spots changed in relation to venues with additional opening hours?
- Are there any unintended consequences such as a displacement of crime or a diffusion of benefits to surrounding areas?

The next section of the report discusses the literature on the nature of crime in the night time economy, including the link with alcohol, and examines the provisions of the Act and the debate surrounding its anticipated impact upon crime. This is followed by a description of the methodology and available data sets used in this research. Summaries are then presented of

the results from the qualitative and quantitative analyses and these are followed by a synthesis which weighs up the evidence and assesses what has been learned as a result of this study.

2. Literature review

Night-time economy

The problems of alcohol related violence and disorder in and around licensed premises is not a recent phenomenon, particularly around the closing time of pubs and nightclubs. However, changes to the night-time economy, in the make-up of towns and city centres, and changes in the nature of alcohol consumption have added a new dimension to this problem. Whereas previously the mass market was based upon local pubs and a male, manual, working class, the more recent trend has been towards a new source of mass market - a new generation of young drinkers aged 18-30, both male and female (Hobbs *et al.,* 2003). Possible explanations for these changes include the rapid expansion of the night time economy over the last quarter of a century, linked to public-private entrepreneurial partnerships as well and the decline of the manufacturing industry (Zukin, 1995, Hobbs *et al.,* 2003).

Numerous city councils have vigorously pursued a new urban 'branding', remodelling their city centres as places to live, work and be entertained. Central to this 'return to the centre' (O'Connor & Wynne, 1996) has been the role of the night-time economy. Previous regulatory mechanisms have been relaxed to encourage flows of corporate capital and provide the rapid growth of entertainment hubs. This has been the case even in the more deprived areas of the country where old industrial centres have also been transformed. The end result in many of Britain's towns and cities is a now familiar concentration of bars, clubs and high-volume pubs, targeting 18-30 year old drinkers. This sector is sizeable and highly lucrative. For example:

- The Department for Culture, Media and Sport statistics (Department for Culture, Media and Sport, 2004), suggest that there are 160,000 licensed premises, of which 113,400 are on license and 46,000 off license, in England and Wales.
- Night club admissions generate an annual turnover of around £2.5 billion (Mintel, 1998).
- Over 900,000 people rely on the brewing and pub sector for their employment (British Beer and Pub Association, 2006).
- The average turnover of a pub is £265,000, although busier, larger city centre units can have a turnover (similar to that of a large nightclub, of between one and three million pounds (Brewers and Licensed Retailers Association, 1998).

Alcohol and crime and disorder

Jowell *et al* (2005) highlight how in 2002/03, 1.2 million violent crime offences were alcohol-related, 44 per cent of all violent crime was linked to alcohol use, and one in five violent incidents could be expected to occur around pubs or clubs. This is supported by Hope (1986) and Lister *et al* (2000). Hope found that one quarter of police-attended incidents (including violence) in Newcastle-upon-Tyne city centre occurred within a 250 square metre area containing 12 pubs. This research also revealed that offences (including violence) peaked in the half hour following pub closing times (11.00pm) and this trend extended to follow the closing times of premises with later licensing hours. Lister *et al* found that 29 per cent of recorded violent incidents in Eastville occurred inside licensed premises, and 70 per cent of city centre violence occurred between 9.00pm and 3.00am.

The 2005/2006 British Crime Survey (Walker *et al.,* 2006) suggests that victims believed offenders to be under the influence of alcohol in 44 per cent of violent offences. This figure is approximately the same as that revealed in the 2004/05 British Crime Survey (48%). For stranger violence, the findings revealed that the victim judged the offender to be under the influence of alcohol in 54 per cent of incidents, a decrease from 60 per cent in the previous year. Walker *et al.* (2006) also revealed that offenders were judged to have been under the influence of alcohol in 57 per cent of woundings, 46 per cent of domestic violence incidents, 45 per cent of common assault offences, 44 per cent of acquaintance violence incidents, 24 per cent of robbery offences and 21 per cent of muggings. These findings are supported by Jeff and Saunders (1983), Shepherd and Brickley (1996) and Deehan *et al* (2002) who all

reported a link between assault and alcohol consumption. Jeff and Saunders found that 78 per cent of assault arrestees in one English resort town reported drinking alcohol in the four hours prior to arrest. This figure increased to 90 per cent between the hours of 10.00pm and 2.00am. Similarly, Deehan *et al* produced findings that 60 per cent of people arrested for assault at night in a city centre were intoxicated. Shepherd and Brickley's study suggested that the likelihood of involvement in assaults and the risk of injury from assault increase sharply when drinking more than eight or ten units of alcohol in one session.

Hall and Winlow (2005) suggest that even though official statistics and victim surveys severely underestimate the level of violence within UK towns and cities, these figures still suggest a rise of 100 assaults per year since 1997. Hall and Winlow (2005) highlight how local crime and disorder audits have revealed that night-time economies represent hot spots where over 75 per cent of street violence takes place.

Findings from the 2003 Offending, Crime and Justice Survey (Matthews and Richardson, 2005) also reveal a link between drinking to excess (binge drinking) and offending. The survey of 1669 18-24 year olds found that 44 per cent were identified as binge drinkers (they felt very drunk at least once a month). The findings suggest that binge drinkers are more likely than regular drinkers to commit an offence. Twenty seven per cent of binge drinkers admitted that they had committed an offence in the past twelve months; this is compared to just 13 per cent of other drinkers. Fourteen per cent of binge drinkers, compared to seven per cent of regular drinkers, had committed a violent crime within the previous twelve month period, and 13 per cent of binge drinkers, compared to just seven per cent of regular drinkers, had committed a theft within the previous twelve months. Although 18-24 year old binge drinkers only accounted for six per cent of the total adult sample, they committed 24 per cent of violent offences reported by that sample. In contrast, occasional/non-drinkers accounted for three per cent of the total sample and committed just three per cent of all offences (five per cent of violent offences). The research also found that 63 per cent of all young adult binge drinkers admitted to involvement in criminal or disorderly behaviour during or after drinking. This is compared to just 34 per cent of other young regular drinkers.

Data collated from Accident and Emergency (A&E) departments, and other health related agencies, also suggests that alcohol plays a major role in violent crime. Backhouse (1986) found that one in six cases presenting to the emergency services were thought to be alcohol-related. Wright and Kariya (1997) conducted research over a two month period in Paisley, Scotland. They found that 2.4 per cent of total A&E attendances were victims of assault, and that alcohol had been consumed by 69 per cent of victims. Evidence compiled from 163 A&E departments throughout England and Wales indicates that 90 per cent of facial injuries in pubs and bars, and 45 per cent of facial injuries in the street, were associated with alcohol consumption. The peak time for assaults coincided with the closing times of licensed premises (9.00pm to 3.00am), with Friday and Saturday nights the busiest times (Hutchinson et al., 1998). The reader is also referred to more recent findings by Shepherd[1] and Drummond et al (2003)

In Manchester, 75 per cent of post-midnight A&E attendees were under the influence of alcohol (Luke, 1998). Magennis *et al.* (1998) suggest that in 61 per cent of facial injuries in the UK, either the victim or the assailant had been drinking alcohol. Hutchinson *et al* (1998) found that 55 per cent of assaults (presented at 163 A&E departments) were related to alcohol consumption.

The government's Alcohol Harm Reduction Strategy (Cabinet Office, 2004) recognises (and supports the findings presented above) that the key areas in which alcohol causes harm are crime and health. This strategy estimates that the total annual cost of dealing with alcohol related harm is £20 billion, with £7.3 billion spent on the crime and disorder consequences of alcohol use. A study published by Alcohol Concern (2002) suggests that alcohol misuse is estimated to cost between two percent and five percent of the country's gross national product.

[1] See http://www.cardiff.ac.uk/dentistry/research/phacr/violence

The Licensing Act (2003)

The introduction of the Licensing Act (2003) in November 2005 signalled a major change to Britain's drinking laws. The key measures contained within the Act were[2]:

- Flexible opening hours for premises, with the potential for up to twenty-four hour opening, seven days a week, subject to consideration of the impact on local residents, businesses and the expert opinion of a range of agencies[3] which were designated as Responsible Authorities by the Act, in relation to the licensing objectives.
- The Act required each Licensing Authority to carry out its duties with a view to promoting the four main licensing objectives:
    1. The prevention of crime and disorder;
    2. Public safety;
    3. The prevention of public nuisance; and
    4. The protection of children from harm.
- A single, integrated scheme for licensing premises which sell alcohol, provide public entertainment or provide refreshment late at night based upon a 'premises license'. This brought together the existing regimes, and saw the end of the current system based upon Public Entertainment Licenses (for premises that provided entertainment to the public); Late Night Refreshment Licenses (for premises that were open for refreshment and entertainment between 10.00pm. and 5.00am); and Special Hours Certificates (for premises staying open later than normal licensing hours. These were ancillary to Public Entertainment Licenses);
- A personal license system required by licensees, which will facilitate greater mobility for holders to move between premises possessing a premises license.

Whilst concerns have been raised regarding the impact of these changes upon crime and disorder: "Booze to blame as 999 calls rise 100%" (Stallwood, 2006); "Is this your café culture Tessa?" (Craven, 2006); it is argued by the government that the increased freedom and flexibility (which has been the subject of much of the concern) has been balanced with new powers to deal with businesses which fail to comply with the new licensing laws (Jowell *et al.,* 2005). Additional measures introduced by the Act include an expansion of police powers to close areas or particular premises, providing a new mechanism to review licenses when problems relating to the four licensing objectives arise, and introducing new offences relating to the sale of alcohol to children.

Figures published by the Department for Culture, Media and Sport (*Licensing Key Facts,* 2006) suggest that around 200,000 premise licenses/certificates are in force and that 3,000 of these are 24 hour licenses. Of the 24 hour licenses in force, 25 per cent are for large supermarkets, 20 per cent pubs, bars and clubs, 20 per cent other convenience stores and 35 per cent other premise types. These figures suggest that approximately one fifth of pubs, bars and clubs close by 11.00pm at the latest, and roughly half by midnight. Before the introduction of flexible opening hours, approximately 80 per cent of pubs, bars and clubs had licenses until 11.00pm. Of the remainder, 15 per cent opened until 2.00am. These findings, which are based upon an electronic survey of Licensing Authorities in England and Wales (28 per cent response rate), suggest that there have only been modest changes to closing times between Sunday and Thursday since the introduction of the Act.

The impact of the Act on crime and disorder

Whilst the media have raised many concerns regarding the impact of extended licensing hours upon levels of crime and disorder, without a comprehensive, independent examination of the impact of these measures, these concerns have remained speculative.

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[2] http://www.culture.gov.uk/what_we_do/Alcohol_entertainment

[3] Interviews with responsible authorities included representatives from the Licensing Authority, Environmental Health, Trading Standards, the CDRP, Planning, Town Centre Management, the Drugs and Alcohol Team, the Fire Service, and the Police Licensing Officer

Research which suggests that an extension of licensing hours will have a negative impact upon crime, disorder and health-related problems is reviewed below. Rush *et al* (1986) suggest that the availability of alcohol is associated with increased use, which is in turn related to increased alcohol related injury and illness. Goodacre (2005) suggests that increasing the availability of alcohol appears to be counter productive and will exacerbate the already serious problem of alcohol related illness and deaths. However, the author acknowledged that some of the predicted problems could be avoided if the views of emergency clinicians are considered when licensing decisions are made. Research conducted by Olsson and Wikstrom (1982), Edwards *et al* (1994) and Chikritzhs and Stockwell (2002) also suggests that extended licensing hours are associated with increased violence, alcohol consumption and admittance to A&E departments. In an occasional paper published prior to the introduction of the Act, The Institute of Alcohol Studies (2005) warned that: "There is no convincing evidence that extended drinking hours or staggering closing will reduce binge drinking or drunkenness" (The Institute of Alcohol Studies, 2005 p.1). In a post script published in 2007 (The Institute of Alcohol Studies, 2007), they conclude that: "It seems that the cataclysm forecast in some of the more lurid newspaper headlines did not take place. On the other hand, there is little evidence to suggest that the Act is achieving its stated objectives of bringing about reduced 'binge drinking', crime, and disorder" (The Institute of Alcohol Studies, 2007 p28).

In contrast, the government (Department for Culture, Media and Sport, undated) suggests that abolishing fixed and artificially early closing times will reduce binge drinking and stagger the numbers of young people exiting licensed premises, therefore reducing difficulties for local police. One year after the introduction of the Act, Licensing Minister Shaun Woodward claimed that: although too early to assess the exact impact of the change in licensing hours upon crime and disorder, there are "encouraging signs that the new laws are working" (Department for Culture, Media and Sport, 2006). Woodward states that: "There appears to be a genuine spread of closing times, bringing an end to the old madness of everyone being thrown out onto the street at the same time" (Department for Culture, Media and Sport, 2006). This view is supported by research published by Bellis *et al* (2006), which assessed A&E attendances in Wirral (UK). They found that there was a statistically significant reduction in the number of assault attendances per day during the post implementation weeks in 2005/2006 compared with the same period in other years, yet there was no statistically significant change in the weeks for which the Act was not being implemented. Unfortunately, the period for which the Act was being implemented also coincided with the implementation of Home Office Alcohol Misuse Enforcement Campaign (AMEC) (a period of 18 weeks overlap) leaving "too small a period covered exclusively by only AMEC or licensing changes …to distinguish effects of the two interventions" (Bellis *et al.,* 2006 p.4). The study concludes that both interventions have each achieved a 15 per cent reduction in assault attendances at A&E. This is equivalent to 160 fewer assault attendances per year. What is not clear from this research is whether individually or combined AMEC, the Act, or other influences were responsible for these reductions. Further support is provided by the recent findings of Shepherd[3].

An alternative view, shared by OPCS (1986) and Graham *et al* (1998), is that altering licensing hours either has very little impact upon alcohol related attendances at A&E departments and alcohol related crime and disorder, or that the pattern is unclear.

It is the aim of the current research (presented as part of this project) to establish what impact the Act has had upon crime and disorder, focussing on areas in and around licensed premises. Existing research, including that presented in the British Crime Survey 2005/2006 (Walker *et al.,* 2006) suggests that the trend for each relevant crime category shows little change over this period (although seasonal variations do occur with peaks in December and the summer months). The research suggests that, since the introduction of the Act, the proportions of offences occurring between 11.00pm and 2.00am have remained consistent with the same months from the previous year. Walker *et al* (2006) go as far as to assert that: "The data show no indication of a rise in the overall level of offences or a shift in the timing of offences as a result of the change in the opening hours of licensed premises" (Walker *et al.* 2006 p. 77). Although the issue of measurement and recording of data will be discussed in more detail later in this report (in relation to the findings presented in this research), it should

be noted that many of the differing views relating to the impact of alcohol on violence, crime and disorder can be explained by variations in the quality of the data used. Research presented by the Portman Group (The Portman Group, 2002) highlights how there are no precise means of estimating the real impact that alcohol has upon crime and anti-social behaviour. In their survey, participants were deeply divided in their views concerning the extent to which alcohol could be linked to violent crime and anti-social behaviour. Assessments of the link, according to the authors, were likely to be inflated where recording systems were weakest. The study revealed that only ten per cent of police licensing officers were able to provide an estimate of the extent to which crime and disorder is related to alcohol. Of those who did provide an estimate, responses varied from 30 per cent to 85 per cent.

Research suggests that there is a link between alcohol consumption and involvement in violence. This is demonstrated in the extensive research presented above. This report will discuss in more detail the likelihood that the Act has reduced violent crime, criminal damage and anti-social disorder. What is clear, however, is that the consumption of alcohol is not inevitably associated with involvement in violence or anti-social behaviour. Research has demonstrated that interventions to alter the physical environment of licensed premises (Ramsay, 1982; Deehan, 1999; Raistrick *et al.,* 1999; Homel *et al.,* 2001), to improve the social environment through measures such as serving food[4], discouraging drinking to intoxication, maintaining venues and communicating levels of tolerance (Homel *et al.,* 2001) and to remove pressure points outside of venues (Marsh and Fox-Kibby, 1992) can all reduce the risk of violence associated with alcohol consumption.

[4] Note the recent findings by Cragg Ross Dawson commissioned at the same time as this research suggesting often premises are not serving food at night

3. Methodology

As was referred to within the introduction, the range of research questions to be answered as part of this project, require the application of a number of quantitative and qualitative methodologies. The main focus of the study concerns the quantitative impact of the new legislative regime on crime and disorder around licensed premises. This is essentially an outcome question of the 'did it work?' variety. It is worth here discussing some methodological approaches which could be used to address such a question, and the approach adopted in the current study.

Research designs

The Home Office/RDS guidelines for research standards provide an overview of the main research methodologies which could be used to assess outcome questions such as those relevant to the current research. There are a number of quantitative methods which might be employed to assess impact, although not all are applicable to an area-based assessment of this type.[5] Only the first of these is entirely experimental in the sense that it can, if successfully conducted, control for all potential threats to validity such as maturation and selection effects. The remainder are quasi-experimental. In decreasing order of validity these are:

- Randomised Control Trial (RCT)
- Matched pairs
- Longitudinal status comparisons

These are described in more detail in the technical annex. The first approach allocates offenders or places at random either to the intervention/policy area or to a control group/control area who will either receive a different intervention/policy or treatment as usual. It is evident that a RCT is not a viable approach here as the Act is a new piece of legislation that affects the entire jurisdiction and at the same time; thus control groups and areas can not be constructed. In other words, the strongest methodological approach to determining causality of an intervention (in this case legislation) on an outcome was not available to the research team.

The second technique matches people (or areas) exposed to an intervention with those people (or areas) receiving no intervention or some other intervention. The robustness of this approach is dependent upon the closeness of the matching. For this research it had been hoped to match prospectively premises of a similar type which applied for and received extended hours with those premises that did not. However, for reasons detailed in the technical annex, this was not feasible. One of the major difficulties was in obtaining information on trading hours before the introduction of the Act. It was difficult to identify the actual opening and closing times of premises which, as found by the local fieldwork, did not always reflect the hours granted on the license (premises may close early if it is quite for example). Additionally, a number of premises did apply for additional hours, thus the more traditional hours from the baseline period were not representative of the post implementation period.

Longitudinal status comparisons involve an assessment of an individual or area's change over time and making inferences based on the timing of the intervention and changes in outcome measures as to the likely impact of the intervention. The single group longitudinal comparison is the closest research design to the one used in the current study, as changes in outcomes such as crime and disorder are assessed in relation to the introduction of the Act. As noted previously, the national implementation of the policy precluded the possibility of using a comparison group, and this meant that the design was unable to rule out with adequate certainty other threats to validity (see further next section).

[5] Only those with possible relevance to this type of evaluation are discussed here. Hypothetical comparison groups, for example, are not discussed.

For this research it was not possible to identify a comparison area. This effectively constrained the methodological options open, and as a result of this, there are a number of potential errors that may arise when interpreting the results. For example, changes to crime and disorder may be due to factors other than the introduction of the legislation. The two main threats to validity which any research of this type faces are history and regression to the mean

The first effect is caused when some event, which is *not* the intervention of interest (for example increased police numbers), occurs at the same time as the intervention/policy of interest and influences the outcome measure (for example the crime rate). There are numerous other factors which could influence crime rates and which may have occurred during the period under study. These could include economic and social factors, other policing initiatives, sporting events and even the weather. These may operate at a local and or the national level. The second potential error is a statistical phenomenon whereby extreme scores tend to return to the mean over time, even if there is no intervention. In other words, left alone, things tend to return to normal.

The fact that threats to validity exist, does not, however, mean that they are inevitable. For this research, two approaches have been adopted to try to minimise the likelihood of errors. The first is to adopt a multi-level approach to the quantitative analysis by examining change at three scales; the micro level, the macro level, and the meso level. The second is to supplement the quantitative analysis with detailed qualitative analysis. This adds further contextual information on conditions in each of the five case study areas and helps to identify alternative explanations for the results, and the likelihood of these occurring.

Scale of analysis

The quantitative analysis used in this research examines crime and disorder over the baseline and post implementation periods at three geographical scales. These were:

- The macro level (aggregated data for the entire case study area).
- The meso level (aggregated data near to licensed premises).
- The micro level (data aggregated to inside or directly outside licensed premises).

It should be noted that while there are advantages to using this three pronged geographical approach, some care should be taken in interpreting findings. Two potential errors of note are the Modifiable Areal Unit Problem (MAUP) and the ecological correction. These are discussed in the technical annex. The former relates to how the process of altering the unit area of analysis may produce differing analysis findings when considering the same area. The latter is where the reason to explain patterns/relationships may actually be different at different geographical scales of analysis.

Timescale

This research examined two time periods, a two year baseline period before the introduction of the Act (23rd November 2003 to 23rd November 2005) and a post implementation period (24th November 2005 to 24th November 2006). This enabled a two year baseline and a full twelve months of post implementation data to be examined.

Case study areas

This research examined five case study areas. These were prescribed by the commissioning body for reasons discussed earlier. These areas have different characteristics and represent different areas of the country. The findings for each case study area are detailed in a supplementary annex for each area. The five areas chosen were:

- Blackpool Unitary Authority (UA);
- Birmingham City Centre (police force area F1);

- Croydon Borough;
- Guildford Borough;
- Nottingham Unitary Authority (UA).

The commissioning body selected these areas for a number of reasons. Firstly, areas were selected that spanned the broad profile of violent crime in England, taking different measures of violent crime into account and based on discussions with senior officers in police forces. All of these measures indicate that the nature and intensity of violent crime significantly differ between the chosen areas.

The selection of case study areas also provided a good mix of urban/rural area types when compared against ONS classifications of local authority districts: two cities, two smaller towns (one market town surrounded by a significantly rural population and one seasonal sea-side resort), and one London borough. A decision was made not to select any areas that were primarily rural based on Department for Environment Food and Rural Affairs (DEFRA) classifications to avoid to undertaking focused case study work in sparsely populated rural areas, where the volume of crime data is low and it is unlikely any discernible effect on crime levels would be detected.

The final basis for choosing areas were those prepared to be involved with the evaluation and provide the crime and disorder data on a monthly basis between 2004 and 2006.

Quantitative analysis

A number of analytical techniques were employed in this research, and these are detailed in the technical annex. Some of the main methods used were;

- Calculating monthly and yearly crime and disorder counts and rates and percentage change
- Statistical significance testing of baseline and post implementation crime counts
- Analysing crime and disorder by time of day and day of week
- Analysing crime and disorder by weekday and weekend
- Analysis of domestic violence and alcohol flags
- Analysing the age and gender of victims
- Buffer zone analysis of areas proximate to licensed premises and cluster analysis to examine the cumulative impact of areas with high densities of licensed premises;
- Nearest Neighbour Hierarchical Clustering (NNHC) analysis and Kernel Density Estimate (KDE) analysis (hot spot mapping)
- Synthesis maps of hot spot change
- Proportional change analysis of crime and disorder
- GIS analysis to test for evidence of spatial and temporal changes in crime and disorder
- Crime and disorder ratio analysis
- Constructing Resource Targeting Tables (RTTs) of violence against the person offences at licensed premises
- Analysis of A&E and ambulance call out data.

It is important to highlight that the NNHC hot spot technique does have its limitations and these are discussed in the technical analysis. It is sensitive to some parameter settings, and may fail to represent actual spatial distributions of data (clusters of bars and crime do not naturally form ellipses). However its purpose is to identify areas where there are clusters of premises within which crime can be measured. An alternative for future research may be to use the Gi* statistic (see technical annex). However, although this can identify spatial significance it does not identify spatially significant change.

An additional issue that is worthy of note here is that the time of day analysis in this research uses the ‘from time’ field only. Temporal analysis of some types of crime data (where the actual time of the offence may not be known, for example burglary or criminal damage) may

requires a weighted (also referred to as an aoristic) approach to the time of day analysis. However for this research, preliminary analysis suggested that as the time fields were grouped into one hour intervals this would not be necessary. It was found that the' from time' and 'to time' fields were either in the same hour (or the 'from time' field was not recorded) in over 70% of records. A further 10% of records were accounted for within an additional hour. Thus weighted temporal analysis was deemed not necessary. This is discussed further in the technical annex.

Data

Several data sources were used for the quantitative analysis, including:

- Police recorded crime data (offence data);
- Police calls for service data (disorder incidents);
- Licensed premises data;
- A&E data;
- Ambulance data;
- Ordnance Survey AddressPoint®;
- Ordnance Survey 1:10 000 scale raster;
- UK Borders digital boundaries;
- Office for National Statistics (ONS) mid-2005 population estimates[6];
- ACORN 2006 population estimates[7].
- Penalty Notices of Disorder (PNDs) [7].

Unfortunately, it became clear over the course of the research that initial expectations regarding the quality and timeliness of the data were not to be met, and this had an impact on the nature of the analysis that could be conducted. More detail on the limitations of the data and the impacts this had on the analysis are provided in the technical annex. One of the major limitations was obtaining information on both the current (post implementation) and former (baseline) opening hours of licensed premises. This, coupled with the Act being a new piece of legislation, and the inability to construct control areas for this research, made this research extremely challenging.

Although the quantitative analyses specified above can provide a detailed picture of levels of crime and disorder in and around licensed premises, additional contextual information can not be revealed using this approach alone. There are a number of additional factors that may influence levels of crime and disorder within towns and city centres. Therefore, additional qualitative analysis was incorporated into this research.

Qualitative analysis

Fieldwork was undertaken at all five case study areas during three phases.

- Phase One: November 2005 (baseline period)
- Phase Two: January to March 2006 (approximately two months into the post implementation period)
- Phase Three: January 2007 (approximately twelve months into the post implementation period).

There were two methodologies employed during this fieldwork:

- Participant observation (phases one to three).
- Semi-structured interviews (phases two and three only).

[6] See technical annex for a discussion of population estimates used. These represent the most up to data sources in each case study area, based on the boundary of the study area.
[7] Whilst these were not used for this research, it is suggested they should be incorporated in future analysis. References for these are provided in the technical annex

The sampling framework for selecting premises for each phase is detailed in the technical annex. For each case study area, there were interviewees (door supervisors, licensees and bar staff) from up to 15 premises.

Prior to the interviews and participant observation taking place, both the Home Office and local Police Licensing Officers were provided with details of the premises being visited, the names and contact details of fieldworkers and the dates when fieldwork would be taking place. Fieldworkers were also given contact details of the local police as well as letters from the Home Office (on headed paper) to confirm the legitimacy of the research.

Fieldworkers followed a standard interview schedule for either door or bar staff and a participant observation schedule (see technical annex). Where possible, interviews were taped and transcribed. Although participants were given the opportunity to provide their name, they were assured that this was not a requirement and that, if they did provide a name, this would not be used to identify comments they made in any of our reports.

There were a number of difficulties in arranging and conducting interviews and these are described in more detail in the technical annex. Problems included premises changing their name (from the name provided in the sampling framework), premises closing down, staff having little or no spare time, refusal to take part and difficulties contacting potential participants.

Completeness, timeliness and quality of the data

In any study, the ability to meet the aims of the research is dependent upon the quality and timeliness of the data. There were a number of obstacles faced during this research, and these are now discussed briefly.

Licensed premise data

One of the major difficulties for this research was gathering information on both baseline and post implementation opening hours of licensed premises. Originally, it was hoped to conduct a 'matched pairs' analysis, but as it was not possible to obtain the necessary data within the time frame available, this approach was ruled out. The primary reason for baseline hours not being provided was the transition of responsibilities for licensing from the Magistrates and Police to Local Authorities, and the change in systems from Innkeeper (maintained by the police) to new systems (operated by Local Authority). There was no comprehensive database maintained by magistrates. In addition, the backlog of data to be entered onto the new system, caused by the large volume of applications over a short period of time, created delays in information on post implementation hours being provided. Information on hours *granted* (not necessarily those *used*) were obtained for all five case study areas, but required considerable processing before any analysis was possible.

Moreover, to determine whether there had been any change in a premise's opening hours, it was necessary to capture information not only for previous hours, but also for *applied for* and *used hours*, and again this information was incomplete. This has implications for the validity of the research. Quite apart from the difficulties of attributing causality to changes in crime rates is the issue of whether the variable of interest (licensing hours) actually changed. For example, how many pubs opened for an extra hour; where were they? If there was not much practical change in opening hours during the period, then (other things being equal) one would not expect to see much change in the outcome measures. It goes without saying that it is essential for this research to know whether the policy has been implemented as planned. With no routinely provided information on the changes in opening hours of the premises in the five areas, it was not possible to say whether this had occurred. This means that the conclusions from any other analyses (e.g. temporal changes in crime) are weakened, as one cannot conclude that changes in outcomes are due to the introduction of the Act. As a result of this two approaches were used to estimate the change in hours of operation. The first was to collect data on *used* hours at a sample of premises, and the second was to estimate the

change in hours (this was calculated as the difference between 'traditional' former hours of 11.00am to 11.00pm closing for pubs and 2.00am closing for night-clubs, and hours granted post implementation.) Although there are limitations to this approach discussed further in the technical annex, this does give two alternative measures of additional hours that can be compared with the time and location stamped crime and disorder data.

Such was the problem of missing data that efforts were made to collect information on both baseline and post implementation *hours used (*ie the hours a premise was usually open for, as it was evident premises did not always use all their hours granted) for the 15 premises in each area with the highest rates of violence against the person offences, so that comparisons between changes in hours and outcomes such as crime for this minority of premises could be made. This information, collected by means of interview, meant that additional analyses were possible for the top 15 premises in each area. It was not practicable within the timeframe to retrieve such information for all premises in the five case study areas.

Feature flags

An additional difficulty in this research was in the use of feature 'flags' to indicate the presence of alcohol or domestic violence in an offence (see technical annex). After discussion with each of the police forces in the five case study areas, it was apparent that the use of these flags was not consistent across the five case study areas. This is reflected in the findings for example, seven per cent of all violence against the person offences in Birmingham were recorded with an alcohol flag, whereas in Blackpool and Nottingham this figure was over 40 per cent. This demonstrates the difficulties in making comparisons between case study areas when the quality and coverage of data varies markedly. These differences are more likely to be explained by inconsistent data than by a genuine difference in the levels of alcohol related violence between the sites. There was also a large amount of missing data in relation to the gender of victims. This limited the inferences which could be made from some of the analyses in the report. As a result of this, and the difficulties of associating violence and disorder with alcohol (it is a subjective view as to whether alcohol was involved), one of the indicators used for this research was time and location stamped recorded crime data as an indicator of alcohol and night-time economy crime and disorder. Such problems with data accuracy have long been noted. The report *Counting the Cost* (Portman Group, 2002) found that there was considerable variation in both the definition and recording of alcohol-related violence, with the result that fewer than ten per cent of police forces were able to compare their data directly with those collated by other forces.

A&E data and ambulance call out data

The A&E data and the ambulance data was used to supplement the violence against the person analysis, as it provided further information on assaults. One of the disadvantages of using police recorded crime data is the extent of under-reporting of crime to the police and this is well documented (Walker et al 2006). Additionally increased police activity in an area may impact upon recorded crime statistics, as it may lead to an increase in offences as more crimes are detected. Conversely, the presence of additional police may deter potential offenders and actually reduce crime. The use of this data enables an assessment to be made of overall levels of alcohol-related attendances (e.g. alcohol poisoning etc) and whether there was any change following the introduction of the Licensing Act. One of the advantages of using this 'health' data is that violence against the person (particularly more serious offences) may be reflected here. Combining health and crime data on violence and assaults in this way increases the robustness of the findings.

Data was requested by the commissioning body from one hospital A&E department per case study area. The hospital selected (if there was more than one) was the one that was most likely to receive attendances/admissions from the city centre. Data was requested for attendances on weekend nights (defined as 10.00pm Friday to 5.00am Saturday and 10.00pm Saturday to 5.00am Sunday), for those people aged between 17 and 35 years, for all presenting symptoms. It was decided to limit to data collection to these specific days, times and ages following a discussion of the commissioning body with Professor Jonathan

Shepherd, who assured the commissioning body that these factors would provide a good proxy measure of alcohol-related attendances.

Data was requested for all presenting symptoms as Prof. Shepherd highlighted that all A&E departments have slightly different recording systems and not all departments routinely record whether the patient was drunk/had consumed alcohol prior to attending or whether an injury was the result of an assault or an accident. The following data was requested:

- Age of patient
- Sex of patient
- Date of attendance
- Time of attendance

Additionally, it was requested that attendances related to assault were flagged (if this was possible given the individual recording systems).

Ambulance data were requested from one ambulance station per case study area. The station selected (if there was more than one) was the one that was most likely to receive call-outs from the city centre. The requested data was for call-outs on weekend nights (defined as above), for those people aged between 17 and 35 years, for all presenting symptoms. The rationale for this is the same as the A&E data.

A summary of the classifications of incidents provided for each case study area are provided in the technical annex.

Problems with A&E data were more severe than with licensed premise data, such that comparability of data across A&E departments was very restricted. The overall conclusion of that report was that data recording practices were quite inadequate to enable the nature and scale of alcohol related violence and disorder to be assessed with any degree of accuracy. It is disappointing that these basic data quality issues have yet to be addressed given that five years have elapsed since they were pointed out.

Land use data

The five case study areas were selected for analyses because they represent town and city centres with an abundance of licensed establishments. The land use in these areas comprises mainly of commercial, leisure and retail outlets. Given this, area profiles based on the characteristics of the residential population would be inappropriate and misleading. Socio-demographic profiles only make sense in areas with a sizeable residential population. Since the case study areas selected were town centres and not residential suburbs these profiles would not be helpful.

Although there is an abundance of residential neighbourhood classifications, such as ACORN that is used in the British Crime Survey, no equivalent classification exists for non residential areas. There is a clear need for such a classification to be developed, especially to inform studies that seek to identify and explain changes in crime in areas associated with the night-time economy. If such a classification were available for the whole country this would complement existing residential neighbourhood typologies commonly referred to as Geodemographic classifications.

In the absence of a non residential land use classification, individual components of relevant land use would have to be selected and captured within a GIS. The most relevant would have been alcohol supply points other than pubs and clubs (restaurants, off licenses, supermarkets), major transport routes, taxi ranks and late night shops/ fast food outlets. Given the difficulties in just being able to capture data on pubs and clubs, extending the analysis to capture land use components was deemed infeasible.

In the present study some idea of land use is provided by data derived from the GIS analysis on the density of pubs and nightclubs found in demarcated town centres. Density in this sense is represented by the inter-pub distances expressed in metres in areas of concentrated drinking. These are compared with pub densities in areas outside of the main pub clusters in

each of the case study areas. The ratio between the two (i.e. the average distance between pubs in the main drinking circuits divided that between pubs in the rest of the town) gives some idea of the greater concentration of establishments in the main areas of interest.

A note on AMEC and TVCP

Alcohol Misuse Enforcement Campaigns (AMECs)[8] involve short (typically eight week) police-led operations to tackle alcohol-related crime and disorder. AMEC was spearheaded by the Home Office Police and Crime Strategy Unit (PCSU) and the Association of Chief Police Officers (ACPO) and was designed to send a clear message that alcohol-related violence or underage sales/drinking would not be tolerated. The first campaign involved 92 of the 255 Basic Command Units (BCUs) across the country, and 46 trading standards departments, focusing energies and activities around weekends and bank holidays – the busiest time for alcohol-related offences. These were ongoing during the time period analysed.

Furthermore, in some of the case study areas, including Nottingham, the Tackling Violent Crime Programmes (TVCP[9]) were in operation. The timing of both AMECs and TVCPs are highlighted in the individual case study annexes.

[8] http://police.homeoffice.gov.uk/operational-policing/crime-disorder/alcohol-misuse
[9] http://www.crime-reduction.gov.uk/tvcp/tvcp03.htm and http://www.crime-reduction.gov.uk/tvcp/tvcp04.htm

4. Summary of findings from quantitative analysis

This section of the report summarises the main findings from the analysis of the crime and disorder data. A more detailed analysis of each case study area is provided in the five supplementary annexes. The research findings are broken down into the following categories: violence against the person (including recorded crime data, A&E data and ambulance data); criminal damage; sexual offences, and; disorder. The findings largely focus upon violence against the person, because the data supplied enable a greater range of analytical techniques to be applied than to criminal damage, sexual offences, or calls for service. More detailed explanations of the analysis methods are provided in the technical annex. This balance is also reflected in the annexes produced for the five case study areas.

Violence against the person

Offences were examined by year, month, day of week, and time of day, across the entire case study area. Both crime frequencies and crime rates (per 10,000 persons were examined).

Annual distribution of offences

Table 4.1 shows the annual change in violence against the person offences. This shows that overall the annual change (average baseline to post implementation periods) was an increase in three areas (Nottingham, Birmingham and Guildford) of between 200 and 250 offences, and reductions in Blackpool and Croydon (approximately 500 offences and 1000 offences respectively). When pooling all five case study areas, it can be seen that there was a reduction in all violence against the person offences across all five case study areas of 2.8% (-748 offences). Differences between weekend and weekday offences are discussed later in this section.

Monthly distribution of offences

Table 4.2 displays the monthly percentage changes in violence against the person offences in the post implementation period compared to the average baseline period. There was no evidence in any of the five areas examined of sustained increases in violence against the person offences. However in Guildford the only monthly reductions were in January and February and these were fairly small. Two of the areas (Blackpool and Croydon) experienced over eight monthly reductions that were greater than ten per cent. Guildford was the only area with more than six (non consecutive) monthly increases above 20 per cent. When examining monthly change across all five case study areas for the whole period of analysis, 50 per cent of the months examined experienced increases, and 50 per cent experienced decreases in offences. For the whole period of analysis the only individual month with a consistent direction of change across all five case study areas was January, and in Birmingham and Blackpool this was less than one per cent.

Table 4.1 Violence against the person annual offences counts by case study area (all time periods, weekday and weekend offences)

Birmingham			
	Average Baseline	Post Implementation	% Change
Weekend	1590 **(43.6%)**	1739 **(44.7%)**	9.4
Weekday	2049	2145	4.7
All	3639	3884	6.7
Blackpool			
	Average Baseline	Post Implementation	% Change
Weekend	3070 **(54.4%)**	2868 **(56.2%)**	-6.6
Weekday	2567	2230	-13.1
All	5637	5098	-9.6
Croydon			
	Average Baseline	Post Implementation	% Change
Weekend	3145 **(46.7%)**	2637 **(45.3%)**	-16.2
Weekday	3578	3184	-11.0
All	6723	5821	-13.4
Guildford			
	Average Baseline	Post Implementation	% Change
Weekend	932 **(53.6%)**	1033 **(53.3%)**	10.8
Weekday	804	903	12.3
All	1736	1936	11.5
Nottingham			
	Average Baseline	Post Implementation	% Change
Weekend	4571 **(50.7%)**	4872 **(52.6%)**	6.6
Weekday	4435	4382	-1.2
All	9006	9254	2.8
All Five Areas (Pooled)			
	Average Baseline	Post Implementation	% Change
Weekend	13,308 **(49.7%)**	13,149 **(50.5%)**	-1.2
Weekday	13,433	12,844	-4.4
All	26,741	25,993	-2.8

Notes: Figure in bold brackets is the percentage of all offences occurring at weekends

Table 4.2 Percentage change* in monthly violence against the person offences

	Birmingham	Blackpool	Croydon	Guildford	Nottingham
December	9.8	-18.9	-14.6	31.4	-16
January	-0.9	-0.5	-20.1	-4.6	-7.5
February	8.8	-3.7	-16.9	-3.2	-11.1
March	7	13.4	-14.3	24.6	-0.6
April	12.2	-16.7	-12.2	21.3	3.3
May	28.0	-20.7	-20.9	6.7	10.1
June	22.5	-12.4	0.4	23.4	18.2
July	-1.3	-11.7	-6.9	10.9	4.6
August	9.5	-10	-11.5	23.1	8.7
September	-8.7	-18	-22.4	5.4	5.5
October	0.7	-13.5	-24.3	1.9	10.9
November	-2.9	5.1	3.3	7.1	8.4

* Percentage change is based on average monthly baseline figures (2004/2005)

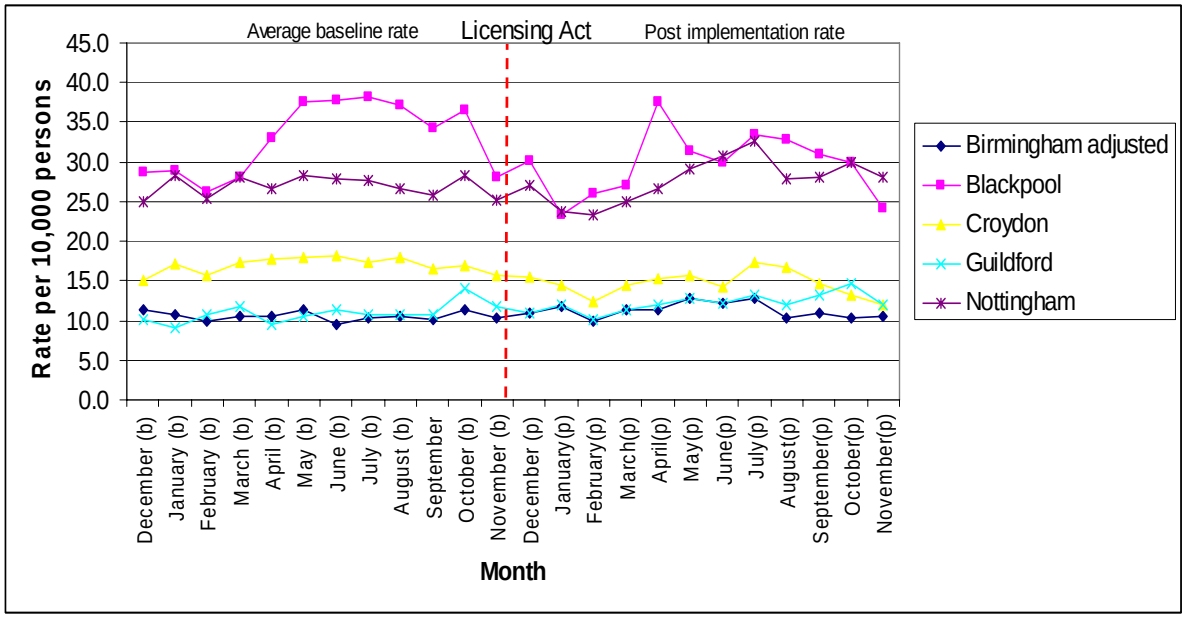
10 to 20% increase
> 20% increase
10 to 20% decrease
> 20% decrease

Offence rates

Rates for violence against the person offences were produced for all areas (Figure 4.1) as a rate per 10,000 persons. For visual comparison only, the Birmingham rate was reduced by a factor of ten. It is difficult to compare the Birmingham rate as it relates to the city centre only (Police force F1) unlike other case study areas that equate with Local Authority and Unitary Authority areas. Thus, the population denominators used here are from different sources (see discussion in the technical annex).

The key observations from this analysis were that on the whole, offences followed national trends due to seasonal fluctuations, with increases seen in the summer months (Hird and Ruparel, 2007). These trends were less pronounced than expected. One reason for this could be due to the inclusion of all violence against the person codes (see technical annex). Nottingham and Blackpool had the highest rates and appeared to follow similar trends. Guildford and Croydon appeared to have similar rates of violence against the person. It should be highlighted that care needs to be taken when interpreting the Birmingham rate due to this being adjusted to address concerns over the population estimate for the city centre.

Figure 4.1 Violence against the person offence rates (average baseline and post implementation)



Statistical analysis of changes (baseline and post implementation periods)

Further analyses were carried out using independent t tests to establish any significant year on year differences in levels of violence against the person in each case study area, and to look at trends over the three years. Independent tests were used as it is argued there is no basis for the first half of one year's offences to influence offences in the first half of a subsequent year. This was done by comparing the weekly distribution of six month's worth of violence against the person data with that for the equivalent period in the previous year. The decision to split each year into two 26 week periods was made in order to add sensitivity to the analysis, and as full year comparisons may mask change due to internal seasonal fluctuations. Thus six half-yearly periods were constructed each containing 26 weeks of violence against the person data. These were defined as follows:

- Baseline (Year 1 A) = 23rd November 2003 to 23rd May 2004
- Baseline (Year 1 B) = 24th May 2004 to 23rd November 2004
- Baseline (Year 2 A) = 23rd November 2004 to 23rd May 2005
- Baseline (Year 2 B) = 24th May 2005 to 23rd November 2005
- Post Implementation (Year 3 A) = 23rd November 2005 to 23rd May 2006
- Post Implementation (Year 3 B) = 24th May 2006 to 23rd November 2006

Four of these covered the baseline period prior to implementation of the Act (1A, 1B, 2A and 2B) and two of them fell into the post implementation period (3A and 3B). A total of 20 t tests, four for each case study area were carried out. The full results appear in the supplementary annex, but are presented in summary form in figure 4.2 below.

Figure 4.2 Changes in violence against the person baseline to post implementation using statistical tests

	1A2A Yr1 Nov03 – May04 Yr2 Nov04 – May 05	1B2B Yr1 May04 – Nov04 Yr2 May05 – Nov05	2A3A Yr2 Nov04- May05 Yr3 Nov05 – May06	2B3B Yr2 May05 – Nov05 Yr3 May06 – Nov06
Birmingham				
Blackpool				
Croydon				
Guildford				
Nottingham				

Key

	Very Significant Increase 1% level p<0.01
	Significant Increase 5% level p<0.05
	No Significant Change
	Significant Decrease 5% level p<0.05
	Very Significant Decrease 1% level p<0.01

Of the 20 tests, ten were comparing six monthly time slices in the baseline period and ten were post implementation. Of the ten t tests in the baseline period, only three were statistically significant compared with five in the post implementation period. This indicates that there was more significant change post implementation that in the baseline. Four of the five positive tests post implementation revealed significant reductions in violence against the person compared with two out of the three significant tests in the baseline period.

Examining the post implementation period more closely, t tests against the equivalent six-monthly periods in the baseline reveal a picture of either no significant difference or significant decreases in crime. Only one t test post implementation identified a significant increase in violence against the person and that was for Guildford comparing November 2005 to May 2006 against November 2004 to May 2005.

An examination of the results for individual case study areas revealed some clear differences between them. In Birmingham, there appeared to be no significant changes in violence against the person in either the baseline or post implementation periods. This corresponds to the even trajectory of monthly violence against the person rates for Birmingham displayed on the line graph in Figure 4.1.

By contrast, Croydon saw some significant reductions in violence against the person. These began in the six months preceding implementation of the Act and continued on throughout the baseline period. Reductions in violence against the person in the six months immediately preceding, namely, between May and November 2005 were very significant ($t=4.937$ $p<0.01$). There were also very significant reductions in violence against the person in the first six months post implementation (November 2005 to May 2006 compared with November 2004 to May 2004, $t=4.763$ $p<0.01$), and further reductions (statistically significant, although, not as strongly so) during this second half of the post implementation year ($t=1.937$, $p<0.05$). The results from these analyses are reflected in the trajectory of offence rates in Croydon shown in Figure 4.1. It is clear to see from this graph lower levels of offences in Croydon post the Licensing Act compared with the baseline. The commencement of the reduction in violence against the person preceding implementation can also be detected. Given that reductions appeared to be significant and well under way prior to implementation of Licensing Act, the post implementation reductions in offences in Croydon may well be the continuation of a trend established before November 2005. It is interesting to note that reductions continued between the May and November 2006. By November 2006, the violence against the person rate in Croydon was considerably lower than that at the start of the baseline period.

There were no significant increases in violence against the person in Blackpool. Significant reductions occurred in six months leading up to the Act and this was followed by a six-monthly period of no significant change. However, in the last six months of the post implementation period Blackpool did experience very significant reductions in violence against the person ($t=2.778$, $p<0.01$). These fluctuations are visible on the line graph in Figure 4.1. Reductions in the violence against the person rate can be seen in every month from July through November 2006.

The experience in Guildford was somewhat different from these other case study areas. Guildford saw no significant change in violence against the person rates in the baseline period but experienced a significant increase in the first six months following implementation (($t=-1.944$, $p<0.05$). This increase did not continue into the second half of the post implementation year (i.e. between May and November 2006) which did not reveal any significant difference compared with the baseline. Thus in Guildford, implementation of the Licensing Act was associated with either a small increase or no change in violence against the person. Once again these minor changes can be seen on the line graph in Figure 4.1. Increases in the violence against the person rate between February and June 2006 are clear to see.

The pattern in Nottingham was different again. In Nottingham there had been a very significant increase in offences between November 2004 through May 2005 ($t=6.458$, p,0.01) but this was not repeated in the six months leading up to implementation. In the first six months following the Act, Nottingham saw a significant reduction in violence against the person ($t=3.856$ p,0.01) but this did not continue through the second half of the post implementation period during which there was no change.

To summarise, of the 20 t tests only eight were statistically significant, six of which identified statistically significant decreases in offences. Significant increases were found in just two analyses out of the 20 suggesting strongly that the overall pattern of change within the baseline and post implementation periods was one of no significant change or significant reductions in violence against the person.

Day of week and time of day offences

Analysis of day of the week of offences revealed that offences in all case study areas tended to increase from Monday through to Thursday, and then peaked on Friday and Saturday, and Sunday. Fridays and Saturdays were the peak days for offences. The peak shown on Sundays may be due to offences occurring in the early hours of Sunday morning. These trends were evident in both the baseline and post implementation periods.

Due to the difficulties in attributing crime offences to alcohol, it is important to examine crime offences stamped by both time of say and location. Therefore, the time of day of offences were examined, for both the baseline and post implementation periods. The time of day of offences were categorised into 24 equal intervals, from midnight to 0.59am, from 1.00am to 1.59am, from 2.00am to 2.59am and so forth. The percentage of crime in each hourly interval, as a percentage of crime over the 24 hour period, was then calculated for both the baseline and post implementation periods. The change in the proportion of crime within each time interval (baseline to post implementation) was then examined.

An examination of the time of day of offences revealed that across the whole study area, there were reductions in the proportion of offences between midnight and 3.00am, and then increases in the proportion of between 3.00am and 5.00am in Birmingham and Blackpool. In Guildford there were reductions in the proportion of crime between 9.00pm and midnight, and then increases in the proportion of crime between midnight and 4.00am. In Croydon and Nottingham there was little change in proportion of crime by time of day across the entire study area. For reasons described earlier, this time of day analysis was further explored by proximity to licensed premises, and by weekday/weekend split. Findings from this analysis are discussed later in this section, and the results displayed in tables 4.7 and 4.8

Weekday and weekend offences

Analysing change in violence against the person between the baseline and post implementation periods has been carried out for each case study area using the full dataset and various subsets of data broken down temporally and geographically.

Monthly comparisons

It is appropriate to distinguish changes in levels of crime that occur during weekdays from that that occurs at the weekends given the importance of the latter for the night time economy. Baseline and post implementation changes in levels of violence against the person appear in Table 4.1. This identifies violence against the person for all time periods and separately for weekends and weekdays.

Pooling the data for all five case study areas shows that, overall, there was little change in levels of violence against the person from the baseline to the post implementation period. Crimes of violence against the person were down by 748 from 26,741 to 25,993, a reduction of 2.8%. However this marks some important differences between weekdays and weekends. When separated it becomes clear that the reduction in offences on weekdays (down by 4.3% or 589 offences) was greater than that at weekends (1.2% amounting to 159 offences). As a share of all offences those occurring at weekends represented 49.7% in the baseline period rising to 50.5 % (i.e. the majority of violence against person offences) post implementation.

There was, of course, some variation in this pattern at individual case study level. Changes were greatest in Blackpool and Croydon, both of which saw sizeable reductions in offences and in Guildford where there were marked increases. In all three areas, (baseline to post implementation) the change during weekdays and at weekends were in the same direction. This was also the case in Birmingham where moderate increases in offences occurred. Nottingham was the only area in which a moderate increase in weekend offences occurred alongside a small decrease in offences during weekdays.

An interesting question is that of how far changes in the Licensing Act differentially impacted upon town centres at weekends as opposed to weekdays. At the aggregate level, the picture is mixed with no consistent pattern emerging across the case study areas. In the three areas where overall violence against the person increased, the rise was greater at weekends in two areas, namely Birmingham and Nottingham but greater during weekdays in Guildford. Where violence against the person fell it did so more during weekdays than at weekends in Blackpool but more so during the weekend than on weekdays in Croydon.

Changes could also be detected in the proportion of all violence against the person offences that occurred on weekends. In three of the five case study areas, weekend violence against the person offences represented the majority, albeit by a slim margin. Thus in Blackpool, Guildford and Nottingham 54.4%, 53.6% and 50.7% of offences respectively occurred at weekends during the baseline period. This changed to 56.2%, 53.3% and 52.6% respectively post implementation.

The proportionately greater fall in offences during weekdays in Blackpool resulted in an increase in the proportion of offences occurring at the weekends from 54.4% to 56.2%. By contrast, in Croydon, the disproportionately greater fall in offences during weekends resulted in a reduction in the proportion of all offences taking place at weekends from 46.7% to 45.3%.

Monthly variations in weekday and weekend violence against the person between the average baseline and post implementation periods have also been examined. These appear as a series of bar graphs in Section 4 of the Supplementary Tables Annex. Each graph shows, by month, the percentage increase or decrease in violence against the person with one bar representing weekdays and the other weekends.

No two case study areas were identical, although similarities can be found in the overall pattern of weekend and weekday changes across the board. Seven scenarios of monthly change can be identified.

Both weekday and weekend increases in violence against the person:

- Weekend increases the most (Scenario A)
- Weekday increases the most (Scenario B)

Both weekday and weekend reductions in violence against the person:

- Weekend reduces the most (Scenario C)
- Weekday reduces the most (Scenario D)

No change or change in opposite direction

- One increases the other reduces- Weekend increases (Scenario E)
- One increases the other reduces- Weekday increases (Scenario F)
- No change in one or other (Scenario G)

The number of months, during which each of these scenarios was realised, appears in Figure 4.3

Figure 4.3 Monthly patterns of weekday/weekend change in violence against the person

Scenario	Birmingham	Blackpool	Croydon	Guildford	Nottingham	All Areas
A	2	1	0	4	3	10
B	3	0	0	3	1	7
C	1	4	2	0	1	8
D	1	3	6	0	2	**12**
E	1	4	1	2	3	11
F	4	0	3	3	1	11
G	0	0	0	0	1	1
All	*12*	*12*	*12*	*12*	*12*	*60*
Months Weekends >Baseline	6	5	1	9	8	29
Months Weekends < Baseline	6	7	11	3	4	31
Months Weekdays > Baseline	9	1	3	10	5*	28
Months Weekdays < Baseline	3	11	9	2	6	31

Note: Figures in each cell are the number of months post implementation for each scenario
Bold denotes Scenario with greatest number of months. * One of Nottingham's months = baseline

There were several similarities between Birmingham and Guildford and between Blackpool Croydon in the observed monthly changes post implementation compared with the baseline.

Both Birmingham and Guildford registered increases in weekday offences for most of the months post implementation (10 out of 12 months in Guildford, 9 out of 12 in Birmingham). The most common combination of change, in both areas, was for increases in both weekend and weekday offences, with weekday increasing the most (Scenario B) or for reductions in weekend offences alongside increases in weekday offences (Scenario F). Increases in offences occurred throughout the year but tended to be greater in the summer, particularly in July.

By contrast, Blackpool and Croydon saw weekday violence against the person reduced in almost every month post implementation (11 out of 12 for Blackpool and 9 out of 12 for Croydon). In both areas, most months also showed a reduction in weekend offences (11 out of 12 months for Croydon and 7 out of 12 for Blackpool). In Croydon, there were six months when both weekday and weekend offences fell but weekday violence against the person fell the most (Scenario D).

In Blackpool, there were four months of reductions in offences where weekend violence against the person fell the most (Scenario C) and a further four months where weekday offences reduced but weekend offences increased (Scenario E). Increases in weekend offences in Blackpool tended to occur in the winter and early spring. It is encouraging to see a fall in all offences in Blackpool during the summer and autumn months of the post implementation period.

Serious and other offences

Violence against the person offences were broken down to examine serious violence against the person and other violence against the person offences. The categories used for this and the results of this are shown in detail in the supplementary annex. The purpose of separating violence against the person into serious and other was twofold. Firstly, the way the serious offences are recorded has changed since April 2005, which might influence the results of the baseline post implementation comparison. Secondly, other violence against the person offences are more likely to be influenced by police activity in an area, and it is known that increased police levels were in operation after the implementation of the licensing Act, particularly in the run up to the Christmas and New Year period at the end of 2005.

The results of this analysis show that serious offences only formed a small part of violence against the person offences, ranging across study areas between 1.8 per cent and 3.4%. Indeed, the small number of offences precluded analysis of the serious violence against the person beyond the annual totals. The results found increases (baseline average to post implementation) in Guildford (4 offences), and Birmingham (9 offences). There were reductions in Blackpool (-8 offences), Croydon (-93) and Nottingham (-32).

A breakdown of serious violence against the person offences across all five study areas is provided in the supplementary annex. There were 132 less serious offences in the post implementation period, and the majority of these (94%) were either threat or conspiracy to murder (-95) or wounding or other act endangering life (-28). In both Guildford and Birmingham there were 9 more offences of wounding or other act endangering life in the post implementation period. In Birmingham and Guildford there were 7 more and 4 less offences respectively that were threats or conspiracy to murder offences.

Victim profile

Table 4.3 displays the percentage of male and female victims of violence against the person offences in both the baseline and post implementation periods. For all case study areas, males experienced more violence against the person than females. There was little variation between the baseline and post implementation periods in the gender of victims. Across the case study areas, the proportion of offences where the gender of the victim was unknown varied from seven per cent in Croydon to 30 per cent in Guildford.

In Blackpool, Guildford and Nottingham, for both the baseline and post implementation periods, individuals aged 15-24 were most likely to be victims of violence against the person. This pattern was evident for both male and female victims. In Birmingham, females aged 15-24 were most likely to be victims of violence against the person; males aged 20-29 were the most vulnerable. There was no evidence of a change in the age groups most at risk from violence against the person following the introduction of the Act. Care should be exercised when interpreting these findings, due to the number of offences where the gender and/or age of the victim was unknown.

Table 4.3 Percentage of victims of violence against the person by gender

	Baseline			Post implementation		
	Male	Female	Unknown	Male	Female	Unknown
Birmingham	50	25	25	53	29	18
Blackpool	48	35	17	41	31	28
Croydon	54	39	7	55	37	8
Guildford	51	34	15	48	32	30
Nottingham	48	36	16	43	35	22

Alcohol and domestic violence flags

There were a number of difficulties in drawing comparisons between the case study areas due to the marked differences in the use of alcohol and domestic violence flags across each area (see technical annex). In Birmingham only seven per cent (baseline) and three per cent (post implementation) of offences contained an alcohol flag. In Blackpool and Nottingham this figure was over 40 per cent (baseline and post implementation). In Croydon, no alcohol flags were supplied. In Birmingham, approximately five per cent of offences contained a domestic violence flag; in Croydon this figure was 25 per cent. The considerable variation in the use of flags across each of the five case study areas means that these findings should be treated with caution. This is one of the reasons why the location of offence data has been cross referenced with time stamped data for the purposes of this research.

In all case study areas (for both baseline and post implementation periods) males were the victims of a greater proportion of violence against the person offences with an alcohol flag, than females. In all case study areas (for both the baseline and post implementation periods) females were the victims of a greater proportion of violence against the person offences with a domestic violence flag, than males. For the majority of case study areas, individuals within the 20 to 24 age category (both male and female) experienced the highest rate of violence against the person offences with an alcohol flag. This applied to both the baseline and post implementation periods. For the majority of case study areas, individuals aged 15-35 accounted for the largest proportion of offences with a domestic violence flag.

GIS analysis

In addition to the macro level of analysis (entire study area), violence against the person offences were also analysed at the meso level (near to licensed premises) and micro level (inside or directly adjacent to licensed premises). The findings from these analyses are outlined below.

The distribution of pubs, bars and nightclubs

Research suggests that the geographical distribution of licensed premises ('risky facilities', Clarke and Eck, 2005) is likely to influence local patterns of crime and disorder. Therefore, this research examined areas proximate to licensed premises (through the use of buffer zones) and areas with high densities of licensed premises (clusters).The characteristics of these areas are summarised in Tables 4.4 and 4.5.

The cluster areas contained over 40 per cent of licensed premises in four of the five study areas. In Blackpool, the cluster area contained over 60 per cent of premises, and in Croydon, the cluster area contained less than 30 per cent of premises.

The mean nearest neighbour distance is a measure of how close premises are, and theoretically, the average distance you would have to travel between premises in that particular area. This distance was from two to ten times greater outside the cluster area than inside. Inside the cluster area, the mean nearest neighbour varied from 35 metres in Birmingham to 74 metres in Guildford. Outside the cluster area, this ranged from 54 metres (Birmingham) to 517 metres (Guildford). In Birmingham, premises were twice as close inside the cluster area than outside of it. In Blackpool, Guildford and Nottingham, premises were five

to six times closer in the cluster area than outside, and in Guildford, premises were 11 times further apart outside the cluster area than inside the cluster area.

Table 4.4 Breakdown of premises by cluster and non cluster area

		Cluster area	Non cluster area	Entire case study area
Birmingham	Number of premises	89	105	194
	Percentage of premises	45.9	54.1	
Blackpool	Number of premises	121	71	192
	Percentage of premises	63.0	37.0	
Croydon	Number of premises	65	170	235
	Percentage of premises	27.7	72.3	
Guildford	Number of premises	49	71	120
	Percentage of premises	40.8	59.2	
Nottingham	Number of premises	128	152	280
	Percentage of premises	45.7	54.3	

Table 4.5 Mean nearest neighbour distance of premises inside the cluster area, outside the cluster area, and all premises in the case study area

	Cluster area	Non cluster area	All case study	Density*
Birmingham	35.1	72.5	54.5	2.1
Blackpool	51.4	321.8	142.7	6.3
Croydon	44.9	230.6	182.2	5.1
Guildford	74.1	828.6	516.9	11.2
Nottingham	49.5	302.1	185.2	6.1

* Density = Non cluster area / cluster area

The relationship between offences and licensed premises

The concentration of offences within the cluster area and within 50 metres of licensed premises was examined for both the baseline and post implementation periods (Table 4.6). Buffer zones were constructed at 50 metre intervals up to 200m from premises, and it was noticeable that the greatest changes occurred within close proximity (within 50m) and within the cluster areas (areas with high concentrations of licensed premises), thus here discussion focuses on these two areas. In Birmingham, Blackpool and Guildford approximately 40 per cent of all violence against the person offences took place within the cluster area. In Croydon and Nottingham, this figure was between seven and 11 per cent. The likely reasons for these differences are the layout of these areas, the spatial distribution of licensed premises, and the actual size of the case study areas.

In Birmingham over 40 per cent of violence against the person offences occurred within the 50 metre buffer zone. This figure was approximately 30 per cent in Blackpool, and ranged between five and 20 per cent in the other three case study areas.

There was very little evidence of any changes in the concentrations of violence against the person offences, in both the cluster area and in the 0-50 metre buffer zones, since the introduction of the Act.

Table 4.6 Percentage of offences within the cluster area and within 50 metres of pubs, bars and nightclubs

	Within cluster area		Within 50 metres of premises	
	Baseline	Post implementation	Baseline	Post implementation
Birmingham	35.7	38.1	41.3	42.3
Blackpool	41.8	43.5	28.4	33.2
Croydon	11.5	10.6	14.6	12.6
Guildford	40.2	38.4	18.7	17.4
Nottingham	7.6	7.7	6.6	6.5

Spatio-temporal analysis

To examine change by both time of day and location, the proportional analysis of change by time of day was extended to examine a number of distinct geographical areas. Buffer zones (50m concentric buffers) were constructed around licensed premises up to 200m, and cluster zones (with high concentrations of licensed premises were also generated). This technique is described in the technical annex, and the results are provided in more detail in each case study annex. Some of the more important changes evident occurred in areas more proximate to licensed premises, thus three areas are included in the discussion here. The first was the entire case study area; the second was within the individual 50 metre buffer zones generated for the research, and the third within the cluster area of licensed premises.

When examining the entire case study area, overall, there was some evidence of change at specific times, although this varied by case study area. On the whole however, there was a fairly consistent picture between the baseline and post implementation periods at the entire case study area. Where reductions were found, these changes tended to be concentrated between 9.00pm and 4.59am, and thus the changes for these time zones are presented in table 4.7. This shows both the proportional change (in proportion of crime occurring in the area in that time band) and the volume change (number of offences). In Nottingham, Blackpool and Birmingham, there were large decreases in the proportion of offences between 2.00am and 2.59am and in the following one hour period these areas saw large increases. In Guildford, this reduction occurred between 11.00pm and midnight, with subsequent proportional increases between midnight and 1.00am, and 2.00am and 3.00am. Croydon experienced reductions between 1.00am to 1.59am. This is suggestive in some areas of a displacement of offences to a later time period, coinciding with the change in licensing hours. Moreover, when examining this change within 50m of licensed premises, these changes occurred in the same direction but at a greater magnitude than in the case study area, implying the change was greater close to licensed premises. For example in Blackpool in the case study area there was a 2.7% reduction in the proportion of crime occurring (-214 offences). Within the cluster area (high concentration of premises) this proportion reduced by 4.8% (-145 offences). In the following hour, there was then an increase in the case study area in the proportion of offences by 3% (114 offences). Within the cluster area this proportional increase was 6.1% (117 offences).

In addition to examining offences by location and time of day, this proportional analysis was extended to split offence by weekday (midnight Sunday to 23.59pm Thursday) and weekend (midnight Friday to 23.59pm Sunday). The results of this analysis are discussed in more detail in the supplementary annex. Again, the results presented here (table 4.8) focus on the time period 9.00pm to 4.59am.

The timing of weekday and weekend offences

The timing of changes in violence against the person during weekdays and at weekends is shown in Table 4.8. Hourly changes for the period covering 21.00 through 04.59 are displayed as proportional changes (i.e. changes in the proportion of all offences concentrated in each hour for each area) and as changes in the absolute number of violence against the person offences.

Croydon saw falls in violence against the person between 11am and 3am both during the week and at weekends, although the magnitude of the change was greatest during the weekend. In Blackpool, falls were observed in offences between midnight and 3am both at weekends and on weekdays but, as in Croydon, reductions were greatest at the weekends.

In Birmingham, there was a modest reduction in offences on weekday nights between 1am and 2am and this reduction was stronger at the weekends. Offences also reduced quite markedly on weekend nights between 2am and 3am by 122 offences. This amounted to a 6.3% fall in the concentration of offences between 2am and 3am at weekends and as such was the greatest proportional shift in offences in any one-hour of any of the case study areas.

Guildford saw modest increases in offences between midnight and 1 am both on weekdays and on weekends although the increase was greater at weekends. Increases also occurred between 1am and 3am both on weekends and weekdays. The proportional changes were small and the number of additional offences modest (well below 50).

In Nottingham, there was a small reduction in offences on weekdays between midnight and 1am but a slightly larger increase in the same hourly period at weekends and between 1am and 2am. Otherwise there was little change.

Table 4.7 Proportional change in violence against the person offences by time and location in five case study areas (average baseline and post implementation periods)

	Birmingham						Blackpool						Croydon					
Time of day	Cluster		0-50m		Case study area		Cluster		0-50m		Case study area		Cluster		0-50m		Case study area	
	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change
2100-2159	-0.5	-1	-0.2	2	0.4	24	-0.3	-25	-0.3	-7	0.5	-38	-0.5	-10	-0.6	-18	-0.1	-65
2200-2259	0.4	15	1.9	37	0.8	42	-1.0	-43	-1.1	-20	0.0	-65	-0.6	-12	0.4	-11	0.3	-32
2300-2359	-1.1	-3	-0.5	3	-1.0	-24	-0.3	-36	-0.3	-7	0.9	-36	-0.1	-12	-0.4	-25	-0.1	-55
0000-0059	0.4	25	-0.4	9	-0.7	-7	-1.6	-72	-1.5	-28	-2.0	-206	1.4	-8	1.5	-11	0.8	-14
0100-0159	-3.6	-28	-5.6	-70	-3.6	-112	-1.5	-71	-2.1	-37	0.1	-68	-3.7	-48	-3.9	-60	-0.3	-66
0200-0259	-5.6	-53	-4.6	-54	-4.0	-123	-4.8	-145	-6.1	-100	-2.7	-214	-1.0	-25	-1.2	-31	-0.1	-42
0300-0359	4.6	78	3.8	66	2.2	91	6.1	117	6.6	104	3.0	114	0.2	-4	-1.0	-15	-0.1	-21
0400-0459	1.5	27	1.1	20	1.1	47	1.9	37	2.8	44	1.1	45	-0.2	-2	0.3	1	0.0	-6

Time of day	Guildford						Nottingham					
	Cluster		0-50m		Case study area		Cluster		0-50m		Case study area	
	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change
2100-2159	-1.6	-9	-0.9	-2	-2.6	-36	1.3	39	-0.5	1	0.4	56
2200-2259	-2.5	-14	-5.4	-17	-1.5	-14	1.3	40	0.3	22	0.5	66
2300-2359	-6.3	-36	-9.4	-27	-2.7	-30	-0.3	12	-0.8	7	0.3	36
0000-0059	3.1	35	5.8	24	3.3	84	0.0	27	-0.3	26	0.1	24
0100-0159	-1.0	2	-2.2	-5	0.8	29	0.5	38	0.6	42	0.8	84
0200-0259	4.7	41	9.2	33	3.5	77	-3.2	-47	-3.3	-36	0.1	30
0300-0359	1.8	16	0.9	4	1.2	27	3.1	78	4.4	95	0.9	87
0400-0459	0.4	4	0.9	3	0.0	1	0.3	9	0.3	8	0.3	38

Table 4.8 Proportional change in violence against the person offences by time and location in five case study areas (average baseline and post implementation periods by weekday and weekend)

	Birmingham				Blackpool				Croydon			
Time of day	Weekday		Weekend		Weekday		Weekend		Weekday		Weekend	
	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change
2100-2159	1.3	27	-0.3	-3	-0.4	-48	0	-29	-0.2	-33	0	-33
2200-2259	1.2	27	0.4	12	0.2	-37	0	-36	-0.3	-32	1.1	0
2300-2359	-1	-8	-1.2	-20	1.3	-4	1.3	5	0.6	-3	-0.5	-52
0000-0059	-0.3	3	-0.8	-8	-0.9	-67	-2	-94	0.5	-4	1.4	-10
0100-0159	-2.5	-33	-4.2	-78	0.2	-12	0.3	-12	-0.4	-26	0	-40
0200-0259	-0.7	-2	-6.3	-122	-0.3	-21	-0.6	-35	0.1	-3	-0.3	-39
0300-0359	0.6	13	3.4	76	-0.3	-15	0.2	-8	0	-4	-0.1	-17
0400-0459	0.8	15	1.4	32	-0.1	-8	0.3	2	0	-4	0.2	-2

	Guildford				Nottingham			
	Weekday		Weekend		Weekday		Weekend	
	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change
2100-2159	-2.8	-17	-2.4	-19	0.6	19	0.4	36
2200-2259	-1.4	-5	-1.6	-9	0.6	20	0.5	46
2300-2359	-2	-9	-3.3	-22	0.5	17	-0.2	18
0000-0059	2.3	29	4.2	54	-1.1	-57	1	80
0100-0159	1.4	17	0.4	12	0.4	13	1	71
0200-0259	3.2	33	3.8	43	0.5	20	-0.3	10
0300-0359	0.8	8	1.6	18	0.8	33	0.9	53
0400-0459	0.4	3	-0.4	-3	0.3	13	0.4	24

Offence ratios

Crime ratios were generated to compare the concentration of violence against the person offences inside the cluster area with those outside the cluster area. They were used to examine whether, since the introduction of the Act, there had been any change in the concentration of crime within these clusters compared to the rest of the area. Offence ratios varied from 0.1 to 0.8 across the five areas. They were lowest in Croydon (0.1 to 0.2) and highest in Blackpool and Guildford (0.5 to 0.8).

In Blackpool, the crime ratio steadily increased over the three year period of analysis. In Guildford, Birmingham and Croydon, there was no evidence of an increase or decrease in the violence against the person ratio over the three years examined. In Croydon, the crime ratio reduced slightly over the three year period of analysis. This suggests that there was no evidence of a change in the proportion of violence against the person offences in areas with high concentrations of licensed premises after the introduction of the Act.

Hot spots

Two methods were used to generate hot spots. There were Nearest Neighbour Hierarchical Cluster (NNHC) and Kernel Density Estimates (KDE) (see technical annex). In all areas, hot spots of violence against the person tended to correspond with areas where licensed premises were located. However, this does not imply a causal relationship. Some hot spots could be observed in areas where there were no licensed premises. Further examination is required to identify the reasons behind their formation. The difficulties in obtaining detailed non-residential land use data were highlighted earlier, and are discussed in the technical report. On the whole there was little evidence of change in the location of hot spots between the baseline and post implementation periods across all five case study areas. However, there were some instances where new hot spots emerged or former hot spots were no longer present. The KDE interpolations revealed that there was some evidence of change post implementation in the distributions of violence against the person hot spots. There was some evidence that in the post implementation period hot spots remained at slightly later times than the baseline period. Across all five case study areas, these hot spots tended to occur more intensely in the post implementation period, although this was limited to the key drinking areas, and restricted to the period 3.00am to 4.59am. It should be noted that the hot spot analysis findings are drawn from visual interpretations of the hot spot maps.

Synthesis maps of change

KDE synthesis maps were used to compare change in violence against the person hot spots between the average baseline and post implementation periods, to compare these in a single map.

In Nottingham and Birmingham and Blackpool there were reductions between 1.00am to 2.59am, and increases 3.00am to 4.59am. These were concentrated around the key drinking areas. These coincide with the changes found in the analysis by time of day (proportional change tables) in each of these areas. Note these proportional changes were greatest in areas near to licensed premises, as is reflected in the synthesis maps. The top 15 premises post implementation for VAP also fall in same hot spot areas where temporal displacement. In Nottingham from 11.00pm to 2.59am there were increases in Lace Market area and reductions in Market Square area. This is a spatio-temporal change not detected by the time of day analysis, as there were different trends in the two key drinking areas. However from 3.00am to 4.59am there were increases in both of these key drinking areas. This is the only case study area were this was evident

In Guildford there were reductions from 11.00am to 0.59am, and then increases from 1.00am to 2.59am. Thus, again there is a reduction followed by an increase, but here this happens at an earlier time. This change is also detected in the time of day analysis in the Guildford annex. This is likely to be reflective of the licensing hours granted in the area, and the time of day of operation of premises.

In Croydon there is a slightly different picture which is different to all the other case study areas. In the key drinking areas there are reductions from 9.00pm through to 4.59am, although these are most concentrated between 1.00pm and 2.59am. The time of day analysis in the Croydon annex also shows little evidence of change in the time of day of violence against the person in Croydon, although there are some reductions in the 1.00am and 2.59am time periods consistent with the synthesis maps. For all areas increases and reductions observed often correspond to the location of licensed premises.

Resource Targeting Tables (RTTs)

The RTTs were used to examine how concentrated offences were by individual premises. Note there are some limitations with this. The format of the data makes it difficult to attribute an offence to an actual premise, thus it refers to offences that occurred inside to directly outside a premise (linked by premise name in the recorded crime data). However offences may occur on street corners adjacent to a number of pubs, or a door security person may refuse entry to an intoxicated person who may cause an offence. Thus care should be taken when attributing offences to an individual premise. Furthermore, these take no account of the size of a premise, its capacity, or the number of hours it remains open. However, this technique is very important for measuring risk, as the volume of offences does relate directly to police the level of policing required at a particular location. Moreover, a premise may have been closed down for part of the year. If this still appears in the top 15 list, then this heightens its risk as it may not have been open for as many months as a premise with fewer offences. However it is acknowledged that if a premise with a small capacity has a relatively high number of offences (in relation to its size) then this may be missed using this analysis. It is suggested this analysis could also be included in any future analysis.

Table 4.9 Summary of RTT (baseline period)

	Cumulative percentage of offences				
Premise rank	Birmingham	Blackpool	Croydon	Guildford	Nottingham
1	6.9	17.8	12.8	17.4	7.6
2	11.9	26.8	19.3	33.7	11.8
3	15.6	32.2	25.4	45.8	15.1
4	18.8	35.7	29.7	56.2	18.2
5	21.8	39.0	33.4	63.1	21.3
6	24.8	41.7	37.0	67.3	23.8
7	27.7	44.0	40.7	71.0	26.0
8	30.3	46.1	43.1	74.2	28.2
9	32.8	48.0	45.4	76.7	30.4
10	35.4	49.8	47.3	79.1	32.2
11	37.7	51.5	49.2	80.7	33.9
12	39.9	53.0	51.1	81.9	35.5
13	41.9	54.5	52.8	83.0	37.0
14	43.9	55.9	54.5	84.0	38.4
15	45.7	57.2	56.1	85.0	39.7
Number of premises with no offences	55	59	98	45	78
Total number of premises	194	193	235	102	280
Percentage of all premises in top 15	7.7	7.8	6.4	14.7	5.4
Percentage of premises with no offences	28.4	30.6	41.7	44.1	27.9

Findings from the baseline period are presented in Table 4.9, and the post implementation period in Table 4.10. These show that for all five areas, there was a high concentration of offences occurring at a relatively small number of premises, for both the baseline and post implementation periods.

For the baseline period, the top 15 ranked premises for offences accounted for between 40 per cent (Nottingham) and 85 per cent (Guildford) of all offences. In the other case study areas these figures were 56 per cent (Croydon), 57 per cent (Blackpool) and 45 per cent (Birmingham). Moreover, the highest ranked premise (most offences) within the baseline period accounted for between seven per cent (Birmingham and Nottingham) and 18 per cent (Blackpool and Guildford) of all offences. The percentage of premises with no offences ranged from 28 per cent (Nottingham and Birmingham) to 45 per cent (Guildford). In Guildford, the top three premises accounted for almost 50 per cent of all offences. In Blackpool this was approximately 33 per cent, in Croydon approximately 25 per cent, and in Nottingham and Birmingham approximately 15 per cent.

There were few differences between the concentrations of crime occurring at premises in the baseline and post implementation periods across the five case study areas. For the post implementation period, the top 15 premises accounted for between 42 per cent (Nottingham) and 78 per cent (Guildford) of all offences. In the other case study areas these figures were 51 per cent (Croydon), 64 per cent (Blackpool) and 48 per cent (Birmingham). The top ranked premise for offences in the baseline period accounted for between seven per cent (Birmingham and Nottingham) and 20 per cent (Guildford) of all offences. The percentage of premises with no offences ranged from 36 per cent (Croydon) to 48 per cent (Blackpool). In Guildford, the top three premises accounted for almost 45 per cent of all offences. In Blackpool this was 42 per cent, in Croydon approximately 25 per cent, and in Nottingham and Birmingham approximately 15 per cent.

Table 4.10 Summary of RTT (post implementation period)

	Cumulative percentage of offences				
Premise rank	Birmingham	Blackpool	Croydon	Guildford	Nottingham
1	6.4	17.1	13.1	19.4	6.8
2	11.2	30.6	19.4	38.5	13.2
3	15.5	42.1	25.4	44.5	17.1
4	19.5	45.7	31.0	50.5	20.9
5	23.5	48.4	34.3	54.8	24.1
6	26.6	50.6	36.9	59.0	27.1
7	29.4	52.6	38.8	62.9	29.6
8	32.2	54.3	40.7	66.8	32.1
9	35.0	56.0	42.2	70.0	33.9
10	37.7	57.5	43.7	71.7	35.5
11	40.2	58.9	45.1	73.1	37.1
12	42.5	60.4	46.6	74.6	38.6
13	44.5	61.9	48.1	76.0	39.9
14	46.4	63.1	49.6	77.4	41.1
15	48.4	64.3	51.1	78.8	42.4
Number of premises with no offences	76	92	85	45	113
Total number of premises	194	193	235	102	280
Percentage of all premises in top 15	7.7	7.8	6.4	14.7	5.4
Percentage of premises with no offences	39.2	47.7	36.2	44.1	40.4

Table 4.11 displays the number of premises in the top 15 ranked premises for offences, in both the baseline and post implementation periods. In Croydon, eight premises remained in the top 15 baseline and post implementation. In Birmingham 11 premises remained in the top 15 baseline and post implementation. In the other three case study areas, 12 premises remained in the top 15 baseline and post implementation.

An examination of the spatial location of premises (see individual annexes) that remained in the top 15 revealed that the position of many of these premises corresponded with the locations of hot spots of violence against the person. In many instances there were hot spots present during both the baseline and post implementation periods. The analysis showed that a small number of premises were responsible for a large proportion of offences, and also consistently responsible for the generation of hot spots of violence against the person.

Table 4.11 Number of premises remaining in top 15 and top 3 ranked premises for violence against the person (baseline and post implementation periods)

	Number of premises in top 15 baseline and post implementation	Percentage of all offences post implementation	Number of premises remain in top 3 baseline and post implementation	Percentage of all offences post implementation
Birmingham	11	48	2	15
Blackpool	12	64	2	42
Croydon	8	51	3	25
Guildford	12	78	3	44
Nottingham	12	42	1	17

Additional hours

As stated earlier, there were difficulties in obtaining accurate opening hours of pubs, bars and nightclubs in the baseline period and post implementation periods. The information available for the baseline was estimated former hours (using traditional hours of 11.00am opening Monday to Saturday and 12.00 midday Sunday and 11.00pm closing for pubs and 2.00am closing for night-clubs), and actual hours granted post implementation. From this an estimate was derived of additional hours *applied for* per week based on traditional baseline hours and new post implementation hours applied for. Additional, using the information provided by the fieldworkers, it was possible to produce estimates of the number of additional hours *used* at a sample of premises visited in each area.

Hours used (visited premises)

It was evident form the fieldwork that those premises visited did not *use* all the hours they *applied for*. This varied by case study area. In Nottingham, the premises visited used, on average, 34 per cent of the hours they applied for. In Birmingham, Blackpool and Croydon this figure was closer to 50 per cent, and in Guildford this was 55 per cent.

Premises were subdivided into three groups based upon the number of additional hours per week *used*. These categories were none (no additional hours), low (one to five hours) and high (more than five hours). For all areas, the majority of premises used low additional hours, however, this varied from 37 per cent in Birmingham to 70 per cent in Nottingham.

When examining violence against the person offences at premises with none, low and high additional hours, it was evident that for the all areas except Nottingham, the percentage of offences remained similar for those using no additional hours, slightly reduced for those with low usage, and increased for those with high usage. It should be noted that these findings are based upon a small sample of premises, which represent premises with high levels of offences.

Estimated additional hours applied for (all premises)

Estimates of *additional hours* applied for per week were constructed (as described above) for all geo-coded premises in each case study area. Premises were divided into none (no additional hours), low (one to nine additional hours) and high (more than nine additional hours). In Blackpool, Guildford and Croydon, the majority of premises applied for low additional hours. In Nottingham most premises applied for high additional hours, and in Birmingham the majority applied for no additional hours. It is important to note that these are estimates, and in some instances these estimates contradict with the findings of the Cragg Ross Dawson report from their recent interviews.

When examining violence against the person offences at premises with none, low and high additional hours *applied for,* for all case study areas, the percentage of offences at each premise category changed very little between the baseline and post implementation period. These findings were contrary to those produced when examining additional hours *used.* This highlights the importance of capturing information on the former hours used, current hours applied for, and current hours used by licensed premises.

Unfortunately the data structures make it very difficult to link changes in licensing hours to change in crime by location and time. The top 15 analysis uses recorded crime data (violence against the person offences) and extracts the premise name as a text field based on the number of times it appears (frequency). It is a complex process to link the frequencies generated on premise name back to the individual crime records to extract number of offences at each premise by time of day. It is suggested that future research here is necessary and that local authorities maintain a database of violence against the person offences by premise which include the date and time of the offence, the name of the premise, and the premise opening hours at the time of the offence.

Findings from the A&E and ambulance service data

The assault data supplied for each case study area was based upon either A&E unit data, ambulance response data or both datasets. Details are provided in the technical annex. Although these data were analysed, it should be highlighted that it is problematic to draw comparisons between the A&E/ambulance data and police recorded offences against the person data for two reasons. Firstly, the geographical areas covered were not coterminous, and, secondly, the definitions of assault and violence against the person are likely to differ between each agency. However, this data does provide an additional source of information on violence (as discussed earlier) and the findings of this analysis are described below.

Violence against the person offences were two to three times higher than assaults (based on A&E and ambulance data) in Blackpool, Birmingham and Croydon, and seven times higher in Guildford and Nottingham. There are no obvious reasons for this, although it may be due to differing recording practices. In all areas except Guildford, data were only provided for night time and weekends, thus it was necessary to separate the violence against the person offences by weekend and night time. The data was requested in this form due to difficulties in obtaining it, and to use it as a proxy measure for alcohol related offences at weekend night-times.

In Guildford and Blackpool changes in violence against the person offences did not reflect changes in assaults. Indeed monthly percentage changes often occurred in different directions. In Croydon and Nottingham, there were similar trajectories between violence against the person offences and assaults. Again this may be due to the recording of the health data, or under-reporting of crime data.

There was some evidence of a change in the time of A&E and ambulance data assaults in the post implementation period. In Birmingham there were increases between 3.00am and 4.59am, in Guildford from 3.00am to 3.59am and in Croydon from, 4.00am to 4.59am. In Nottingham reductions were observed between 2.00am and 2.59am. Some of these correspond to changes in hours (Birmingham and Nottingham for example) and also correspond with changes in police recorded violence against the person offences. The

Guildford and Croydon increases do not correspond with changes in hours, and were not picked up in the police violence against the person offences.

There was insufficient evidence to conclude how changes in police recorded violence against the person and assaults from ambulance data were related. It was not possible to ascertain whether the changes evident were attributable to changes in the Act, to changes in recording procedures, to changes in the operation of A&E units and the ambulance service, or to other factors. However, they do add a further strand to the evidence compiled in this research.

Criminal damage

Offences were examined by year, month, day of week, and time of day, across the entire case study area. Both crime frequencies and crime rates (per 10,000 persons) were examined.

Annual distribution of offences

Table 4.12 below indicates the annual offence counts. This shows that overall the annual change (average baseline to post implementation periods) was a small increase in two areas (Birmingham and Croydon) of between 20 and 40 offences, a small reduction in Guildford (14 offences less) and sizeable reductions in Blackpool and Nottingham (approximately 500 offences and 1500 offences respectively). Differences between weekend and weekday offences are discussed later in this section.

Table 4.12 Criminal damage annual offences counts by case study area (all time periods, weekday and weekend offences)

Birmingham			
	Average Baseline	Post Implementation	% Change
Weekend	596 **(52.0%)**	592 **(50.7%)**	-0.7
Weekday	549	575	4.7
All	1145	1167	1.9
Blackpool			
	Average Baseline	Post Implementation	% Change
Weekend	3074 **(52.4%)**	2910 **(53.7%)**	-5.3
Weekday	2784	2508	-9.9
All	5858	5418	-7.5
Croydon			
	Average Baseline	Post Implementation	% Change
Weekend	2271 **(46.6%)**	2418 **(49.2%)**	6.5
Weekday	2599	2490	-4.2
All	4870	4908	0.8
Guildford			
	Average Baseline	Post Implementation	% Change
Weekend	1110 **(49.7%)**	1137 **(51.3%)**	2.4
Weekday	1120	1078	-3.8
All	2230	2215	-0.7
Nottingham			
	Average Baseline	Post Implementation	% Change
Weekend	5901 **(46.6%)**	5390 **(48.0%)**	-8.6
Weekday	6741	5820	-13.7
All	12642	11210	-11.3

Notes: Figure in bold brackets is the percentage of all offences occurring at weekends

Monthly distribution of offences

Table 4.13 shows the monthly percentage changes in criminal damage offences in the post implementation period compared to the average baseline period. There was no evidence of sustained increases in criminal damage offences in any of the five case study areas. Two of the areas (Nottingham and Blackpool) experienced more than eight (non consecutive) monthly reductions in the post implementation period. Birmingham was the only area with eight or more (non consecutive) monthly increases in criminal damage, and Nottingham experienced reductions every month.

Taken across all five case study areas, 40 per cent of the months within the period of analysis experienced increases in offences and 60 per cent of months experienced decreases. July was the only month examined which showed a consistent direction of change (a decrease) across all five case study areas.

Table 4.13 Percentage change* in monthly criminal damage offences

	Birmingham	Blackpool	Croydon	Guildford	Nottingham
December	4.3	-11.5	-0.7	1.4	-8.8
January	6.5	-13.3	-0.9	-18.7	-13.3
February	-34.7	-16.1	-5.1	1.6	-25
March	2.6	19.5	-1.8	2.8	-15.5
April	-12.1	-9.3	11.8	3.1	-14.6
May	18.9	-11	-8.8	-18.7	-7.8
June	38.3	-21.7	0.5	-17	-8.1
July	-8.8	-16.9	-9.7	-8.3	-5.3
August	-15.3	6	5.9	45.4	-12.2
September	7.9	-8.1	1.4	-8.6	-11.1
October	26.2	6.3	13	13.9	-6.6
November	5.6	-9.7	4.4	3.8	-4

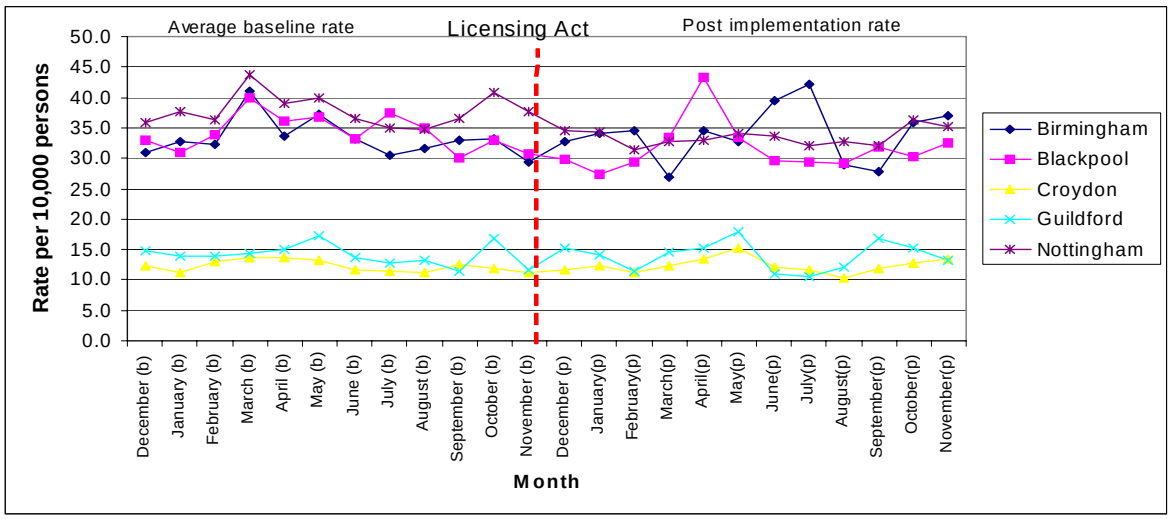
* Percentage change is based on average monthly baseline figures (2004/2005)

10 to 20% increase
> 20% increase
10 to 20% decrease
> 20% decrease

Offence rates

Rates for criminal damage offences were produced for all areas as a rate per 10,000 persons (Figure 4.4). On the whole, offences followed some of the national trends due to seasonal fluctuations. This showed peaks in the autumn months. Peaks were also observed in the summer months, but not in the spring. This pattern was contrary to seasonal trends highlighted in national statistics. Nottingham and Blackpool had the highest rates and appeared to follow similar trends. Guildford and Croydon appeared to have similar (lower) rates of criminal damage. The Birmingham figure here was not adjusted (as with violence against the person) due to low numbers. Again care should be taken comparing this to other case study areas due to the different population denominators used.

Figure 4.4 Criminal damage offence rates (average baseline and the post implementation)



Statistical analysis of change (baseline and post implementation periods)

Further analyses were carried out using independent t tests to establish any significant year on year differences in levels of criminal damage in each case study area, and to look at trends over the three years. Independent tests were used as it is argued there is no basis for the first half of one year's offences to influence offences in the first half of a subsequent year. This was done by comparing the weekly distribution of six month's worth of criminal damage data with that for the equivalent period in the previous year. The decision to split each year into two 26 week periods was made in order to add sensitivity to the analysis, and as full year comparisons may mask change due to internal seasonal fluctuations. Thus six half-yearly periods were constructed each containing 26 weeks of criminal damage data. These were defined as follows:

- Baseline (Year 1 A) = 23rd November 2003 to 23rd May 2004
- Baseline (Year 1 B) = 24th May 2004 to 23rd November 2004
- Baseline (Year 2 A) = 23rd November 2004 to 23rd May 2005
- Baseline (Year 2 B) = 24th May 2005 to 23rd November 2005
- Post Implementation (Year 3 A) = 23rd November 2005 to 23rd May 2006
- Post Implementation (Year 3 B) = 24th May 2006 to 23rd November 2006

Four of these covered the baseline period prior to implementation of the Act (1A, 1B, 2A and 2B) and two of them fell into the post implementation period (3A and 3B). A total of 20 t tests, four for each case study area were carried out. The full results appear in the supplementary annex, but are presented in summary form in figure 4.5 below.

Figure 4.5 Changes in criminal damage baseline to post implementation using statistical tests

	1A2A Yr1 Nov03 – May04 Yr2 Nov04 – May 05	1B2B Yr1 May04 – Nov04 Yr2 May05 – Nov05	2A3A Yr2 Nov04- May05 Yr3 Nov05 – May06	2B3B Yr2 May05 – Nov05 Yr3 May06 – Nov06
Birmingham				
Blackpool				
Croydon				
Guildford				
Nottingham				

Key

	Very Significant Increase 1% level p<0.01
	Significant Increase 5% level p<0.05
	No Significant Change
	Significant Decrease 5% level p<0.05
	Very Significant Decrease 1% level p<0.01

In Birmingham, there were no significant differences in criminal damage either during the baseline period or post implementation.

By contrast, significant differences were found in Nottingham between criminal damage in the second baseline year compared with the previous year and in the post implementation period. Criminal damage increased significantly in both halves of the second baseline year compared with the previous year. However, this trend reversed in the post implementation period in that there was a very significant decrease in criminal damage in both the first and second half of the year following implementation of the Act.

On careful inspection, several of the trends identified through the t tests can be recognised on the line graphs in Figure 4.4. However, it must be borne in mind that the line graphs show a fairly crude monthly rate whereas the t tests are calculated using weekly data on criminal damage throughout each six-month period and are calculated using a relatively large number of data points.

The differences between Birmingham and Nottingham can be detected on the line graph in Figure 4.4. Despite considerable fluctuations, Nottingham's line, in the post implementation

period, is consistently lower than Birmingham's; the latter occupies the same general position on the Y axis over the entire baseline and post implementation period.

Blackpool saw significant reductions in criminal damage in the baseline period but this did not extend into the post implementation year. The latter was characterised by no significant change in criminal damage.

Very little change in criminal damage could be identified in Croydon and Guildford. In both areas a significant decrease in the early part to the baseline period was followed by a prolonged period of no significant change. The even trajectory of criminal damage rates in both areas is clear to see in Figure 4.4.

In summary, the statistical analysis indicates that the post implementation period was associated with no significant change in criminal damage in four of the five case study areas and a significant reduction in one area, namely, Nottingham. Therefore, it appears that the Licensing Act did not result in increasing levels of criminal damage. However, it is also true that in Blackpool, significant reductions in criminal damage in the baseline period were not sustained post implementation.

Day of week and time of day of offences

Analysis of day of the week and time of the day revealed some interesting findings. Offences in all case study areas tended to increase from Monday through to Thursday, and then peaked on Friday, Saturday, and Sunday. The peak seen on Sunday may be a result of offences taking place on Saturday night/Sunday morning.

Trends for criminal damage by day of week changed slightly between the baseline and post implementation periods; and the proportion of criminal damage offences by time of day did alter at some times between the baseline and post implementation periods. The time of day of this change varied by case study area, and often did not occur at a time the changes as a result of the Licensing Act would be likely to impact upon. Further exploration of land use and other changes to the local environment are required to explore reasons for this change further. In Birmingham, there was an increase between 6.00pm and 9.59pm, and midnight and 3.00am, and reductions from 10.00pm to midnight and 3.00am to 4.59am. In Croydon, increases were observed between midday and 2.00pm and 6.00pm to 8.00pm, with reductions between 8.00pm and 10.00pm. In Guildford there were increases between 6.00pm and 8.00pm, and 9.00pm and 11.00pm, and reductions between 1.00pm and 3.00am. In Nottingham there was an increase between 6.00pm and 8.00pm, and reductions between 2.00am and 5.00am. In Blackpool there little evidence of change. In order to explore these trends further, analysis of the time of day of offences was explored in areas near to licensed premises, and by weekday/weekend. The results of this analysis are depicted in tables 4.14 and 4.15.

Weekday and weekend offences

Data on criminal damage have also been analysed for weekdays and weekends in order to establish whether there were any changes between the pre-and post implementation periods in the timing of such offences. Aggregate figures broken down by weekend and weekday criminal damage appear in Table 4.12.

During the baseline period the share of all criminal damage offences occurring at weekends was, in descending order of magnitude, 52.4% Blackpool, 52% for Birmingham, 49.7% for Guildford, and 46.6% for both Croydon and Nottingham.

Post implementation the share of all criminal damage offences occurring at weekends rose in four of the five case study areas. These comprised Blackpool (up 1.3 percentage points to 53.7%), Croydon (up 2.6 percentage points to 49.2%), Guildford (up 1.6 percentage points to 51.3%) and Nottingham (up 1.4 percentage points to 48%). Only in Birmingham did the

concentration of offences at the weekends fall marginally, down 1.3 percentage points to 50.7%.

In Blackpool and in Nottingham the relative increase in the proportion of criminal damage offences at weekends could be explained by reductions in criminal damage during weekdays exceeding those observed at weekends, Table 4.12. By contrast in Croydon and in Guildford there was an increase between the baseline and post implementation periods in the number of weekend criminal damage offences alongside reductions in the number occurring during the week. By contrast, in Birmingham a modest increase in weekday offences of criminal damage occurred against essentially little change in the number of weekend offences resulting in the lowering of the concentration of criminal damage at weekends.

Baseline to post implementation period monthly changes in the number of criminal damage offences on weekdays and at weekends appear in the supplementary annex. Some distinctive patterns emerge. For example, the vast majority of changes in Nottingham were reductions in criminal damage. In Croydon, there were both increases and decreases but their magnitude was generally below that of the other case study areas.

As was the case with violence against the person, it was possible to compare the case study areas in terms of the overall pattern of change in criminal damage at weekends and on weekdays during the first year following the implementation of the Act. Thus the scenarios of monthly change in respect of criminal damage were as follows:

Both weekday and weekend increases in criminal damage:

- Weekend increases the most (Scenario A)
- Weekday increases the most (Scenario B)

Both weekday and weekend reductions in criminal damage:

- Weekend reduces the most (Scenario C)
- Weekday reduces the most (Scenario D)

No change or change in opposite direction

- One increases the other reduces- Weekend increases (Scenario E)
- One increases the other reduces- Weekday increases (Scenario F)
- No change in one or other (Scenario G)

These results are summarised in Figure 4.6.

The distinctive picture of monthly changes in weekend and weekday criminal damage was the relatively large number of cases where criminal damage fell during weekdays whilst rising at weekends (Scenario E). Almost a third of all monthly change across the five case study sites fitted this pattern. For example, in Guildford this happened in seven out of the 12 post implementation months. It also happened in Croydon for six of the 12 post implementation months. In both areas, this occurred far more in the winter and spring and in the summer and autumn.

There were few cases, in a given month, where weekday increases in criminal damage were accompanied by even greater weekend increases in criminal damage (Scenario A). It was also not very common to see weekday reductions in criminal damage outstrip weekend reductions (Scenario D) or to see weekday increases in criminal damage occur alongside weekend reductions in criminal damage (Scenario F).

Of all the areas, Nottingham was unique because in none of the post implementation months did weekday criminal damage exceed baseline levels.

Figure 4.6 Monthly patterns of weekday/weekend change in criminal damage

Scenario	Birmingham	Blackpool	Croydon	Guildford	Nottingham	All areas Criminal Damage	All Areas VAP
A	1	1	1	0	0	3	10
B	3	2	1	2	0	8	7
C	2	2	0	1	5	10	8
D	1	2	2	0	3	8	**12**
E	1	3	6	7	3	**20**	11
F	2	2	2	1	0	7	11
G	2	0	0	1	1	4	1
All	*12*	*12*	*12*	*12*	*12*	*60*	*60*
Months Weekends >Baseline	6	6	8	8	3		
Months Weekends < Baseline	5*	6	4	3	8		
Months Weekdays > Baseline	7	5	4	4	0		
Months Weekdays < Baseline	4	7	8	8	12		

Note: Figures in each cell are the number of months post implementation for each scenario
Bold denotes scenario with greatest number of months

GIS analysis

In addition to the macro level of analysis (entire study area), criminal damage offences were also analysed at the meso level (near to licensed premises) and micro level (inside or directly adjacent to licensed premises). The findings from these analyses are outlined below.

The relationship between offences and licensed premises

In all case study areas, the proportion of criminal damage offences taking place within 50 metres of premises and in the cluster areas was less than that of violence against the person offences. In Birmingham, approximately 30 per cent of all criminal damage offences took place within the cluster area. By way of comparison, in Croydon and Nottingham, this figure was approximately five per cent.

In Birmingham, almost 30 per cent of criminal damage offences took place within the 50 metre buffer zone. This figure was approximately ten per cent in Blackpool and between five and ten per cent in the remaining case study areas. These patterns changed little between the baseline and post implementation periods.

Spatio-temporal analysis

As with violence against the person offences, criminal damage offences were examined by proportional change in offences by time of day at a range of discrete geographical areas, namely the 50m concentric buffers, cluster area (concentration of licensed premises) and entire study area. For reasons stated earlier, the results presented in table 4.14 focus on the time period 9.00pm to 4.59am for three spatial areas, within 50m of licensed premises, in the cluster area, and in the entire case study area. For the entire case study area, and this was the case for four of the areas, there was little change in the proportion of criminal damage by time of day. The exception was Guilford, with a large increase between midnight and 0.59am. It is important to note that it is thought this may be due to an error in the recording of data as

opposed to an actual crime change. Analysis of all post implementation criminal damage offences recorded between midnight and 0.59 revealed that 64% of these occurred in the period midnight to 0.01. Note the default setting for unknown offences is often 0.00 (see technical appendix for further discussion). In the cluster area and within 50m of licensed premises, the direction of change was in the same direction as the case study area, although at some times to a slightly greater proportion. However the changes observed were minimal. When examining the volume of change (number of offences), this was also relatively small. Thus, it can be stated that the time of day of criminal damage offences was consistent between the baseline and post implementation periods.

In addition to this, offences were examined by time of day in each case study area, by weekday (midnight Sunday to 23.59pm Thursday) and weekend (midnight Friday to 23.59pm Sunday). The results of this analysis are discussed in more detail in the supplementary annex. Again, the results presented here (table 4.15) focus on the time period 9.00pm to 4.59am.

The timing of weekday and weekend offences

The timing of changes in criminal damage during weekdays and at weekends is shown in table 4.15. The format is the same as that for table 4.8, above.

There was very little change in the timing of criminal damage offences in Birmingham in the post implementation period compared with the baseline with only marginal changes in the number of offences in any one-hour. In Blackpool, there was a modest reduction in criminal damage between midnight and 1am on weekdays (down 67) and a slightly greater reduction at weekends (down 94).

There was very little change in Croydon. However, there were more noticeable changes in Guildford. In the latter there was a 10.6% increase in the share of criminal damage offences occurring between midnight and 1am at the weekends (an additional 124 offences compared with the baseline). Note as stated earlier this may be due to an error in the recording of the offence time rather than an actual change. There was also an increase in criminal damage between 1am and 2am but of a much smaller magnitude. In Nottingham, there were fewer criminal damage offences between 9pm and 1am on week day nights and a fairly modest increase between 1am and 3am at weekends.

Table 4.14 Proportional change in criminal damage offences by time and location in five case study areas (average baseline and post implementation periods)

	Birmingham						Blackpool						Croydon					
Time of day	Cluster		0-50m		Case study area		Cluster		0-50m		Case study area		Cluster		0-50m		Case study area	
	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change
2100-2159	0.7	3	0.3	3	0.6	7	0.1	-17	0.4	-5	-0.2	-77	1.5	-3	1.5	3	-0.1	-4
2200-2259	2.4	8	2.5	10	0.6	7	-0.8	-29	0.5	-5	0.1	-73	0.4	-7	0.4	-3	0.2	12
2300-2359	-1.5	-5	2.2	9	1.1	14	2.3	7	2.0	5	1.3	1	1.9	4	-1.0	-7	0.2	10
0000-0059	-1.0	-3	-1.6	-4	-0.2	-2	-2.1	-50	-1.3	-18	-1.5	-161	0.3	9	0.3	-2	0.5	25
0100-0159	-1.8	-6	-0.2	2	-0.4	-4	-0.4	-19	0.0	-7	0.3	-24	-0.4	2	-0.4	-4	-0.3	-12
0200-0259	-1.8	-6	-3.7	-10	1.0	13	-1.2	-28	-2.0	-19	-0.4	-56	-1.5	-5	-1.5	-8	0.1	6
0300-0359	0.8	3	-0.1	1	0.0	1	1.0	2	2.5	12	0.0	-23	-0.4	-4	-0.4	-3	-0.8	-41
0400-0459	0.9	3	2.6	10	-0.5	-5	-0.1	-6	0.3	0	0.1	-6	0.8	1	0.8	3	-0.3	-15

Time of day	Guildford						Nottingham					
	Cluster		0-50m		Case study area		Cluster		0-50m		Case study area	
	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change
2100-2159	-2.0	-6	-1.5	-2	-0.6	-8	0.5	-1	-1.5	-18	-0.1	-125
2200-2259	-3.0	-10	-3.4	-4	-2.1	-41	-0.9	-15	-1.9	-21	0.1	-103
2300-2359	-2.8	-9	-5.2	-6	-1.8	-34	-2.2	-27	-3.7	-36	-0.2	-116
0000-0059	6.6	27	9.4	14	8.9	195	0.5	-6	-0.5	-14	0.7	-41
0100-0159	1.3	6	2.4	4	1.6	37	-0.6	-11	0.4	-3	0.5	16
0200-0259	0.2	2	2.9	4	1.0	24	-0.4	-10	1.2	4	0.4	8
0300-0359	2.6	10	3.0	4	0.4	9	3.1	24	2.4	15	0.8	64
0400-0459	0.1	1	0.7	1	-0.1	-3	0	-2	0	-2	0.5	41

Table 4.15 Proportional change in criminal damage offences by time and location in five case study areas (average baseline and post implementation periods by weekday and weekend)

	Birmingham				Blackpool				Croydon			
Time of day	Weekday		Weekend		Weekday		Weekend		Weekday		Weekend	
	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change
2100-2159	2.1	13	-0.2	-1	-0.4	-48	0.0	-29	1.0	15.5	0.2	15
2200-2259	0.2	2	1.2	8	0.2	-37	0.0	-36	-0.3	-18.0	0.6	25
2300-2359	-0.9	-4	0.1	1	1.3	-4	1.3	5	0.3	1.0	0.6	26
0000-0059	0.2	2	-1.5	-9	-0.9	-67	-2.0	-94	0.2	0.5	0.6	22
0100-0159	-0.8	-4	-1.9	-11	0.2	-12	0.3	-12	-0.4	-14.0	0.3	14
0200-0259	0.2	2	-2.5	-15	-0.3	-21	-0.6	-35	-0.4	-12.5	0.1	7
0300-0359	1.1	7	0.0	0	-0.3	-15	0.2	-8	0.2	5.0	-0.1	1
0400-0459	0.0	0	2.0	12	-0.1	-8	0.3	2	-0.1	-3.5	0.3	10

	Guildford				Nottingham			
	Weekday		Weekend		Weekday		Weekend	
	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change
2100-2159	-0.2	-3	-1.0	-5	-0.3	-89	0.0	-36
2200-2259	-2.1	-23	-2.2	-18	0.3	-59	-0.1	-45
2300-2359	-1.6	-19	-2.0	-16	0.3	-35	-0.8	-81
0000-0059	7.1	72	10.6	124	0.2	-63	1.2	22
0100-0159	0.9	9	2.2	28	0.2	-11	0.9	27
0200-0259	2.4	24	-0.2	0	0.1	-10	0.6	18
0300-0359	0.1	1	0.7	9	0.4	14	1.1	50
0400-0459	-0.3	-4	0.0	1	0.3	13	0.6	29

Offence ratios

Criminal damage ratios in all areas were lower than violence against the person ratios and were lowest in Croydon and Nottingham (0.05 to 0.1) and highest in Birmingham (0.3 to 0.5). For all areas, there was no evidence of a change in criminal damage crime ratios following the introduction of the Act.

Hot spots

In all case study areas, hot spots of criminal damage were distributed over a wider area than the violence against the person hot spots. Hot spots generally corresponded to areas with licensed premises, but to a lesser extent than the violence against the person hot spots. Across all five case study areas, there was little evidence of change in the location of hot spots between the baseline and post implementation periods, although there were some instances where new hot spots emerged or where former hot spots were no longer present. Again more detailed land use data would have been useful here.

The KDE analysis revealed that there was some evidence of change to the spatio-temporal distributions of criminal damage hot spots post implementation. Across all five case study areas (in the key drinking areas and between 3.00am to 4.59am only) hot spots tended to occur more intensely in the post implementation period and remained until a later time period (or later into the early morning hours) and for longer periods of time. It should be noted that the hot spot analysis findings are drawn from visual interpretations of the hot spot maps.

Synthesis maps of change

KDE synthesis maps were used to compare change in criminal damage hot spots between the average baseline and post implementation periods, to compare these in a single map.

It is more difficult to pick out general trends in criminal damage than violence against the person. Generally there was little change overall, but there are pockets of areas with increases and decreases in criminal damage. This varies by time of day and case study area

Although in some instances these match key drinking areas, often they do not correspond with these. It is likely that changes to criminal damage often occur outside of the 9.00pm to 4.59am time period, and are unlikely to be attributable to the licensing Act. It is recommended that further contextual data, for example land use, be incorporated into future analysis to examine this further. Reasons why this has not been done in this research project were highlighter earlier.

In Birmingham there are some changes (reductions from 1.00am to 2.59am and increases from 3.00am to 4.59am) that correspond with the key drinking areas. In Nottingham and Croydon there are some reductions between 1.00am and 2.59am that correspond with the key drinking areas. In Guildford there are some reductions from 9.00pm to 10.59pm, and increases from 1.00am to 2.59am that correspond with the key drinking areas. In Nottingham there are some increases between 3.00am and 4.59am that correspond with the key drinking areas.

It is very difficult to link the changes in these synthesis maps with the time of day analysis of criminal damage in each case study area, as the effects are often concentrated geographically in small areas.

Sexual offences

The analysis of sexual offences was limited due to the small numbers involved (compared to violence against the person, criminal damage and calls for disorder. This is in part expected due to the low level of reporting of such offences (Walker et al, 2006)

Annual distribution of offences

The annual change between average baseline and post implementation sexual offences is shown in Table 4.16. This indicates that there were small increases in Birmingham and Nottingham (less than 10 offences) and a larger increase Croydon (approximately 50 offences). Blackpool and Guildford experienced reductions of approximately 50 offences). When pooling offences across all five areas, there was s reduction of 11 offences.

Monthly distribution of offences and offence rates

On the whole, monthly frequencies of sexual offences decreased in Blackpool and Guildford and increased in Croydon, while in Nottingham and Birmingham there was a relatively even split between months showing percentage increases and months which showed decreases. For most case study areas, patterns of sexual offences followed national trends of seasonal variation, with peaks during the summer months. Peaks appeared later in the summer for Croydon and earlier in the summer for Birmingham and Blackpool. The pattern of offences did not follow seasonal trends in Guildford.

Table 4.16 Percentage change* in monthly sexual offences

	Birmingham	Blackpool	Croydon	Guildford	Nottingham
December	-12	-42.1	-2.3	133	5.3
January	8.3	-73.9	1.8	-54.8	-30.6
February	0	42.9	-28.9	-40	-20.5
March	58.8	-9.1	86.7	33.3	-17.6
April	-16.7	69.7	5	-37.5	13.6
May	-11.1	75	20	-76	72.6
June	-25.9	-34.9	9.8	-46.2	59.1
July	26.3	7	5.9	-65.5	30.1
August	-33.3	-50	128.6	-45.5	-27.8
September	11.1	-52.6	56.8	-20	-27.3
October	57.9	-56.8	-9.8	9.1	28.4
November	8.3	-40.7	-10	100	-57.1
Total (average baseline) (N)	150	223	264	114	541
Total (post) (N)	156	181	312	86	546
Percentage Change	3.8	-23.2	15.4	-32.6	0.9

* Percentage change is based on average monthly baseline figures (2004/2005)

10 to 20% increase

> 20% increase

10 to 20% decrease

> 20% decrease

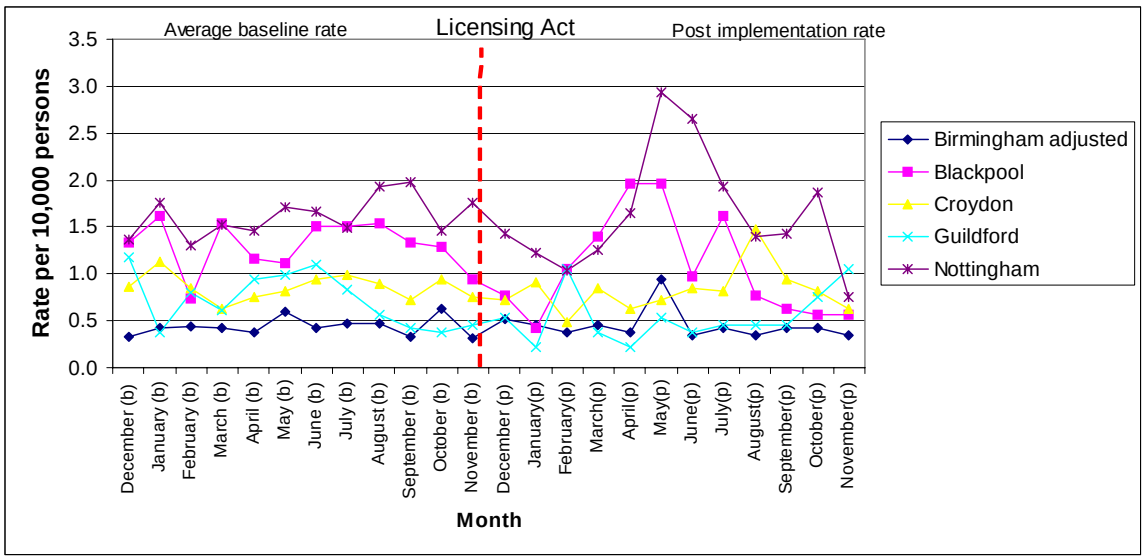
Offence Rates

Figure 4.7 depicts the average baseline and post implementation sexual offence rates for the five case study area.

For most case study areas, patterns of sexual offences followed national trends of seasonal variation, with peaks during the summer months. Peaks appeared later in the summer for Croydon and earlier in the summer for Birmingham and Blackpool. The pattern of offences did not follow seasonal trends in Guildford.

These rates were lowest in Guildford and Croydon and higher in Blackpool and Nottingham. Again the Birmingham rate has been reduced by a factor of ten for visualisation purposed. It is important to remember the population denominator used here is a different source as described earlier, thus care should be exercised when comparing it with other areas.

Figure 4.7 Sexual offence rates (average baseline and the post implementation)



Rates for sexual offences appear on the line graph in Figure 4.7. The numbers are quite small and there are some strong fluctuations over time. This makes it somewhat difficult to discern any meaningful changes. Aggregating the offences by time period produces a more easily interpretable set of statistics. These appear in Figure 4.8, below.

Figure 4.8 Changes in sexual offences (average baseline and post implementation)

	Birmingham	Blackpool	Croydon	Guildford	Nottingham	All Areas
Baseline Average	152	226	341	116	537	1372
Post Implementation (Dec 2005 – Nov 2006)	156	181	326	86	546	1295
Change	4	-45	-15	-30	9	-77
Percentage Change	2.6%	-19.9%	-4.4%	-25.8%	1.6%	-5.6%

As can be seen from the above table the frequencies are small, particularly in Birmingham and Guildford. Overall, across all five case study areas, there was a net reduction of 77 sexual offences up to a year following the Act compared with the baseline period.

The majority of case study areas saw a reduction in sexual offences during the post implementation year. In Blackpool and Guildford, these were quite sizeable amounting to a reduction of between one fifth and one quarter compared with the baseline period. However, it must be emphasised that numbers were particularly small and the decrease represented here are fewer than 50 cases in each location over an entire year.

In Nottingham and Birmingham there were very modest increases in a number of sexual offences which, in both cases, does not reach double figures.

The small numbers involved limit the number of useful analyses that can be performed, in particular, the number of meaningful cross tabulations that can be generated without succumbing to a large number of empty cells. This makes it virtually impossible from a statistical analysis point of view to assess how far the observed changes might have been influenced by the implementation of the Licensing Act. Therefore this assessment is not attempted here.

Day of week and time of day of offences

Offences tended to be higher during weekend periods. However, this pattern was less distinctive than with violence against the person and criminal damage. Trends for sexual offences by day of week did not change between the baseline and post implementation periods. In all areas, sexual offences were greatest between 11.00pm and 0.59am. The proportion of sexual offences by time of day was generally consistent between the baseline and post implementation periods, although due to the small numbers involved, it is difficult to examine this change by time of day. Due to small numbers, offences were not split by weekday and weekend.

Victim profile

Females were by far the most likely victims of sexual offences. The percentage of female victims varied from approximately 60 per cent in Croydon to over 90 per cent in Guildford (less than 5% of victims were unknown in both areas). For most case study areas, individuals aged 15 to 29 were most at risk of sexual offences. There was no evidence of a change in the profile of victims post implementation. The small numbers of offences precluded the use of the alcohol and domestic violence flags for sexual offences being broken down by age and gender.

GIS analysis

The small numbers involved precluded any examination of sexual offences at any levels smaller than the case study area.

Calls for disorder

Incidents were examined by year, month, day of week, and time of day, across the entire case study area. Both incident frequencies and incident rates (per 10,000 persons) were examined.

Annual distribution of incidents

Table 4.17 below indicates the annual incident counts. This shows that overall the annual change (average baseline to post implementation periods) was a small increase in Guildford (approximately 50 incidents), a small reduction in Nottingham of the same size, and sizeable reductions in Blackpool, Croydon and Birmingham (approximately 250, 500 and 1500 incidents respectively). Differences between weekend and weekday incidents are discussed later in this section.

Table 4.17 Calls for disorder annual incident counts by case study area (all time periods, weekday and weekend incidents)

Birmingham			
	Average Baseline	Post Implementation	% Change
Weekend	5191 **(53.9%)**	4337 **(53.2%)**	-16.5
Weekday	4428	3813	-13.9
All	9619	8150	-15.3
Blackpool			
	Average Baseline	Post Implementation	% Change
Weekend	10510 **(51.1%)**	10634 **(52.4%)**	1.2
Weekday	10044	9635	-4.1
All	20554	20269	-1.4
Croydon			
	Average Baseline	Post Implementation	% Change
Weekend	6320 **(52.3%)**	6010 **(52.2%)**	-4.9
Weekday	5750	5484	-4.6
All	12070	11494	-4.8
Guildford			
	Average Baseline	Post Implementation	% Change
Weekend	2501 **(50.5%)**	2670 **(53.4%)**	6.8
Weekday	2447	2326	-4.9
All	4948	4996	1.0
Nottingham[1]			
	Average Baseline	Post Implementation	% Change
Weekend	1552 **(51.5%)**	1518 **(51.2%)**	-2.2
Weekday	1459	1443	-1.1
All	3011	2961	-1.7

[1] Based on 8 months data

Notes: Figure in bold brackets the percentage of all incidents occurring at weekends

Monthly distribution of incidents

Table 4.18 shows the monthly percentage changes in calls for disorder incidents in the post implementation period compared to the average baseline period. The relevant disorder codes extracted from all calls for service are detailed in the technical annex.

In none of the five areas was there any evidence of sustained increases in calls for service (disorder). One of the areas (Birmingham) experienced over eight months of reductions greater than 10 per cent, while Guildford was the only area with five or more months of increases above 10 per cent. Birmingham had reductions across all 12 months, and Croydon across 10. Taken across all five case study areas, 33 per cent of months experienced

increases, and 67 per cent of months experienced decreases in incidents. In none of the months examined was there a consistent direction of change across all five case study areas. In December, January and February there were reductions in four of the five areas. Please note there are only eight months of data in Nottingham due to a change in the recording standards (see technical appendix for more details)

Table 4.18 Percentage change* in monthly disorder incidents

	Birmingham	Blackpool	Croydon	Guildford	Nottingham
December	-16.8	-11.3	-22.9	-9.6	
January	-22.5	-12.6	-26.4	-26.5	
February	-29.6	-18	-17.7	-29.1	
March	-15.1	-2	-7.8	27.3	
April	-20.4	-6.2	-9.1	9.7	-17.8
May	-3.6	8.5	-15.4	16.8	1.4
June	-13.3	7.5	-15.8	19.1	11.9
July	-17.8	-11	-9.1	-7.2	52.2
August	-11.5	16.9	3.6	10.8	-12.4
September	-2.9	6.9	-4.9	19.2	-8.5
October	-5.4	12.5	7.4	7.2	-36.5
November	-19.2	-10.1	-7.2	-15.8	14.6

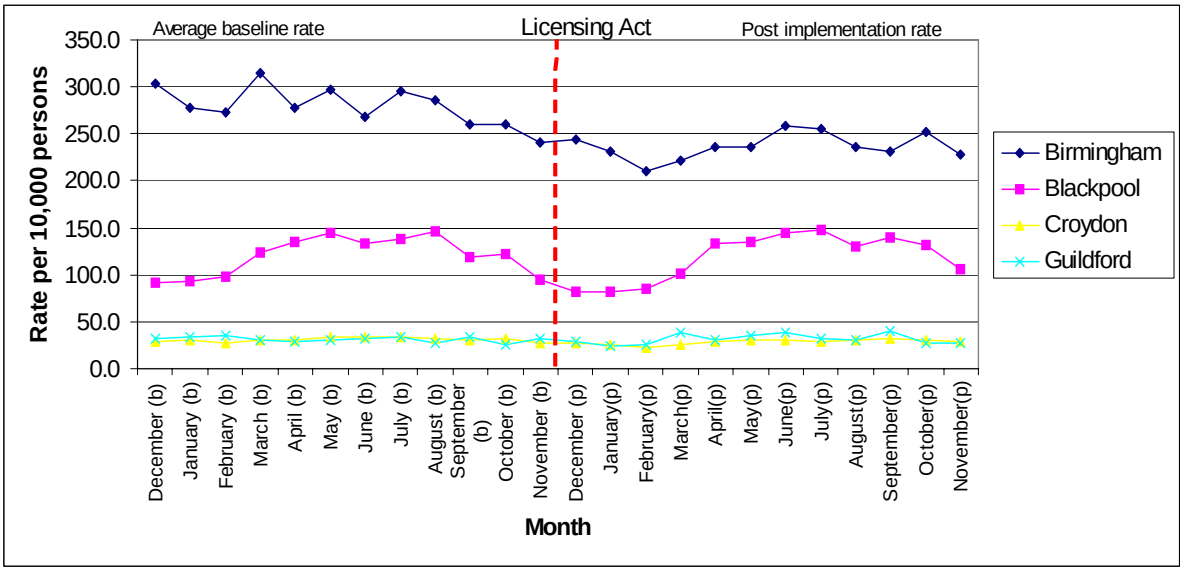
*Percentage change is based on average monthly baseline figures (2004/2005)

10 to 20% increase
> 20% increase
10 to 20% decrease
> 20% decrease

Incident rates

Rates for disorder incidents were produced for four areas as a rate per 10,000 persons (Figure 4.9). The Nottingham data is not graphed as the available data only covered an eight month period of comparable baseline and post implementation data. Rates were highest in Blackpool and comparable in Croydon and Guildford. Again, it is important to note a different population denominator is used for Birmingham, so care should be taken in comparing this rate with other study areas. The Birmingham data has not been adjusted for visual purposes.

Figure 4.9 Calls for disorder incident rates (average baseline and the post implementation)



Statistical analysis of change (baseline and post implementation periods)

Further analyses were carried out using independent t tests to establish any significant year on year differences in levels of calls for disorder in each case study area, and to look at trends over the three years. Independent tests were used as it is argued there is no basis for the first half of one year's incidents to influence incidents in the first half of a subsequent year. This was done by comparing the weekly distribution of six month's worth of calls for disorder data with that for the equivalent period in the previous year. The decision to split each year into two 26 week periods was made in order to add sensitivity to the analysis, and as full year comparisons may mask change due to internal seasonal fluctuations. Thus six half-yearly periods were constructed each containing 26 weeks of calls for disorder data. These were defined as follows:

- Baseline (Year 1 A) = 23rd November 2003 to 23rd May 2004
- Baseline (Year 1 B) = 24th May 2004 to 23rd November 2004
- Baseline (Year 2 A) = 23rd November 2004 to 23rd May 2005
- Baseline (Year 2 B) = 24th May 2005 to 23rd November 2005
- Post Implementation (Year 3 A) = 23rd November 2005 to 23rd May 2006
- Post Implementation (Year 3 B) = 24th May 2006 to 23rd November 2006

Four of these covered the baseline period prior to implementation of the Act (1A, 1B, 2A and 2B) and two of them fell into the post implementation period (3A and 3B). A total of 20 t tests, four for each case study area were carried out. The full results appear in the supplementary annex, but are presented in summary form in figure 4.10 below.

Figure 4.10 Changes in calls for disorder baseline to post implementation using statistical tests

	1A2A Yr1 Nov03 – May04 Yr2 Nov04 – May 05	1B2B Yr1 May04 – Nov04 Yr2 May05 – Nov05	2A3A Yr2 Nov04- May05 Yr3 Nov05 – May06	2B3B Yr2 May05 – Nov05 Yr3 May06 – Nov06
Birmingham				
Blackpool				
Croydon				
Guildford				
Nottingham				

Note in Nottingham the baseline covers the period 23rd April 2005 to 23rd November 2005 and the post implementation period covers the period 23rd April 2006 to 23rd November 2006.

Key

	Very Significant Increase 1% level p<0.01
	Significant Increase 5% level p<0.05
	No Significant Change
	Significant Decrease 5% level p<0.05
	Very Significant Decrease 1% level p<0.01

The t tests for disorder revealed no significant change in Blackpool either during the baseline period (i.e. for both the first and second half of the year) or throughout the year following implementation of the Act. The same result was obtained for Nottingham, although the t tests here compared only eight months post implementation data with the corresponding period in the baseline due to the absence of calls for disorder data for the full period.

The rising number of disorder calls in Guildford post implementation was reflected in a statistically significant t test ($t=-2.008$, $p < 0.05$) depicting a significant increase in disorder in the second half of the post implementation year. This was preceded by no significant change in the first half of the post implementation year. Thus six months following the Act disorder increased in Guildford.

In Birmingham and in Croydon the only significant change was a significant decrease in disorder. In Birmingham's case a very significant decrease began in the six months preceding implementation and continued throughout the first six months post implementation but this reverted to no significant change in the latter half of the year. In Croydon significant

reductions began well within the baseline year (first half of baseline, t=4.98 p< 0.01, second half of baseline t=3.665, p<0.01) but these were not sustained post implementation.

Insofar as the Licensing Act might have had an impact on disorder it certainly did not result in further statistically significant reductions in Croydon.

Calls for disorder incident rates for each area are shown on the line graph in Figure 4.9. Reductions in disorder in Birmingham are reflected in a clear lowering of the plotted line following implementation of the Act. The plotted line for Blackpool undulates throughout the baseline and post implementation periods reflecting seasonal variations in the reporting of disorder. The peaks can be identified in the summer and early autumn months (probably reflecting the holiday and illumination seasons) and the troughs, during the winter. However, it is also apparent that the average baseline rate for Blackpool is very similar to the post implementation rate, reflecting the absence of any statistically significant change in either direction as corroborated by the t test results.

Croydon and Guildford have markedly lower disorder rates than elsewhere, making the changes in their trajectory more difficult to detect on the line graph. What is clear, both from the graph and the t tests, is that the Licensing Act was not associated with a decrease in disorder in these two towns.

Day of week and time of day of incidents

Incidents in all case study areas tended to increase from Monday through to Thursday, and then peaked on Friday, Saturday, and Sunday. Friday and Saturdays were the peak days for incidents. The peak on Sunday may be due to incidents occurring after midnight in the early hours of Sunday morning. There was no evidence of any change to the day of calls for disorder post implementation.

There were some changes in the proportion of incidents by time of day across the entire case study area. In Birmingham there was a reduction between 10.00pm to 3.00am, and an increase from 3.00 am to 5.00am. In Croydon there was an increase from 5.00pm to 7.00pm, and reductions 8.00pm to 10.00pm and 3.00am to 5.00am. In Guildford there was an increase from midnight to 1.00am. It is important to note that it is thought this may be due to an error in the recording of data as opposed to an actual change in calls. Analysis of all post implementation calls for disorder offences recorded between midnight and 0.59 revealed that 45% of these occurred in the period midnight to 0.01. Note the default setting for unknown offences is often 0.00 (see technical appendix for further discussion). In Blackpool and Nottingham there was little evidence of change. Many of these changes occurred at times that one would not associate with a change in licensing hours, and further analysis is required to explain this occurrence. Additionally, the time of day of disorder calls was examined by proximity to licensed premises, and by weekday and weekend. The results of this are presented in tables 4.19 and 4.20.

Weekday and weekend incidents

Changes in the weekend and weekday calls for disorder appear in Table 4.17. In all five case study areas, the majority of calls for disorder (ranging from 50% to 54%) occurred on weekends both in the baseline and post implementation period. In most areas the proportion of all calls that were made on weekends barely changed. In Guildford there was a small shift from weekend calls accounting for 50.5 % in the baseline to 53.4% post implementation. Any changes worthy of comment only occurred in Guildford and Birmingham. The latter saw a sizeable reduction compared with the baseline position in the number of calls for disorder both at weekends and on weekdays (down 854 and 615 respectively). The greater reduction in weekend calls in Birmingham resulted in a slight lowering of the extent to which calls for disorder were concentrated at weekends.

In Guildford, there was a moderate rise in weekend calls of 6.8% (up by 169 on the baseline)

and an almost equally sized reduction in calls for disorder on weekdays, down 4.9% (Table 4.17).

Monthly changes (i.e. between the baseline and post implementation period) in calls for disorder at weekends and during weekdays appear in Section 4 of the Supplementary Tables Annex. As was the case with recorded crime, this size and direction of monthly changes have been classified in terms of the following mutually exclusive scenarios:

Both weekday and weekend increases in disorder calls:

- Weekend increases the most (Scenario A)
- Weekday increases the most (Scenario B)

Both weekday and weekend reductions in disorder calls:

- Weekend reduces the most (Scenario C)
- Weekday reduces the most (Scenario D)

No change or change in opposite direction

- One increases the other reduces- Weekend increases (Scenario E)
- One increases the other reduces- Weekday increases (Scenario F)
- No change in one or other (Scenario G)

The results of this analysis are summarised in Figure 4.11. All areas saw some months where week day reductions in disorder surpassed those at the weekends (Scenario D). There was a tendency for this to happen in the winter between December and March (see graphs for Blackpool, Croydon Guildford).

Figure 4.11 Monthly patterns of weekday/weekend change in calls for disorder

Scenario	Birmingham	Blackpool	Croydon	Guildford	Nottingham	All areas Disorder	All Areas Criminal Damage	All Areas VAP
A	0	3	0	5	1	9	3	10
B	0	2	1	1	2	6	8	7
C	6	0	3	0	2	11	10	8
D	2	5	3	4	2	**16**	8	**12**
E	2	1	2	1	0	6	**20**	11
F	2	1	2	1	1	7	7	11
G	0	0	1	0	0	1	4	1
All	*12*	*12*	*12*	*12*	*8**	*56***	*60*	*60*
Months Weekends >Baseline	2	6	3	7	3*			
Months Weekends < Baseline	10	6	9	5	5*			
Months Weekdays > Baseline	2	6	3	7	4*			
Months Weekdays < Baseline	8	6	9	5	4*			

Note: Figures in each cell are the number of months post implementation for each scenario
* Data for Nottingham covers just 8 months baseline and 8 months post implementation
** 56 months instead of 60 because of 4 fewer months for Nottingham

In Birmingham and Croydon the predominant picture was one of monthly reductions in disorder during the week and at weekends. Disorder at weekends was lower than in the baseline period for 10 of the 12 months in Birmingham and nine of the 12 in Croydon. A somewhat different pattern could be seen for Guildford. Here weekend and weekday disorder

was higher than the baseline for seven of the 12 months post implementation. This was the only area where for five out of the 12 months the increase in disorder at weekends exceeded that during the week (Scenario A). This was particularly true of the spring and summer months. Increases in disorder in the summer were also evident in Nottingham and Blackpool but not elsewhere.

GIS analysis

In addition to examining change at the macro level (entire study area), disorder incidents were also examined at the meso level (near to licensed premises) and micro level (inside or directly adjacent to licensed premises).

The relationship between incidents and licensed premises

In Birmingham, Blackpool and Guildford, approximately 30 per cent of all disorder incidents occurred within the cluster area, while in Croydon and Nottingham this figure was nearer 15 per cent. In Birmingham and Blackpool, approximately 20 per cent of disorder incidents happened within 50 metres of licensed premises. This figure was approximately 15 per cent in Guildford and 10 per cent in Nottingham. These proportions have changed little between the baseline and post implementation periods.

Spatio-temporal analysis

Incidents were also examined by time of day and location. Full results are presented in the annex. The results presented here (table 4.19) focus on the 50m buffer zone around licensed premises, the cluster area of premises, and the entire case study area, for the time period 9.00pm to 4.59am. For the most part, there was little change in the time of day of incidents following the introduction of the Act when examining change across the entire case study area at all times. However, there was some evidence of change at specific times, although this varied by case study area.

In Birmingham, Blackpool and Nottingham there were reductions in the proportion of incidents between 2.00am and 3.00am, and increases between 3.00am and 5.00am. Croydon experienced a reduction in the proportion of incidents between 1.00am and 2.00am. In Guildford there a proportional increases between midnight and 1.00am (note this may be an error in recording as stated above) and between 3.00am and 4.00am. However, when examining this change within the 50m area, the proportional change observed within 50 metres of premises and in the cluster areas was in the same direction, but at a greater magnitude than the general change in the case study area. This implies that change was greater within close proximity of licensed premises. The volume of change in table 4.20 shows the change in the number of incidents.

In addition to this, incidents were examined by time of day for each case study area, by weekday (midnight Sunday to 23.59pm Thursday) and weekend (midnight Friday to 23.59pm Sunday). The results of this analysis are discussed in more detail in the supplementary annex. Again, the results presented here (table 4.20) focus on the time period 9.00pm to 4.59am.

The timing of weekday and weekend incidents

The concentration and volume of disorder calls at weekends and during the week by hour of the night are displayed in Table 4.20. In Nottingham, there was virtually no change in the timing of disorder incidents either during the week or at weekends. In Blackpool and Croydon there were some modest reductions in disorder at night. In Blackpool these occurred between midnight and 3am on both weekdays and at weekends but were greater at weekends. In Croydon, there were reductions in disorder on weekdays between 11pm and 3am and greater ones at weekends particularly between 1am and 2am.

The greatest change in any area was in Guildford which registered a sizable increase in the number of disorder calls between midnight and 1am both during the week (6.3% more calls

than in the baseline) and particularly so at weekends (6.5% more calls than in the baseline, Table 4.20). Note again this may be subject to a recording error as previously acknowledged.

By contrast, the situation in Birmingham was one of falling levels of disorder throughout the night both during the week and at weekends. There was a sizeable reduction between 11pm and midnight and between 1am to 2am but the greatest fall occurred between 2am and 3am at weekends during which there were three per cent fewer calls compared with the baseline.

Table 4.19 Proportional change in calls for disorder incidents by time and location in five case study areas (average baseline and post implementation periods)

	Birmingham						Blackpool						Croydon					
Time of day	Cluster		0-50m		Case study area		Cluster		0-50m		Case study area		Cluster		0-50m		Case study area	
	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change
2100-2159	-0.4	-36	-0.3	-37	0.1	-67	0.2	27	0.7	45	0.4	40	0.4	-5	-0.1	-91	-0.4	-191
2200-2259	-0.5	-43	-0.4	-47	-0.2	-103	-0.2	0	-0.4	7	0.3	32	-0.1	-15	-0.3	-100	-0.1	-149
2300-2359	-1.7	-90	-2.0	-113	-1.4	-221	0.0	12	0.3	37	0.3	44	-1.0	-33	-0.2	-105	-0.3	-179
0000-0059	0.8	-25	-0.4	-73	0.3	-89	-0.9	-44	-0.7	3	-0.1	-51	0.3	-16	0.8	-23	0.8	-37
0100-0159	-0.4	-70	-1.7	-129	-1.3	-241	-1.7	-97	-1.4	-26	-0.5	-118	-2.2	-56	-0.8	-115	-0.3	-129
0200-0259	-2.8	-155	-2.2	-159	-2.1	-334	-2.4	-139	-3.0	-85	-0.7	-164	-0.9	-36	-0.2	-71	0.1	-70
0300-0359	2.4	34	1.7	25	1.0	5	2.6	179	4.1	177	0.9	177	-0.2	-11	-0.1	-34	0.1	-33
0400-0459	2.5	55	2.6	73	1.9	125	1.2	80	1.4	62	0.7	128	0.6	7	0.3	6	0.3	15

Time of day	Guildford						Nottingham					
	Cluster		0-50m		Case study area		Cluster		0-50m		Case study area	
	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change	Prop Change	Volume change
2100-2159	-0.2	-6	-0.3	2	-0.3	-12	-1.2	-24	-1.7	-14	0.5	13
2200-2259	0.9	12	-0.3	3	-0.3	-15	-1.4	-8	-1.2	-10	-0.6	-19
2300-2359	-0.7	-14	-2.9	-17	-0.6	-26	-3.4	-12	-3.1	-3	-0.6	-21
0000-0059	7.7	112	7.3	67	6.5	329	-2.4	-1	-1.3	0	-0.6	-21
0100-0159	-0.1	-5	-0.7	-1	-0.2	-10	-0.5	24	1.5	3	0.0	-3
0200-0259	0.1	-2	-1.8	-10	0.0	1	-4.7	7	-4.4	-4	-0.2	-10
0300-0359	2.2	33	3.5	30	0.5	28	2.8	-9	2.9	6	-0.8	-27
0400-0459	0.4	6	0.0	0	0.0	-2	1.2	6	1.4	8	-0.3	-13

Table 4.20 Proportional change in calls for disorder incidents by time and location in five case study areas (average baseline and post implementation periods by weekday and weekend)

	Birmingham				Blackpool				Croydon			
Time of day	Weekday		Weekend		Weekday		Weekend		Weekday		Weekend	
	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change
2100-2159	0.5	-11	-0.4	-57	0.1	-28	0.6	68	0.3	-64	-1.0	-127
2200-2259	-0.1	-41	-0.3	-62	0.1	-22	0.4	54	-0.9	-116	0.8	-33
2300-2359	-1.1	-87	-1.7	-135	0.2	-4	0.4	48	-0.4	-86	-0.3	-93
0000-0059	0.4	-24	0.2	-65	0.0	-22	-0.3	-29	0.6	-12	1.0	-25
0100-0159	-0.8	-72	-1.8	-170	-0.5	-67	-0.5	-51	0.3	-16	-1.0	-113
0200-0259	-0.9	-83	-3.0	-251	-0.5	-64	-1.0	-101	0.2	-11	0.1	-59
0300-0359	0.7	8	1.3	-3	0.8	67	1.0	110	0.2	-2	0.0	-31
0400-0459	0.6	14	3.1	112	0.4	33	0.9	96	0.3	10	0.4	6

	Guildford				Nottingham			
	Weekday		Weekend		Weekday		Weekend	
	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change	Proportional change	Volume change
2100-2159	0.9	9	-1.4	-21	-1.0	-20	-0.4	-15
2200-2259	-0.2	-14	-0.6	-1.5	0.6	4	-0.2	-13
2300-2359	-1.2	-36	-0.2	10	0.6	5	-1.4	-32
0000-0059	6.3	140	6.5	189	-0.4	-8	0.3	-4
0100-0159	0.2	0	-0.8	-10	-1.1	-18	1.5	17
0200-0259	0.0	-3	-0.2	4	-0.1	-3	-0.3	-10
0300-0359	0.2	3	0.8	25	0.4	5	-0.4	-9
0400-0459	-0.1	-3	0.0	1	0.2	2	0.9	12

Incident ratios

Incident ratios were generated to compare the concentration of calls for service (disorder only) inside the cluster area with those outside the cluster area. Ratios varied from 0.1 to 0.6 and were lowest in Croydon (0.1 to 0.2) and highest in Blackpool and Guildford (0.4 to 0.6). There was no evidence of a change in the incident ratios following the introduction of the Act.

In Blackpool, the incident ratio steadily increased over the three year period of analysis. In Guildford, Birmingham and Croydon there was no evidence of an increase or decrease in the calls for service (disorder only) ratio over the three years examined; while in Nottingham the incident ratio slightly reduced over the three year period analysed. It is important to note that the results of the Nottingham ratios may be skewed by the change in the recording of disorder codes in this area (see technical annex for further details).

Hot spots

A visual comparison of disorder only hot spots revealed that they followed similar patterns to criminal damage hot spots, and thus these have not been constructed for the purposes of this research due to time constraints.

5. Summary of findings from qualitative analysis

As was highlighted within the methodology section, the five case study areas were visited in three separate phases. Phase one (before the Act) for participant observation; phase two (two months post implementation) for participant observation and interviews; and phase three (twelve months post implementation) for further participant observation and interviews. Premises were selected based upon the level of violence against the person offences experienced at the time of each phase of research. For this reason, it was not possible to ensure that the same premises were visited for each phase. However, as the data presented within each annex reveals, there was some consistency between the three phases, allowing comparisons to be made over the fifteen month period of analysis.

Perceptions of levels of violence and disorder

Birmingham

Interviews with participants from Birmingham, both two months and twelve months after the Act, revealed that the majority felt that violence had not increased in the two years prior to the Act, or since the Act. Many respondents stated that it was difficult to differentiate between the impact of the Act and the additional measures which had been introduced in the city centre within a similar time period. Additional measures introduced included: marshalled taxi ranks, improved CCTV, more visible police presence, licensing and training of door supervisors and improved communication between licensees and police. It is important to note these additional measures may have been introduced as a direct response to the introduction of the Act.

Blackpool

Interviews with participants from Blackpool revealed mixed findings regarding levels of violence and disorder. The interviews conducted two months post implementation suggested that participants felt that violence had decreased over the two years prior to the Act and that this reduction had been maintained post implementation. Interviews twelve months post implementation were mixed. The general perception was that violence had stayed the same, but that drunk and disorderly behaviour, both inside their premise and in the city as a whole, had increased since the Act.

Croydon

The interviews which took place two months after the introduction of the Act revealed that the majority of participants felt that levels of violence had remained the same over the two year baseline period and that this level had been maintained. Participants were reluctant at this stage to attribute any change to the Act. However, one door supervisor felt strongly that violence had decreased because the strict licensing legislation was keeping problematic youths out of licensed premises: *"Violence and disorder is not as bad as it used to be, it is not every weekend, more like every second or third weekend".* The twelve months post implementation interviews revealed similar findings with all interviewees stating that there was very little violence or drunk and disorderly behaviour within their premise. In terms of the town centre as a whole, many felt that drunk and disorderly behaviour had increased, but clarified that this was not related to the introduction of the Act (participants attributed the increase to underlying social changes).

Guildford

The majority of interviewees commented that they felt that violence and disorder had decreased since the introduction of the Act. This was attributed in part to the Act i.e. the

staggered closing times, however, many expressed the view that reductions in levels of violence and disorder were a result of the excellent work conducted by the police.

Nottingham

There did not appear to be any consensus amongst participants regarding the levels of violence and disorder in Nottingham. Some felt that violence and disorder had increased; others felt it had decreased and others felt that it had stayed the same. Of those who felt that it had decreased, this change was attributed to the Act. Participants spoke of people behaving calmer and more relaxed whilst drinking. One general manager stated that: *"There is no traffic of people at certain times as they are not forced out of premises or wandering around. The friction has gone – people are in control of where they want to go".* Of those who felt that violence had increased, none attributed this change to the Act. The increase was seen as a general pattern which had been taking place for at least two years prior to the Act. One bar manager stated: *"Violence has increased in the past two years, not necessarily related to alcohol or the extended hours, just degradation of society in general. There has been no change in levels of violence and disorder since November 2005, just an increase in general."* A deputy manager agreed with this statement suggesting that: *"Violence and disorder has increased in recent years, November 2005 is irrelevant to the levels."*

Impact of the Act

Birmingham

Participants felt that the introduction of the Act had not increased their profit levels. Many participants expressed the view that customers only have a limited amount to spend and although they may stay out later than before the Act, they are not spending additional money. Participants did not comment on how the Act has influenced trading hours in this area.

Blackpool

Participants were generally positive about the Act, stating that it had contributed to a more relaxed atmosphere and increased feelings of safety within the city centre. Others felt that the concept that British people would start to drink more responsibly was naively optimistic. Only one participant claimed to have increased their profits since the Act, the majority expressed the view that customers only have a certain amount of money available so will either come out later or spend less when they are out. Participants did not comment on how the Act has influenced trading hours in this area.

Croydon

All premises visited had applied for and been granted extended licensing hours, however, not all made use of the hours they had been granted. In general, most premises opened for an additional hour on weekend nights, but not during the week. This varied across premises depending on closing times in the baseline period. Views regarding the impact of the Act were mixed, but generally the majority of respondents felt that the only impact upon their working practices was the ability (or necessity) to work longer hours.

Guildford

The majority of premises involved in the research had extended their opening hours, although this new closing time varied by premise. Furthermore, many did not use their full entitlement due to the prohibitive staff costs. One bar manager stated: *"Because people are drinking more responsibly and slowly they are not drinking more, it is therefore not cost effective to utilise than extra hour".* Another stated that: *"There is only so much people can drink. It gets to a point where they run out of money, or just stop and drink water like in clubs".* Participants

expressed the view that customers are coming out to drink later in the evening, resulting in a lull between 7.00pm and 9.00pm – a period which had previously been very busy.

Nottingham

Most premises which took part in the research had applied for extended hours. However, they rarely made use of the full hours available and usually opened one hour earlier and closed one to two hours later. Again the precise time varied by premise. Participants expressed the view that people were coming into town later in the evening, preferring to go home for a meal after work before embarking on a night out. In contrast to the other case study areas, the majority of licensees from Nottingham who took part in the research expressed the view that the extension in licensing hours had resulted in additional profit.

Relationship with the police

Birmingham

Interviews revealed that many participants felt that they had an excellent relationship with the police and that this had improved since the introduction of the Act. Participants spoke about communication becoming more formal and taking place on a routine basis, as opposed to the ad hoc nature prior to the Act. Participants were particularly positive about the Pubwatch scheme which they felt had improved communication between police, door staff and licensees.

Blackpool

The participants who took part in the fieldwork were not generally positive about their relationship with the police. Door staff in particular suggested that their relationship with the police was erratic and that communication had deteriorated since the introduction of the Act. Comments from door supervisors included: *"The police fail to reply to calls for assistance and are slow when they do".* Another stated that: *"The police are a necessary evil and can be heavy handed and intimidating".* Licensees and bar managers were more positive, but opinions were still split. Of the four licensees/bar managers who felt that their relationship with the police had changed since the introduction of the Act, two felt that it had improved and two felt that the relationship had deteriorated.

Croydon

Both door supervisors and bar mangers/licensees appeared to have a strong relationship with the police. Participants spoke highly of both the Pubwatch scheme and the Croydon Radio Against Crime (CRAC) scheme. Participants tended to report that there had not been a change in their relationship with the police since the introduction of the Act. However, several did speak of improved interaction and communication.

Guildford

Participants spoke very highly of the police and commended them as being both effective and approachable. Participants were also extremely positive about the Pubwatch scheme which they felt enabled them to share information with the police, other door staff and licensees. The majority of respondents felt that there was a greater police presence in the area since the introduction of the Act and that the police were better able to deal with incidents of violence and disorder as they were now staggered throughout the night.

Nottingham

The majority of respondents spoke highly of the police and stated that they see the police on a regular basis both formally (weekly or monthly) and informally (on a daily basis).

Participants also spoke highly of the Pubwatch and radio link schemes. Most respondents expressed the view that their contact with the police had increased since the introduction of the Act and that the city definitely had a greater police presence.

Moving in and out of the top 15

Unfortunately, of the 57 participants who took part in phase three of the research, only four answered the question which asked participants why they felt their premise had moved into the top 15 premises for violence against the person offences (if it had not previously been in the top 15), or why they felt their premise had moved out of the top 15 (if had previously been a high ranking premise). This question was designed to investigate both good and bad practice measures which may have impacted upon this change.

Of the two premises which had moved out of the top 15 (and answered the question), one respondent felt that the reduction in levels of violence against the person was due to extended licensing hours which they felt had led to a more relaxed atmosphere and staggered closing times. The second respondent felt that the reduction in violence was due to good management practices and the introduction of a female licensee who was better able to deal with drunk and disorderly customers.

Of the two premises which had moved into the top 15 (and answered the question), one participant felt that the increase in violence was due to an increased use of drugs. The second participant felt that the increase was due to violence taking place outside the venue which was unfairly linked to their premise.

Summary of findings from twelve-month post implementation interviews

Table 5.1 highlights the key findings from the interviews with bar and door staff in the five case study areas. The results reveal some interesting findings. These are outlined in the following section.

The majority of respondents in each of the five case study areas felt that levels of violence in *their premise* had stayed the same since the introduction of the Act (56 per cent of respondents from Birmingham, 68 per cent from Blackpool, 69 per cent from Croydon, 58 per cent from Guildford and 43 per cent from Nottingham). Very few respondents felt that levels of violence in *their premise* had increased since the introduction of the Act (none in Birmingham, Croydon or Guildford, 13 per cent in Blackpool and 14 per cent in Nottingham).

In contrast, higher proportions of respondents felt that levels of violence *in the town/city* where their premise was located had increased (33 per cent in Birmingham, 27 per cent in Blackpool, 54 per cent in Croydon, 17 per cent in Guildford and none in Nottingham). Nottingham was the only case study area where a higher proportion of respondents felt that violence *in their premise* had increased since the Act (14%), compared to *the town/city* as a whole (0%).

In general, respondents from each of the areas tended to feel that levels of drunk and disorderly behaviour had stayed the same since the introduction of the Act (44 per cent of respondents from Birmingham, 47 per cent from Blackpool, 15 per cent from Croydon, 42 per cent from Guildford and 57 per cent from Nottingham).

Blackpool and Croydon were the only areas where a greater proportion of respondents felt that levels of drunk and disorderly behaviour had increased (than stayed the same) since the introduction of the Act. 53 per cent of respondents from Blackpool felt that levels of drunk and disorderly behaviour had increased, 47 per cent felt that they had stayed the same. In Croydon, 23 per cent of respondents felt that levels of drunk and disorderly behaviour had increased since the Act, 15 per cent felt that they had stayed the same.

When asked about the use of weapons, Birmingham and Guildford revealed positive results. None of the respondents from Birmingham and Guildford felt that the use of bottles/glasses

as weapons had increased (since the Act), and none felt that the use of knives or firearms had increased. The findings from Blackpool, Croydon and Nottingham were less positive. In terms of bottles/glasses, 27 per cent of respondents from Blackpool felt that their use as weapons had increased since the Act, as did 31 per cent from Croydon and 14 per cent from Nottingham. In terms of knives, 27 per cent of respondents from Blackpool felt that their use had increased, as did 38 per cent from Croydon and 29 per cent from Nottingham. In terms of firearms, 13 per cent of respondents from Blackpool felt that their use had increased (since the Act), as did 31 per cent from Croydon.

In terms of violent incidents, Blackpool and Croydon again revealed the most negative findings. Twenty per cent of respondents from Blackpool and 15 per cent from Croydon stated that the number of violent incidents they had had to deal with had increased since the Act. This was compared to none in Birmingham, Guildford and Nottingham.

When asked whether the Act had resulted in staggered closing times, Nottingham revealed the most positive findings. Fifty seven per cent of respondents from Nottingham felt that the Act had resulted in staggered closing times compared to 33 per cent of respondents from Birmingham and Blackpool, 23 per cent from Croydon and 42 per cent from Guildford.

When asked whether the Act had resulted in people drinking more responsibly, the findings were mixed. Almost a third (31%) of respondents from Croydon, 27 per cent from Blackpool, 22 per cent from Birmingham, 14 per cent from Nottingham and only eight per cent from Guildford felt that it had.

Respondents from Nottingham and Guildford were most positive about the Act, with 86 per cent of respondents from Nottingham and 50 per cent from Guildford saying that they felt that the Act was a good policy. This was compared to 46 per cent of respondents from Croydon, 33 per cent from Blackpool and 33 per cent from Birmingham.

Overall, both Guildford and Birmingham revealed the most positive findings. None of the respondents from Birmingham felt that violence within their premise had increased since the Act; only 11 per cent of respondents felt that levels of drunk and disorderly behaviour had increased since the Act and none felt that the use of weapons (either bottles/glasses, knives or firearms) had increased since the Act. Similarly, none of the respondents from Guildford felt that violence within their premise had increased since the Act; only 17 per cent of respondents felt that levels of drunk and disorderly behaviour had increased since the Act and no respondents felt that the use of weapons (either bottles/glasses, knives or firearms) had increased since the Act.

Overall, Croydon and Blackpool revealed the least positive findings. Thirteen per cent of respondents from Croydon felt that violence in their premise had increased since the Act; 53 per cent felt that drunk and disorderly behaviour had increased since the Act, 27 per cent felt that the use of bottles/glasses and knives had increased since the Act and 13 per cent felt that the use of firearms had increased. In addition, 20 per cent of respondents felt that the number of violent incidents which they had had to deal with had increased since the Act. Similarly, although 0 per cent of respondents from Blackpool felt that violence in their premise had increased since the Act; 23 per cent felt that drunk and disorderly behaviour had increased since the Act, 31 per cent felt that the use of bottles/glasses and firearms had increased since the Act and 38 per cent felt that the use of knives had increased. In addition, 15 per cent of respondents felt that the number of violent incidents which they had had to deal with had increased since the Act.

Table 5.1 Summary of findings from interviews conducted *twelve months* post implementation

	Birmingham	Blackpool	Croydon	Guildford	Nottingham
Number of participants (N)	**9**	**15**	**13**	**12**	**7**
Percentage of respondents who stated that violence *in their premise* had increased since the Act	0%	13%	0%	0%	14%
Percentage of respondents who stated that violence *in* their premise had decreased since the Act	44%	13%	23%	33%	0%
Percentage of respondents who stated that violence *in their premise* had stayed the same since the Act	56%	68%	69%	58%	43%
Percentage of respondents who stated that violence *in the town/city* had increased since the Act	33%	27%	54%	17%	0%
Percentage of respondents who stated that violence *in the town/city* had decreased since the Act	56%	7%	7%	42%	14%
Percentage of respondents who stated that violence *in the* town/city had stayed the same since the Act	11%	60%	23%	33%	57%
Percentage of respondents who stated that levels of drunk and disorderly behaviour had increased since the Act	11%	53%	23%	17%	14%
Percentage of respondents who stated that levels of drunk and disorderly behaviour had decreased since the Act	33%	0%	0%	33%	29%
Percentage of respondents who stated that levels of drunk and disorderly behaviour had stayed the same since the Act	44%	47%	15%	42%	57%
Percentage of respondents who felt that bottles/glasses being used as a weapon had increased since the Act	0%	27%	31%	0%	14%
Percentage of respondents who felt that the use of knives had increased since the Act	0%	27%	38%	0%	29%
Percentage of respondents who felt that the use of firearms had increased since the Act	0%	13%	31%	0%	0%
Percentage of respondents who stated that the number of violent incidents they had had to deal with had increased since the Act	0%	20%	15%	0%	0%
Percentage of respondents who felt that the Act had led to staggered closing times	33%	33%	23%	42%	57%
Percentage of respondents who felt that the Act had led to people drinking more responsibly	22%	27%	31%	8%	14%
Percentage of respondents who stated that they felt that the Act had been a good policy	33%	33%	46%	50%	86%

6. Synthesis of findings

This study has examined violence, criminal damage, sexual offences and calls for service in five case study areas. Baseline positions have been established for each area for both baseline and post-implementation periods. These have been established using police data, records from the ambulance service and A&E units and through site visits to individual licensed premises and town centres.

Comparisons have been carried out between the baseline and post implementation periods. Data have been produced for up to one year following the Act and these have been carefully scrutinised to identify any key changes.

The analysis has examined baselines and subsequent changes occurring on a number of scales. These include at the entire case study area level, within and immediately adjacent to areas of concentrated drinking in each location (i.e. the main pub and nightclub clusters in each town) and in individual licensed premises characterised by high levels of violence.

The qualitative fieldwork has examined some of the contextual conditions and local circumstances operating in the case study areas. This has added to the quantitative component by providing insights into changes not picked up through other analyses.

The challenges involved in measuring the impact of the Act have been discussed at length elsewhere in this report. The primary difficulty has been the universal applicability of the reforms which have made the definition of a true counterfactual impossible. This has been compounded by the inability to obtain comprehensive information on licensed premises in terms of their baseline operating hours, current *used* hours and their capacity. However, it has been possible to capture some data on actual hours *used* for licensed premises with the highest levels of violence. For other premises, estimates of additional opening hours have been produced based on the difference between conventional baseline opening hours and post implementation hours *applied for*. The estimates that have been derived of changes in operating hours are no substitute for the real data but they do at least give an indication of what might have changed in terms of alcohol availability in these areas post implementation.

An additional difficulty, faced by this research, is this being able to attribute change to the intervention. This has been particularly problematic because the changes introduced by the Act have been ubiquitous and a number of additional policing and other initiatives (e.g. AMEC) have been run simultaneously in several case study areas.

Notwithstanding these limitations, a number of important findings have emerged from the study about changes in crime and disorder following the implementation of the Act. These are discussed below by crime type and incident category.

The dynamics of violence against the person

Overall and weekday/weekend changes

A key question is whether the introduction of the Act has resulted in changes to levels of town and city centre violence against the person, as one of its intentions was to reduce this. When pooling the data across all five areas, it was apparent that there was a 2.8% reduction between the average baseline and post implementation periods. However this varied between weekdays (defined as 0.01am Monday to midnight Thursday) and weekends (0.01am Friday to midnight Sunday). There was a 4.4% overall reduction at weekdays, and this was only 1.2% at the weekend.

There was a varied picture evident when examining change at the individual case study level. For all days of the week, overall violence against the person was reduced post implementation compared to average baseline in Croydon and Blackpool (by 13.4% and

9.6%, respectively) but rose in Guildford, Birmingham and Nottingham (by 11.5.4%, 6.7% and 2.8 % respectively).

Across the five case study areas a total of 60 post implementation months were examined. Half of them showed increased levels of overall violence against the person and the remainder showed reduced levels (compared with baseline). The picture across the five individual case study areas was a mixed one. There was a contrast between Croydon and Blackpool, where violence fell compared with baseline for ten of the 12 months post implementation and Guildford, which had the reverse pattern - an increase in violence for ten out of the 12 months following the Act. Nottingham and Birmingham also saw violence generally increase post implementation.

Statistical significant tests (independent t tests) were run to examine whether any changes detected in violence against the person in the baseline and post implementation periods were significant. Due to seasonal fluctuations in crime during the year, and to increase the robustness of the findings, the two baseline years and one year of post implementation data were split into half year periods, thus there were four time intervals under consideration in the baseline period and two in the post implementation period. The times were as follows:

- Baseline (Year 1 A) = 23rd November 2003 to 23rd May 2004
- Baseline (Year 1 B) = 24th May 2004 to 23rd November 2004
- Baseline (Year 2 A) = 23rd November 2004 to 23rd May 2005
- Baseline (Year 2 B) = 24th May 2005 to 23rd November 2005
- Post Implementation (Year 3 A) = 23rd November 2005 to 23rd May 2006
- Post Implementation (Year 3 B) = 24th May 2006 to 23rd November 2006

Statistical analyses (t tests) indicated that most of the post implementation period was characterised by either the absence of any significant change or a statistically significant reduction in violence against the person compared with the baseline. Only one statistical test identified a significant increase in violence and that was in the second half of the post implementation period for Guildford (comparing November 2005 through May 2006 with November 2004 through May 2005).

Within this overall picture of negligible change and significant reductions in violence, there were some variations. Birmingham did not experience any significant change either during the baseline or through the post implementation period, whereas, in Croydon significant reductions in violence against the person occurred in the six months leading up to the Act and for the first six months post implementation. The reductions in this case might reflect the continuation of a pre-existing trend rather than a direct result of the Licensing Act. Nottingham moved from a position of no significant change, preceding the Act, to significant reductions in violence against the person in the first six months following implementation although this was not sustained thereafter.

The extent to which changes in violence coincided with other events was also examined. In particular, relationships were explored between monthly changes in violence against the person and the implementation of alcohol misuse enforcement campaigns (AMEC) as well as the possible impact of the World Cup competition held in the summer of 2006. In Blackpool, Guildford and to a lesser extent Nottingham, there was an overlap between the running of these campaigns and reductions in violence against the person. The picture in Nottingham was mixed, although small decreases in violence against the person corresponded with the operation of the first AMEC and a smaller ‘Mini AMEC’ during the summer months. This was not repeated for other AMEC operations taking place in the City. Neither in Birmingham nor in Croydon was there any correspondence between the running of these campaigns and reductions in violence against the person. It is possible that the running of AMECs and their heightened police activity may have had an increase on the number of offences recorded. However it is clear that id did not have a consistent influence across all five areas, and there was insufficient data to identify any causal relationship.

A similar situation was identified with regards to the World Cup competition. In three areas (Birmingham, Nottingham and Guildford) this period of time corresponded to increases in

violence against the person. In Blackpool the event coincided with a reduction in violence against the person. Even when offences appeared to move in the expected direction, this could be coincidental and attributable to any number of influences, and again, there was insufficient data to identify any causal relationship.

The research enabled a more in-depth picture to be generated of variations in violence against the person in the case study areas by examining change both geographically and temporally.

Changes in the timing of violence

Differences in the timing of violence between the baseline and post implementation period were examined both within the case study areas and in areas within close proximity of licensed premises (pub clusters).

The magnitude of change in the frequency of events by time of day was examined for both the average baseline and post implementation periods. This analysis showed that not every area saw the same change in terms of the timing of incidents. However, there were some clear patterns that a number of areas shared. For example, all areas except Nottingham saw a reduction in the number of incidents between 11:00pm and midnight. Every case study area, with the exception of Croydon, saw an increase in the number of violence against the person incidents occurring between 3.00am and 3:59am and between 4.00am and 4.59am. The increase between 3.00am and 3.59am was substantial (e.g. exceeding 45 per cent on the baseline) for all four areas. It is acknowledged that a relatively small proportion of crime occurs at this time of day but the volume increases (+91 in Birmingham; +114 in Blackpool; +27 in Guildford; and+87 in Nottingham) are noticeable, and did increase the proportion of crime that occurs between 3.00am and 3.59am.

Croydon was the only area to have witnessed a reduction in violence against the person throughout the evening and night, reflecting the substantial fall in violence against the person post implementation. The statistical tests suggest Croydon also experienced a significant reduction in violence against the person in the six months leading up to the act also. These findings suggest a shift in the timing of violence against the person, (following the introduction of the Act) from earlier in the night, to later in the night/early hours. This is reflected in a proportional change in violence against the person offences by time of day.

Examining change in the proportion of offences by time of day revealed a number of important findings. In Nottingham, Blackpool and Birmingham, there were large decreases in the proportion of offences between 2.00am and 2.59am and in the following one hour period these areas saw large increases. In Guildford, this reduction occurred between 11.00pm and midnight, with subsequent proportional increases between midnight and 1.00am, and 2.00am and 3.00am. Croydon experienced reductions between 1.00am to 1.59am. This is suggestive in some areas of a displacement of offences to a later time period, coinciding with the change in licensing hours. Moreover, when examining this change within 50m of licensed premises, these changes occurred in the same direction but at a greater magnitude than in the case study area, implying the change was greater close to licensed premises. For example in Blackpool in the case study area there was a 2.7% reduction in the proportion of crime occurring (-214 offences). Within the cluster area (high concentration of licensed premises) this proportion reduced by 4.8% (-145 offences). In the following hour, there was then an increase in the case study area in the proportion of offences by 3% (114 offences). Within the cluster area this proportional increase was 6.1% (117 offences).

The fact that these patterns were similar across different case study areas suggests that the changes introduced as part of the Act have been accompanied by observable one hour temporal displacements of violence within the immediate proximity of drinking establishments. In Nottingham, Birmingham and Blackpool this shift has been from 2.00am-2.59am to 3.00am to 4.59am. It is suggested this ties in with changes in closing times here. In Guildford there were reductions 11.00-11.59pm and increases 2.00-2.59am. In Croydon there were reductions from 1.00am-1.59am but no obvious increases. In all areas, with the exception of Croydon, changes were most marked in the 0-50 metre zone than at greater distances from

the licensed premises. This indicates that the changes in the timing of violence were subject to a distance decay effect; that is, the further the distance from the main concentration of licensed premises, the less pronounced the effect.

Many of the changes in the timing of violence during the week also occurred at weekends but to a greater extent. For example, Croydon saw falls in violence against the person between 11pm and 3am, both during the week and at weekends, but the magnitude of the change was greatest at the weekend. In Blackpool, reductions in violence against the person were observed between midnight and 3am both during the week and at the weekend but as in Croydon, reductions were greatest during the weekend. In Birmingham, there was a modest reduction in violence on weekday nights between 1am and 2am and between 2am and 3am but this was stronger during the weekends.

However, where there were increases in violence on weekday nights there was also a tendency for these to be greater at weekends reflecting the relatively high volume of incidents concentrated at the weekend. Around half of all violence against the person offences occurred during the weekend. In Blackpool, 56.2% of all such offences occurred at weekends. The post implementation period saw a marginal increase in these levels of concentration in most areas.

There were clear seasonal variations in changing levels of violence at weekends. For example, in Blackpool, post implementation increases in weekend violence tended to occur in the winter and early spring. It is encouraging that the post implementation period reductions in violence against the person in Blackpool occurred during the busy summer and autumn seasons. This may well be a reflection of the impact of the Licensing Act and any additional policing associated with its implementation.

The concentration of violence

Changes were also monitored in the extent to which violence occurring in town and city centres was concentrated within the main pub clusters and in the immediate environment surrounding them. The pub clusters varied in how much town centre violence against the person occurred within them. The greatest concentration of violence within any cluster was in Blackpool where just over two fifths of all violence against the person occurred within the pub cluster. This was closely followed by Guildford and Birmingham. In the latter, just over one third of the violence was concentrated within the pub cluster. Croydon had the lowest concentration of violence within its pub cluster at around 10 per cent and Nottingham saw reductions between of between one fifth and one quarter of all violence occurring within its cluster.

In Croydon during the post implementation period, there was a reduction in violence against the person, a slightly lower degree of concentration of offences within its main drinking areas and overall a reduction of 2.5 per cent in the number of assaults registered at A&E Units. Here the Act has coincided with a number of reductions. However, violence against the person offences were also reducing prior to the introduction of the Act.

The top 15 licensed premises

The research also identified a considerable degree of concentration of violence against the person offences in a relatively small number of drinking establishments. For example, in Guildford, the 15 pubs with the highest crime contained 79 per cent of the violence (down from 85 per cent in the baseline); in Blackpool they accounted for 65 per cent of the town centre's violence against the person (up from 57% in the baseline) and in Nottingham they accounted for 40 per cent (no change on the baseline).

Many of the establishments that fell into the top 15 in the baseline period were also members of this group post implementation. In Blackpool, Guildford and Nottingham, 12 of the pubs falling into the worst 15 for violence against the person within the baseline period, also occupied this category post implementation; 11 did so in Birmingham. Once again, Croydon was the exception in that just eight licensed premises occupied the top 15 in both time

periods. This indicates that there was a degree of change in Croydon post implementation and this coincided with other changes that have been discussed above (see individual annex). Caution should be exercised here as some of the top 15 ranked premises for the baseline period were closed for part or all of the post implementation period.

Whilst the lack of relative improvement reflected in many establishments remaining in the top 15 is a concern (because it flags up a chronic problem in a small number of establishments) it also presents an opportunity whereby targeted crime prevention could resolve a high proportion of the violence against the person problems. If violence against the person was more ubiquitous, both spatially and temporally, preventive action would need to be spread very thinly on the ground. This would be more resource intensive to implement. Further weight is added to this by the fact that many of the premises ranked in the top 15 were located in areas that were hot spots of violence against the person both baseline and post implementation.

Hot spots

Another development associated with the changes that took place in several case study areas was the extended lifespan given to hot spots, located around the key drinking areas of the town centres, into the early hours of the morning. This change was seen in the post implementation period.

In Blackpool and Birmingham, this phenomenon was associated with the emergence of new hot spots very late at night which were not in evident in the baseline period. In the other areas, the intense hot spots remain in the town centres whilst other hot spots clearly visible in the baseline period disappear. This does not necessarily represent a negative change, but rather, a change in the geography and durability of crime clusters in central drinking circuits.

A new technique of synthesis mapping (where the change over time between baseline and post-implementation hot spot maps is summarised on a single map) revealed that most of the reductions and increases in violence against the person corresponded with the location of licensed premises concentrated in the key drinking areas.

There was some evidence that violence against the person hot spots located within the key drinking areas of town/city centres remained visible later into the early night/early hours post implementation compared with the baseline period.

Additional operating hours and violence

The Resource Targeting Tables that identified the highest crime establishments were used to help target the fieldwork for this study. Where possible, fieldworkers identified the actual hours of opening in the high crime premises. These were compared with the additional hours applied for. In most areas, premises used on average half of the additional hours which they had applied for. This varied across the case study areas. For example, for Guildford this figure was 55 per cent, compared with 35 per cent in Nottingham.

Using data on known operating hours for pubs with the highest level of violence (the top 15), the research found that where they were using for six or more additional hours per week (compared with the baseline period) their concentration of violence increased, whilst those using five or fewer additional hours saw a decrease in their concentration of violence.

This proved to be the case in all case study areas with the exception of Nottingham. In some areas, the increase in the share of violence among licensed premises opening for six or more additional hours was sizeable. In Guildford, licensed premises in this category increased their share of violence against the person from 34 per cent in the baseline period to 54 per cent post implementation. In Croydon, the share of violence against the person offences accounted for by this group of establishments rose from 40 per cent to 49 per cent.

It was not possible to identify actual operating hours for entire case study areas. Instead estimates of the number of additional hours were used. In all five case study areas a different

result emerged, namely that there was no change in the concentration of violence between pubs estimated to be open for nine or more hours compared with those estimated to be open for eight or fewer hours.

These results were at odds with the findings for pubs where the net additional hours were known. This is more likely to be an indicator of the added value of using real data (compared with relatively crude estimates) rather than a real difference between the groups of pubs concerned. The lesson here is that estimated data is no substitute for real data and the collection of basic information on service delivery outlets, such as licensed premises and nightclubs, should be a priority for Local Authorities and the Police.

A&E and ambulance service data

One of the drivers behind obtaining data on assaults from the ambulance service and A&E units was to address the problem of under-reporting of violence.

Once these data were processed to eliminate accidental injuries and health conditions, the number of assaults was relatively small. In Blackpool, Birmingham and Croydon there were between two and three times as many recorded offences of violence against the person as assaults. In Guildford the number of violence against the person offences out numbered A&E department assault counts more that seven fold and a similar differential was identified between police and ambulance service data in Nottingham. The inability to link police recorded crime data with data from these agencies meant that it was not possible to use such data to estimate the true level of violence in these town and city centres. However, it does provide an alternative measure of violence, which may not actually be reported to the police.

Furthermore, the trajectory of assaults data from these sources was often the reverse to that of violence against the person. The greatest anomalies were found in Guildford, where violence against the person rose by over ten per cent and assaults fell by over a third, and in Blackpool where violence against the person fell by nine per cent and assaults rose by more than 18 per cent. Only in Croydon and in Nottingham were the trajectories in the same direction. Thus, in Nottingham violence against the person and assaults went up by 2.8. per cent and 5.6 per cent respectively, and in Croydon, where both registered a decline (minus 13.4 per cent and minus 2.5 per cent respectively). There were some post implementation increases in assault between 3.00am and 4.49am.

Whilst the violence against the person data was directly linked both by location and by flags to licensed premises, the circumstances or contexts surrounding A&E and ambulance service assaults were less clear. However, there is evidence that the timing of attendance has shifted to later premises. One cannot rule out the operation of two distinct mechanisms influencing the figures. The police data are likely to reflect incidents connected with licensed premises. However, the observed increase in assaults from A&E and ambulance sources might be attributable to the consumption of alcohol in the home or at other locations leading to assaults. Furthermore, the period of analysis has coincided with changes in General Practitioner contracts that have restricted call-outs to residential premises by doctors' out-of-hours. This is likely to have led to an increased number of victims of violence attending A&E units or been taken to hospital by the ambulance services. In the absence of any firm evidence of the operation of this process, it is not possible to be conclusive. This clearly would be an appropriate area for further research.

Other measures of change

As the discussion of the violence against the person has indicated, there were a number of changes between the baseline and post implementation periods that could feasibly have been influenced by changes in licensing hours. The availability of additional information about the number of additional hours used per week provided some interesting insights into possible links between the additional availability of alcohol and changes in the timing of violence.

With the other indicators used in this research, namely, criminal damage, sexual offences and disorder, there is far less evidence of change between the baseline and post implementation

periods. The changes that are observed often take place at times and in locations that would not be expected to be influenced by the changes in the operating hours of licensed premises.

In view of this, there is little advantage to be gained in re-examining, in any depth, the changes that are discussed at length in the Annexes. Therefore, a few illustrative examples should suffice.

Criminal damage

The study's analysis of criminal damage revealed some important differences as compared with violence against the person.

Criminal damage fell in every month of the post implementation period in Nottingham and in nine out of the 12 months in Blackpool. In Birmingham, it increased in eight of the 12 months and markedly so in June and October.

With the exception of Nottingham, there is no statistically significant change in criminal damage in the post implementation period. In Blackpool significant decreases in criminal damage in the baseline period were not sustained post implementation.

Criminal damage did reduce significantly throughout the post implementation period in Nottingham. This was preceded by a statistically significant increase in criminal damage in the baseline period. Thus in Nottingham, the Licensing Act coincided with significant reductions in criminal damage but did not do so anywhere else.

In all areas, criminal damage was markedly less concentrated in the pub clusters and within 50 metres of licensed premises than violence against the person. There was also less of a distinctive pattern of change in criminal damage by hour of the day than for violence against the person.

In all areas, the ratio between criminal damage in the pubs cluster and that in the remainder of the case study areas was highly stable across time periods. This suggests that observed changes in the main drinking areas of each site were in line with those in the rest of the town centres. The daily distribution of criminal damage offences during the post implementation period retained a similar pattern to the baseline.

In most areas, the observed changes to criminal damage by hour of the day were marginal and this applied to areas immediately adjacent to and those further away from the central pubs cluster. Again this contrasts with the findings from violence against the person offences. In the majority of areas, few changes in rates of criminal damage were observed in the time periods that would be most affected by typical extensions to licensing hours.

However, there was one exception to this. In Guildford, there was a particularly large proportional increase in the number of criminal damage offences taking place between midnight and 0.59am. It is likely this was due to data error. As a result, the peak period for criminal damage shifted from between 6.00pm and 6.59pm in the baseline period, to between midnight and 0.59am, post implementation.

A distinctive feature of monthly changes in weekend and weekday criminal damage in several case study areas was the relatively large number of cases where criminal damage fell during weekdays whilst rising at weekends. Almost a third of all monthly change across the five case study sites fitted this pattern. For example, in Guildford this happened in seven out of the 12 post implementation months. It also happened in Croydon for six of the 12 post implementation months. In both areas, this occurred far more in the winter and spring than in the summer and autumn.

Changes in the timing of criminal damage overall, and on week at days and at weekends were marginal. Furthermore, the changes that were observed often took place at times of the day/night and in locations that one would not expect to be influenced by the changes in the

operating hours of licensed premises. It is suggested additional contextual data is required to examine this further.

Sexual offences

The number of sexual offences was very small compared with other offences. This crime is excluded from the British Crime Survey and police recorded crime comparable subset, due to due to the small number reported to the survey and concerns about willingness of respondents to disclose such offences, thus low numbers here are to be expected (Walker et al, 2006). Although some fluctuations were apparent by month and time of day, it would be unwise to place too much weight on these changes, due to the low base rates.

The relatively small number of sexual offences precluded any analyses being carried out in the same level of detail as for other offence types and incidents. However, at an aggregate level there were some changes between the baseline and post implementation period.

Nottingham registered the largest number of sexual offences (around 500 per annum) and the smallest change of all the case study areas; an increase of just 1.6% between the baseline and post implementation period. This was fairly much in line with its change in overall violence against the person (up 6.2%). Sexual offences were down by one fifth in Blackpool double its percentage fall in violence against the person. Guildford was the area with the greatest reduction in its number of sexual offences; a decrease of just over 25%, although numbers were very small

Disorder

Apart from a significantly increase in disorder in Croydon in the latter half of the post implementation year, in the remaining case study areas there was either no significant change or significant reductions in calls for disorder compared with the baseline.

In Birmingham, significant reductions in disorder preceded the introduction of the Act and continued into the first half of the post implementation year. Overall disorder fell by one fifth in Birmingham between the baseline and post implementation period. In Croydon, significant reductions leading up to the Act were not sustained post implementation. In Blackpool and in Nottingham there was no significant change either during the baseline period or beyond.

Disorder calls for service overall (i.e. Monday through Sunday) generally peaked earlier in the evening than violence against the person offences. For example, in Blackpool they peaked between 9pm and 10pm and in Croydon and in Nottingham between 8.00pm and 8.59pm. This did not alter substantially between the baseline and post implementation period.

However, there were differences in the temporal distribution of disorder calls it once they were broken down into weekday and weekend calls. Weekend calls for disorder peaked later in the night and their temporal distribution and was not too dissimilar to those for violence against the person and criminal damage.

In the majority of areas there was very little change between the baseline and post implementation period in the timing of calls for disorder whether during the week or at the weekend. However, in Birmingham there was a sizeable reduction between 11pm and midnight and between 1am to 2am but the greatest decrease occurred between 2am and 3am at the weekends (three per cent fewer calls were received in this hourly period compared with the baseline).

Perceptions of the Act

The views of those working within the night-time economy are an important indicator of local conditions and perceived changes within them. What stands out from this element of the research is the absence of widespread strong views regarding the deterioration of conditions following the implementation of the Act, as had been predicted by some sources. In common

with the findings from the quantitative analysis, the stakeholder perceptions portray a mixed picture.

The majority of respondents in the five areas either perceived no change in violence within their premises post implementation, or believed violence to have declined. Only a small minority felt that violence against the person within their premises had increased and these views were restricted to Blackpool and Nottingham.

Had violence in most of the licensed premises increased following the implementation of the Act, this would undoubtedly have been reflected in the views of those with first-hand experience of the night time economy, namely, those working within licensed premises.

Perceptions of changes in levels of violence more broadly within the town or city followed a similar pattern. With the exception of Croydon, for all areas the overwhelming majority of respondents (between 67 per cent and 71 per cent) perceived either no change or a fall in violence post implementation. However, a sizable minority in Birmingham and Blackpool believed that violence had increased in their town centres post implementation.

The perception by 56 per cent of respondents in Croydon that violence had increased in the town was at odds with the figures which showed sustainable reductions in violence through most of the post implementation period. It is somewhat surprising therefore that this was the only case study area in which the majority of respondents held the view that conditions had deteriorated.

Views about change happening more broadly within town centres will inevitably be informed by a combination of personal experience, existing views about the safety of public places and intelligence gathered from other sources, particularly from the media. This is not to say that findings from the interviews with regard to town centres generally were misperceptions or inaccurate but simply that they were less likely to be based upon direct personal experience.

Notwithstanding this, it is wholly reasonable to assume that respondents who engage with consumers of alcohol on a daily basis are more likely to be knowledgeable about changes in violent behaviour because this directly affects their personal safety and the ease with which they can perform their duties. The verdict from those interviewed in connection with changes within licensed premises was clearly weighted towards little or no change in violence following the implementation of the Act.

Concluding remarks

Collectively, the findings from the quantitative and qualitative research inevitably lead to the conclusion that some of the early expectations voiced within the media about the harmful effects of the changes to the Act were unfounded (see literature review).

Many of the changes that have taken place are subtle and would not necessarily be picked up through conventional forms of analysis. The added value of using geographical information systems is the ability to scrutinise, not only, changes in the timing of crime and disorder, but also, the distance decay effects that are apparent the further one moves away from the main pub clusters.

The findings from this study provide valuable data on the extent, concentration, location and timing of violence against the person in relation to changes affecting pubs and nightclubs. They highlight the concentration of crime within clusters and identify the enhanced risk to the safety of individuals within close proximity to them (e.g. within 50 metres). They also identify some changes in timing of violence against the person (e.g. from around midnight to later periods in the small hours of the morning).

Undoubtedly, these data can help to target resources for crime prevention both temporally and spatially. To do this effectively all data sets need to be updated and maintained and also be of a sufficient standard for analysis. Thus, the following recommendations arise from this research.

Policy Recommendations

The principal aim of this study has been to analyse changes in the spatial and temporal distribution of crime and disorder and to relate these to variations in the hours of operation of pubs and nightclubs in five case study areas.

A key component of the work has been the use of Geographical Information Systems and other techniques to explore changes in crime on different scales; at the level of the individual licensed premise, at the level of the pub cluster and in town centres more generally. This was augmented by a modest qualitative research component involving interviews with key stakeholders in the night time economy in each of the areas.

In the process of conducting this study, the authors have identified the need to improve practice in a number of areas, mainly, but not exclusively, concerned with the capture and use of data sets, data quality and the use of intelligence for the targeting of resources.

The most significant impediment to being able to answer some of the key questions set by this evaluation has been the absence of consistent and comprehensive data on licensed premises, in particular, the categorisation of the type of property, reliable information on former and current operating hours and capacity. Without timely and consistently geo-coded data for all licensed premises in town and city centres, it is impossible to explore interactions between changes in the operation of alcohol supply points and crime change.
There is an urgent need for licensing authorities across the country to start to collect comprehensive, detailed and time-stamped information regarding the licensed premises under their jurisdiction

Therefore, the following recommendation is made:

Recommendation 1

That the Home Office, in partnership with the licensing authorities, commission, within the next six months, a feasibility study into the design, implementation, maintenance and funding of a system for the capture of consistent, geographically-referenced data on licensed premises and other alcohol supply points including off-licences, restaurants, supermarkets and hotels.

An example of the core data that might usefully be assembled is given, below.

Premises Name	Premises Address			Premises Postcode	Eastings	Northings	
	No	Street	Area				
The Pub	215	Smith Road	Blackpool	FY1 6ET	438156	429178	
Venue type	**Capacity**	**Name of Designated Premises Supervisor**	**Applied for variation of hours? (Y/N)**	**Date variation granted**	**Date variation denied**	**Current permitted operating hours (post- 24 Nov' 06)**	**Former permitted operating hours (pre- 24 Nov 06)**
4	260	John Smith	Y	27-Sep 06		10.00-00.00	11.00-23.00 weekdays, 12.00-22.30 Sundays

Data is Essential, the data set is of no use if this information is not included

Data is Very Desirable, the data set would be greatly enhanced if this data was provided

Data is Desirable, the data set would be enriched if this data was included

Notes for Template Completion

Each row of data should represent an individual licensed premise

Description of data requirement

Premises Name Name of licensed premises (e.g. Dog and Duck Public House etc)
Premises Address Full address of licensed premises
Premises Postcode Postcode of licensed premises
Eastings The FULL 6-digit Easting geo-code
Northings The FULL 6-digit Northing geo-code
Venue type Type of licensed premises (e.g. nightclub, public house or bar, restaurant etc)
Capacity Capacity limit of premises
Name of Designated Premises Supervisor Name of the Personal License Holder who is named as the Designated Premises Supervisor
Applied for variation of hours? (Y/N) Indication of whether premises has applied to vary their hours under the Licensing Act 2003
Date variation was granted Date when premises was granted approval to vary its hours
Date variation was denied Date when premises was denied approval to vary its hours
Current permitted operating hours (post- 24 Nov' 06) Current operating hours of premises, since the 2nd Appointed Day
Former permitted operating hours (pre- 24 Nov 06) Previous operating hours of premises, before the 2nd Appointed Day
Previous incidents of crime/disorder (12 months pre 24 Nov 06
Current incidents of crime/disorder (number since 24 Nov 06

Existing police recorded crime systems make it very difficult to link changes in licensing hours to changes in crime by location and time. The analysis of the 'top 15' highest crime licensed premises, in this study, used recorded crime data (violence against the person offences) and text fields referring to premises' names to identify the frequency with which establishments were associated with incidents of violence. It is a complex process to link the frequencies generated on premise name back to the individual crime records to extract number of offences at each premise by time of day. Therefore, the following recommendation is made:

Recommendation 2

That Licensing Authorities, in partnership with the police maintain a database of violence offences by premise name and location (address, full postcode and 12 figure grid reference) which includes the date and time of the offence, the name of the premise, and the premise opening hours at the time of the offence. This should also tie into a system that monitors if premises are closed for any period of time.

The analyses of violence associated with licensed premises revealed a high concentration of problems in a relatively small number of high-capacity premises. The Resource Targeting Table proved particularly useful for identifying the extent to which premises with the highest levels of violence remained problematic over time. Whilst the lack of relative improvement Indicated by premises remaining in the 'top 15' is a source of concern it also provides an opportunity to tackle a high percentage of the problem by targeting a small number of establishments. Therefore a recommendation is:

Recommendation 3

That Licensing Authorities, in partnership with the police, develop their own 'Resource Targeting Tables' to monitor closely the most prolific high crime licensed premises with a view to targeting enforcement action and crime prevention measures.

In any evaluation, there are always areas of research that are priorities but that could not be pursued due to time, resource and data constraints. There are a number of research priorities that have emerged from this study. They include the need to record systematically information about policing initiatives and other policy interventions that potentially influence outcomes such as changes in levels of violence in town centres.

Therefore the following recommendation is made:

Recommendation 4

That the Home Office commission a feasibility study into the capture and maintenance of core data on policing and other policy interventions that potentially influence crime in public places and town centres. such a database would need to record, as a minimum, the start and end dates of each initiative, its geographical location, the principal objectives of the intervention, principal beneficiaries, tactics, implementation timetable and level of resources provided.

In the course of this study, the complexity of deriving operational measures of local land use that could be related to licensed premises and crime change was brought into sharp focus. There is a clear need to explore how non-residential properties can be captured by location and function (e.g. takeaways, late night corner shops, taxi ranks and principal bus routes) and incorporated into an evaluation study. Therefore a recommendation is:

Recommendation 5

That further research is conducted into the feasibility of deriving indicators of land use that can be incorporated as contextual variables in evaluation studies.

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