Effects of police community support officer hot spot foot patrol on crime and incidents in a small city centre setting

This RCT tests 15 minutes 'Koper Patrols' by PCSOs in a small city centre setting over a 90-day period to see the effect of their patrols on community reported crime and incidents to police.

Key details

Status	Complete
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Police region	Eastern
Collaboration and partnership	South Yorkshire Police.
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Hypothesis

The purpose of this research is to add to the body of evidence relating to hot spot patrol, specifically in small city centres and to further explorer the effect PCSO patrols in hot spots, as originally experimented with by Ariel (2014) in Peterborough, UK. This research is the second time that hot spots have been tested using only PCSOs and first time that hot spot patrols have been studied when targeted solely in a UK city centre.

Before implementing treatment patrols this research will first establish if micro-place hot spots, described by Sherman and Weisburd (1995) as ‘an area in which everything can be seen and everyone can see a patrolling officer within it’ can be identified in a small city centre setting.

Previous studies have often been used across entire cities and often in the USA where the area can be vast and suffer from high concentrated rates of crime and calls for service (Sherman and Weisburd, 1995; Braga,2014; Telep , 2014). Hinkle and others (2013) also suggest that such areas will not have sufficient concentrations of crime and incidents for hot spot patrols to be impactive.

The study was designed to identify eight micro hot spots in Sheffield City Centre, a 1km squared central business district, with over 200 crimes or incidents in the past 24 months, and randomly assigned to four treatment hot spots an intervention of four 15-minute PCSO foot patrols a day for 90 days, whilst control hot spots received their standard random patrol.

The patrols were tracked firstly by using Global Positioning Systems (GPS) built into the officers "Airwave" radio which send the officers location and timing back into the force’s visibility system which can then be used to measure their time in hot spots. Secondly, patrolling PCSOs were asked to complete a patrol sheet, which manually logged their patrol times and activity which allowed for the analysis of what activity they are completing in hot spot visits.

As South Yorkshire Police seeks to reduce the demand placed on its service, this research also proposes to experiment with a sustainable model of hot spot policing patrols which can be adopted by the force into everyday business using an evidence-based patrol method to reduce demand if prove to be effective.

The key research question this study sets out to answer is:

1. Do hot spots in receipt of foot patrol by uniformed Police Community Support Officers experience reductions in community-reported crime and incidents when compared to those to which no foot patrols are assigned?

The research also aims to address the following sub-questions.

1. What barriers need to be overcome to create effective hot spots in a small city centre setting?
2. Across a 90-day experiment, what are the differences between patrol minutes for the treatment and control hot spots?

3. What activity do Police Community Support officers complete whilst on patrol?
4. What conclusions and recommendations can be made about hot spot patrol designs for smaller city centre settings?

Geographical area

Sheffield city centre.

Target sample size

Eight high demand micro hot spots were identified for inclusion into the study, which were then matched into four pairs based on their levels of crime and incidents. In total these eight hot spots contained 3924 crimes and 9794 incidents in the two years prior to the study.

Participants - inclusion criteria

To achieve the aim of identifying micro-place hot spot patrols the following definition of a hot spot was adopted for this study:

1. An area no bigger than 50 meters x 50 meters
2. With no less than 200 community reported crime or incident in the past 24months (excluding shoplifting and police initiated events).

To identify such hot spots, crime and incidents data from the 1st of May 2016 to the 30th of April 2018 was mapped over the Sheffield city centre area.

To reflect the timing of the patrols conducted by PCSOs this data was limited to those occurring between 0800 and 2200 hours. This would ensure that the hot spots were relevant to the timing of the patrols and would not factor in offences that occur in the night time economy, for example.

From this data, shoplifting offences were removed as this skewed the hot spots almost purely to retail premises, whilst police generated crime and incidents (such as drug arrests) were also excluded as these are outputs rather than outcomes (Sherman and Weisburd,1995).

Interventions

Those hot spots which were allocated for treatment received 90 days of hot spot foot patrols by PCSOs. These patrols consisted of four 15-minute visits a day between the hours of 0800 and 2200 to match the PCSOs shifts. These timings were based on the work of Koper (1995) who found that the ideal dosage for police patrols at a hot spot was 15 minutes to have the maximum residual deterrence effect over the proceeding 30 minutes.

All the PCSOs involved in the experiment were briefed at the beginning of the experiment as to the requirements of their patrols and were given a briefing document when they were assigned to the patrols so that they understood what was required from them. These briefing documents all contained a map of the hot spot for their reference and suggests about taskings or key businesses to visit within the hot spot to try and focus their activity.

The patrols consisted of two PCSOs patrolling together each shift, seven days a week. The PCSOs were dedicated to the hot spot foot patrols throughout the shift and given a patrol route designed around the temporal hot spot analysis that is unique to that weekday. These routes gave a one-hour window in which the PCSOs were expected to make their 15-minute patrol, meaning the actual patrol time will be different each day but focused on the key times that crimes and incidents occur.

Study design

The research is designed as a randomised control trial using random assignment of treatment and control conditions to pairwise matched hot spots, whilst measuring crime and incident data before and after in multiple experimental and control units.

Outcome measures

This experiment set out to collect and measure the outcome of the patrols based on three key measures, which are:

- recorded crimes
- police incidents
- harm scoring

Crimes and Incidents were recorded both in total and per day, as well as being broken down into their individual hot spots to allow for additional analysis regarding each matched pair. Police generated crimes and incidents were again excluded from the outcome measure, as they are

described by Sherman and Weisburd (1995) as outputs rather than outcomes and are partially captured in this study through the data analysis of the patrol activity.

Harm was measured against the recorded crime using the ONS (2018) severity score so that the experiment could measure any potential change over the experimental period. Harm scores were only calculated for recorded crime, as currently there is no satisfactory way of converting incidents into a harm score.

The primary outcomes of interest for this experiment was the change between the experimental period and the previous year's demand comparing the control and treatment hot spots. Data from the experimental period in both 2016 and 2017 was also captured to allow for year on year comparison.

Summary of findings

The main findings suggest that on average treatment patrol hot spots saw 83.7% (d=0.78) higher levels of crime and incidents per day compared to the control hot spots over the experimental period. When comparing this against the previous two years data, the treatment hot spots had an average increase of 21.9% in crime and incidents whilst control hot spots saw a reduction of -18.29% per day.

As intended, based on the GPS and self-reported data, treatment hot spots over the experimental period received on average an additional 48 minutes of PCSO patrol compared to the control hot spots, with the average visit being 16 minutes. The hot spots patrols had a compliance rate of 73.2%, and over the study period there were 133 crimes and 246 incidents reported to the police within the hot spots. In 94% of those patrols, activity was focussed on Community Engagement and in only 6% of visits did the PCSO's use their limited enforcement powers.

Overall the study showed no evidence that PCSO hot spot foot patrols reduce the levels of crime and incidents in hot spot locations compared to random patrol, and suggests they have the opposite effect, and can increase reporting to police.

The exact reasons for this are outside the scope of this study, however, it is suggested it may be due to a lack of deterrent by the presence of PCSOs, who recorded that in 94% of hot spots visits they only engaged with individuals and did not use their albeit limited powers of dispersal or enforcement. Likewise, the result could also be due to an increase in public confidence in reporting

to the police due to their regular attendance in the hot spot, especially in a central businesses district.

This study has however demonstrated that hot spot policing is applicable to small city centre settings. Micro-location hot spots were identifiable with sufficient levels of crime and incidents even across a single square mile and were still give a clear image of which locations which cause the police a disproportionate amount of demand, in some cases up to 12% of all crime and incidents for that specific area.