Joint Operations Unit hot spot policing randomised control trial

Testing whether violent crime is reduced by random police patrols in hot spots.

Key details

Status	Ongoing
Lead institution	Thames Valley Police
Principal researcher(s)	Tori Olphin vru@thamesvalley.police.uk
Police region	South East
Level of research	Professional/work based
Project start date	October 2021
Date due for completion	December 2022

Hypothesis

Patrols of hot spots causes reductions in violent crime on days where hot spots are randomly allocated for patrols.

Hot spots will be randomly allocated for patrol, and the treatment delivery is patrol by joint operations unit resources (over and above business as usual policing). The control delivery is no patrols by joint operations unit resources (just business as usual policing in those areas on control days).

Geographical area

Thames Valley Police area. Hot spots have been identified across the police force area.

Target sample size

Forty-five hot spots have been identified and will be randomly allocated for treatment and control – 50/50 split randomised each day, repeated treatment each day for treatment hot spot. This results in a planned sample size of 4,042.

An effect size of 0.102 would have an 80% chance of detection with 3,020 total cases, or a 90% chance of detection with 4,042 total cases.

Participants - inclusion criteria

Hot spots were identified using data from September to March for the years between 2016 and 2020, and crimes were included in counts if they were violent offences or public disorder offences. This was then split by time of occurrence (crime), so that different hot spots were identified for days (8am to 7.59pm) and nights (8pm to 7.59am).

Interventions

Patrols conducted for a valid amount of time (13 to 20mins), repeated per day are desirable (three per hot spot per day ideally).

Study design

Hot spots were required to be 150-metre hexagons (side length = 150 metres) to ensure that all hexagons were comparable, and patrols could effectively affect the entire area.

Hexagons were required to have a 75-metre buffer zone around them, and these could not overlap which means that there was a minimum permitted distance of 150 metres between hot spots. This was to limit the effect of patrolling one hot spot on crime levels in any other hot spot. These hot spots had to be hot places for violent crime and disorder. Hot spots are split into those occurring during the day and those during the night – (8am to 7.59pm) and nights (8pm to 7.59am).

Hot spots once pre-identified are randomised into treatment and control dates. Random assignment was achieved by random number generation from a computer programme (using sample function in R as a single batch assignment at the beginning of the trial).

Outcome measures

Main outcome measures are:

- count of violent crime occurrences
- count of most serious violent crime offences

Secondary outcome measures are:

- count of all crime occurrences
- count of knife crime occurrences
- count of disorder occurrences
- count of acquisitive crime occurrences
- count of crimes that have occurred in a 75-metre buffer zone around each hot spot hex (all types)
- level of activity that occurred additionally in the treatment hot spots due to this patrol strategy (positive interactions, stop and search, and arrests)

Tags

- Hot spots policing