

# Campbell Crime and Justice Group Title Registration Form

## 1. Title of the review

Systematic review of the empirical evidence of spatial displacement and diffusion of benefits among geographically focused policing initiatives

## 2. Background and objective of this review (briefly describe the problem and the intervention).

Displacement can be defined as a change in crime patterns or an adaption on the part of the offender due to 'blocked' opportunities (see Barr & Pease, 1990<sup>1</sup>). To reflect the different ways in which displacement may occur, Reppetto (1976) created the following classification:

- geographical (or spatial) displacement – where offenders move to an alternative location (not affected by the intervention), usually nearby;
- temporal – where offenders commit crime at different times of the day, week or year;
- tactical – where offenders change their modus operandi;
- target – where offenders move onto alternative targets (i.e. individual or property); and
- functional – where offenders switch to another crime type.

A sixth type, perpetrator displacement was added by Barr and Pease (1990), which occurs when a crime opportunity is so potent and rewarding that, no matter what efforts are put in place, there will always be a steady stream of offenders willing to take the risk.

Diffusion of benefits is the opposite of displacement and occurs when the positive effects of an intervention extends over what it specifically targeted (Clarke & Weisburd, 1994).

The most encompassing type of displacement research are literature reviews of empirical studies reporting on displacement, yet until recently there had only been three (Barr and Pease, 1990; Eck, 1993; and Hesseling, 1994) and there had not been any published systematic reviews of diffusion of benefits (Weisburd et al., 2006). These reviews were descriptive in nature and based on a small number of studies. Recently, a review of displacement and diffusion effects among situational crime prevention (SCP) initiatives sought to overcome these limitations (Guerette and Bowers, 2009). *That study, however, focused exclusively on situational crime prevention initiatives and did not assess the extent of displacement and diffusion among focused policing interventions.*

Geographical displacement is the focus of the bulk of empirical research, probably because it is easier to measure than other forms of displacement. The proposed review will therefore synthesise all available empirical studies which have looked at the effect of focused policing initiatives on geographical displacement and diffusion of benefits.

The review will attempt to establish whether displacement and/or diffusion occurs as a result of focused policing interventions and, if so, to what extent and under what circumstances. Variables that will be considered include the type of intervention, the crime problem being addressed, the general characteristics of the intervention and control areas and any other relevant methodological aspects (e.g. time period over which displacement was measured). A hierarchy of evidence will be used to classify the methodological adequacy of studies, and a summary of author's computed Effect Sizes will be given. Conventional meta-analytic methods will be employed to synthesis the evidence. In addition to this, it is proposed that the methodological issues of measuring displacement and diffusion of benefits and recent advances in this regard (e.g. Bowers and Johnson's (2003) 'weighted displacement quotient'; Weisburd et al., 2006) are discussed.

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<sup>1</sup> Please see Appendix A for a full reference list.

### **3. Define the population**

All empirical studies which have measured geographical displacement and/or diffusion of benefits following the introduction of a geographically focused police initiative will be included in the review. An attempt will be made to include unpublished studies so as to minimise the level of publication bias. We are anticipating that the studies available for review will be drawn from international sources and from any year since they are likely to be limited in numbers. They will focus exclusively on geographical displacement and diffusion (whilst collecting contextual information on other types of displacement).

### **4. Define the intervention**

The proposed work does not aim to review the effectiveness of a particular intervention. Instead, the degree and nature of potential geographical displacement and diffusion will be examined across a *range of* interventions, and conclusions will be made as to whether certain intervention types are more susceptible. The interventions of interest here will be geographically focused police initiatives such as hot spot policing, problem-orientated policing projects and police crackdowns. The interventions reviewed will also be those that focus on local areas rather than whole police jurisdictions.

### **5. Outcome(s) (what is aimed to accomplish – Primary and secondary outcomes should all be mentioned)**

The primary outcome of this review is to determine the extent to which geographical displacement and/or diffusion of benefits occur as a result of geographically focused policing initiatives.

Secondary outcomes are to explore the extent to which observed levels of geographic displacement and diffusion are moderated by:

- Type of policing initiative
- Geographic context of the initiative
- The crime type that is focused upon
- The presence or absence of other types of displacement and/or diffusion
- The methodology and scope of the case studies reviewed

We also hope to develop methods for estimating the statistical significance of the level of displacement or diffusion found (see following section for details).

We will produce a full review for development and approval by the Campbell Collaboration for inclusion in the Campbell Database of Systematic Reviews, which we will update every five years. We would also welcome the opportunity to write up findings of the review for academic publication. We would present a review of our findings at the NPIA/ CEBCP Systematic Research Conference and possibly further conferences.

### **6. Methodology (What types of studies are to be included or excluded and what will be your method of synthesis? Will you use meta-analysis?)**

All empirical studies which have measured geographical displacement and/or diffusion of benefits following the introduction of a geographically focused police initiative will be included in the review. However, we will differentiate between different types of study and present findings for each group separately. For example, findings will be presented separately for those studies that do and do not observe reductions in treatment areas. We will also present findings separately for studies which meet the criteria for different levels of methodological adequacy. For example, we will present findings separately for those that employ random allocation and those that do not. We will also differentiate between those that use separate control areas for the treatment and catchment areas and those that do not. An attempt will be made to include unpublished studies so as to minimise the level of publication bias.

The retrieval of relevant studies will include a key word search of electronic databases, review of bibliographies of existing problem-oriented policing reviews and seminal works, review of research reports of professional research and policing organizations, and inquiries of noted policing experts regarding relevant evaluations

The studies will be examined both descriptively and analytically. For the descriptive review of the studies, the proportion of studies where displacement or diffusion is observed will be computed by type of police tactic, the type of crime targeted, and the location where it takes place. In addition to the descriptive review, a series of quantitative measures will be computed from allowable studies.

The quantitative review will focus on studies which meet the following conditions: i) they presented raw crime counts or rates of crime, or report measures of effect size that are appropriate for meta-analysis; and ii) the research design used in the evaluation comprised at least three areas: a treatment, catchment (or buffer), and a control. These may use random or non-random assignment, as it is anticipated that very few will have used a random design. Comparisons will be made, however, between those two groups.

Traditional meta-analytic techniques used in other systematic reviews will be applied here, though there will be some challenges regarding their applicability. These include:

- The level of heterogeneity of the sample (both in terms of outcome measures used and the contexts of the schemes) may make this inappropriate. It is likely that some studies will use crime rates before and after action and others will use total numbers of crime.
- Producing odds ratios requires that confidence intervals be constructed for individual schemes (or an alternative method for estimating the statistical significance of the estimate), but because the denominator (the ultimate sizes of the action and control groups) is often unknown these may be problematic to compute.
- It is unclear how to produce an odds ratio which takes into account displacement and/or diffusion as well as the scheme effect. For example, is it reasonable to use an additive model- or is some scaling required? We might find for instance that in an additive model a large amount of diffusion of benefit might make schemes with only modest success look extremely effective.

We will endeavor to address these issues and identify and/or adapt conventional meta-analytic techniques as appropriate.

To assist with validation and triangulation, the quantitative measures produced will also include the computation of the gross effect (GE), net effect (NE), the total net effect (TNE) and the weighted displacement quotient (WDQ), and its constituent parts which were developed by Bowers and Johnson (2003) and extended by Eck and Johnson (see Clarke and Eck 2005). The WDQ is a relative ratio and not subject to the limitations mentioned above. The review team hopes to develop the WDQ to enable statistical significance testing using a permutation test to approximate the distribution under the null hypothesis of no displacement/diffusion.

## **7. Do you need support in any of these areas (methodology, statistics, systematic searches, field expertise, review manager etc?)**

We have been granted \$47,363 in funding by the National Policing Improvement Agency. This funding will allow us to access the support necessary in undertaking this review.

## **8. Lead reviewer(s) with contact information**

The Lead Reviewer for this project will be Dr Kate Bowers.

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## Appendix A- References

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