Protocol: The effects of problem-oriented policing on crime and disorder: an updated systematic review
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☐ Education
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☐ Social Welfare
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☐ Yes ☐ Cochrane ☐ Other
☐ Maybe

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Background

The problem, condition or issue

Problem-oriented policing has garnered a great deal of attention since it was first proposed by Herman Goldstein in 1979. The core of the model is a shift from police operating in a reactive, incident driven way (primarily responding to calls for service) to a model that requires the police to be proactive in identifying underlying problems that can be targeted to alleviate crime and disorder at their roots. Problem-oriented policing can be thought of as a process rather than a specific intervention. As such, problem-oriented policing can work independently or simultaneously with other modern policing innovations (hot spots policing, focused deterrence etc…) to address problems of crime and disorder. While the ability of problem-oriented policing to target an array of different issues makes it widely applicable, the plethora of different interventions that may qualify as problem-oriented policing make generalizing research on its effect difficult. The current study will provide an updated systematic review of the effectiveness of problem-oriented policing in reducing crime and disorder. An earlier Campbell review by three of the same authors covered studies published through 2006 (Weisburd, Telep, Hinkle & Eck, 2008; 2010); this updated review will add studies published from 2006 to 2018.

The intervention

Since its initial proposition, the problem-oriented policing model has been further articulated by Eck and Spelman (1987) whose work in Newport News produced the SARA model. SARA is an acronym representing four steps they suggest police should follow when implementing problem-oriented policing. “Scanning” is the first step, and involves the police identifying and prioritizing potential problems in their jurisdiction that may be causing crime and disorder. After potential problems have been identified, the next step is “Analysis.” This involves the police analyzing the identified problem(s) so that appropriate responses can be developed. The third step, “Response,” has the police developing and implementing interventions designed to solve the problem(s). Finally, once the response has been administered, the final step is “Assessment” which involves assessing the impact of the response on the targeted problem(s).

For example, a police agency may determine that drug-related crime is on the rise in their jurisdiction, constituting a problem in need of prioritization (Scanning phase). Further examination of the nature of drug-related crime may reveal problem areas and times (Analysis phase). Based on this analysis, the agency may choose to direct increased patrol and enforcement to the specific areas deemed problematic, and at the specific times deemed problematic (Response phase). After a period of time the agency may compare drug related crime in the jurisdiction as a whole, as well as in the targeted areas, from before and after the response was implemented (Assessment phase). This process in general, rather than the specific problem or response chosen, represents the core concept of problem-oriented
policing. Thus, a diverse set of variations in problems, responses, and length of interventions are possible.

**How the intervention might work**

A 2004 report from the National Research Council offered the following description of problem-oriented policing and how the SARA model works in practice.

The heart of problem-oriented policing is that this concept calls on police to analyze problems, which can include learning more about victims as well as offenders, and to consider carefully why they came together where they did. The interconnectedness of person, place, and seemingly unrelated events needs to be examined and documented. Then police are to craft response that may go beyond traditional police practices...Finally, problem-oriented policing calls for police to assess how well they are doing. Did it work? What worked, exactly? Did the project fail because they had the wrong idea, or did they have a good idea but fail to implement it properly? (Committee to Review Research, 2004: 91)

It is hypothesized that problem-oriented policing affects change in problem outcomes through an increased knowledge of, and responsiveness to, the specificity with which a particular problem operates. Using this process as a policing framework should lead agencies to think and act in ways that go beyond their normal day-to-day operations. Furthermore, the assessment of results should lead to refinement and improvement in subsequent efforts.

**Why it is important to do the review**

Prior to the original Campbell review of problem-oriented policing (Weisburd, Telep, Hinkle & Eck, 2008; 2010), earlier narrative reviews had concluded that research was consistently supportive of the capability of problem solving to reduce crime and disorder (e.g. Weisburd & Eck, 2004; Committee to Review Research, 2004). These conclusions were drawn largely from a number of quasi-experiments going back to the mid-1980s that consistently demonstrated that problem solving can reduce fear of crime (Cordner, 1986), violent and property crime (Eck & Spelman, 1987), firearm-related youth homicide (Kennedy et al., 2001) and various forms of disorder, including prostitution and drug dealing (Capowich & Roehl, 1994; Eck & Spelman, 1987; Hope, 1994). For example, a quasi-experiment in Jersey City, New Jersey, public housing complexes (Green-Mazerolle et al., 2000) found that police problem-solving activities caused measurable declines in reported violent and property crime, although the results varied across the six housing complexes studied. In another example, Clarke and Goldstein (2002) report a reduction in thefts of appliances from new home construction sites following careful analysis of this problem by the Charlotte-Mecklenburg Police Department and the implementation of changes in building practices by construction firms.
In addition to the quasi-experimental work that preceded the earlier systematic review, two experimental evaluations of applications of problem solving in hot spots suggested its effectiveness in reducing crime and disorder. In a randomized trial with Jersey City violent crime hot spots, Braga et al. (1999) reported reductions in property and violent crime in the treatment locations. While this study tested problem-solving approaches, it is important to note that focused police attention was brought only to the experimental locations. Accordingly, it is difficult to distinguish between the effects of bringing focused attention to hot spots and that of such focused efforts being developed using a problem-oriented approach. The Jersey City Drug Market Analysis Experiment (Weisburd & Green, 1995) provided more direct support for the added benefit of the application of problem-solving approaches in hot spots policing. In that study, a similar number of narcotics detectives were assigned to treatment and control hot spots. Weisburd and Green (1995) compared the effectiveness of unsystematic, arrest-oriented enforcement based on ad hoc target selection (the control group) with a treatment strategy involving analysis of assigned drug hot spots, followed by site-specific enforcement and collaboration with landlords and local government regulatory agencies, and concluding with monitoring and maintenance for up to a week following the intervention. Compared with the control drug hot spots, the treatment drug hot spots fared better with regard to disorder and disorder-related crimes.

Evidence of the effectiveness of situational and opportunity-blocking strategies, while not necessarily police based, provides indirect support for the effectiveness of problem solving in reducing crime and disorder. Problem-oriented policing has been linked to routine activity theory, rational choice perspectives, and situational crime prevention (Clarke, 1992a, 1992b; Eck & Spelman, 1987). Past reviews of prevention programs designed to block crime and disorder opportunities in small places found that most of the studies report reductions in target crime and disorder events (Eck, 2002; Poyner, 1981; Weisburd, 1997). Furthermore, many of these efforts were the result of police problem-solving strategies. We note that many of the studies reviewed employed relatively weak designs (Clarke, 1997; Weisburd, 1997; Eck, 2002).

Building off this work, the earlier Campbell systematic review of the effectiveness of problem-oriented policing (Weisburd, et al., 2008; 2010) identified a total of 10 studies that met the Campbell criterion for inclusion—4 randomized experiments and 6 quasi-experiments.

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1 A systematic review of “hot spots policing” has been conducted by Anthony Braga and colleagues (2012). Hot spots policing focuses on small geographic areas and concentrations of crime. Hot spots policing per se does not demand detailed analysis of the problem identified and often relies on a law enforcement response. Problem-oriented policing can focus on small geographic areas (hot spots); however, further analysis is undertaken to determine the creation of the hot spot and responses are tailored to the needs of each hot spot. Further, problem-oriented policing also examines non-geographic concentrations of crime – repeat offenders, repeat victims, hot products, and so forth. In short, while problem-oriented policing at hot spots can be considered a type of problem-oriented policing, many hot spots policing programs do not use the more systematic methods associated with problem-oriented policing.
Overall, the findings of this review largely reinforced those of the earlier narrative reviews and more general assumptions of the effectiveness of problem-oriented policing. Specifically, the authors noted “[w]hether we used a more conservative mean effect size approach or examined the largest effects on crime and disorder reported, we found that POP approaches have a statistically significant effect on the outcomes examined. Importantly, the results are similar whether we look at experimental or nonexperimental studies” (Weisburd et al., 2010, p. 162). However, they also noted that effect sizes were relatively modest, ranging between .10 and .20. The authors also pointed to a host of other factors that should be examined in future reviews after more evaluations of POP had been conducted, including examining the impact of overlapping police interventions. For instance, many POP studies involve elements of hot spots policing and vice versa, but having only 10 eligible studies precluded the original review from examining those types of issues. We note that a recent review of the National Research Council concluded, drawing heavily from our previous review, that problem-oriented policing was effective (Weisburd & Majmundar, 2018).

The findings of this updated review may help to shed further light on the ability of POP to reduce crime and disorder problems by analysing an increased base of empirical research on POP interventions. As empirical knowledge on POP’s effectiveness increases police agencies may be able to better to determine ways to identify and respond to the various problems occurring in their jurisdictions.

### Objectives

The objective of this updated systematic review is to synthesize the extant empirical evidence (published and unpublished) on the effects of problem-oriented policing on crime and disorder, including all such works produced after the searches were conducted for the original review (Weisburd et al., 2008; 2010). The review aims to answer the following questions: Is problem-oriented policing effective in reducing crime and disorder?; Does problem-oriented policing have differential impacts across different types of crime and disorder?; Do specific types of problem-oriented policing approaches have different effects on crime and disorder? As such, the primary question of this review is concerned with crime and disorder outcomes of problem-oriented policing. Nonetheless, when data are available we will collect information on the cost effectiveness of problem-oriented policing programs or other secondary outcomes such as its impacts on police legitimacy and fear of crime.

### Methodology

#### Criteria for including and excluding studies

The scope of this review is experimental and quasi-experimental studies of problem-oriented policing. The preliminary eligibility criteria are as follows:

- The study must be an evaluation of a problem-oriented policing intervention. For this it is necessary to develop an operational definition of problem-oriented policing. For
In this review, only police interventions following the basic tenets of the SARA model outlined above will be eligible for inclusion. This is to say that such interventions must involve the identification of a problem believed to be related to crime and/or disorder outcomes, the development and administration of a response specifically tailored to this problem and an assessment of the effects of the response on a crime or disorder outcome.

- Eligible studies must meet the methodological criterion used for inclusion in the Global Policing Database (GPD, www.gpd.uq.edu.au). This will be discussed in detail in section 3.3 below.

- The study must report on the impacts of POP on at least one crime/disorder outcome.

**Search strategy**

The search for this updated review will be led by the Global Policing Database (GPD) research team at the University of Queensland (Elizabeth Eggins and Lorraine Mazerolle) and Queensland University of Technology (Angela Higginson). The University of Queensland is home to the GPD (see http://www.gpd.uq.edu.au), which will serve as the main search location for this review. The GPD is a web-based and searchable database designed to capture all published and unpublished experimental and quasi-experimental evaluations of policing interventions conducted since 1950. There are no restrictions on the type of policing technique, type of outcome measure or language of the research (Higginson et al., 2015). The GPD is compiled using systematic search and screening techniques, which are reported in Higginson et al. (2015) and summarized in Appendices A and B. Broadly, the GPD search protocol includes an extensive range of search locations to ensure that both published and unpublished research is captured across criminology and allied disciplines.

To capture studies, we will use problem-oriented policing terms to search the GPD corpus of full-text documents that have been screened as reporting on a quantitative impact evaluation of a policing intervention. Specifically, we will use the following terms to search the title and abstract fields of the corpus of documents published from January 2006 through to December 2018:

- "problem-orient***"
- "problem orient***"
- “problem solv***"
- SARA
- scan*
- "problem focus***"
- “problem ident***"
- “ident* problem***"
- “situational crime prevent***"
- POP

Several additional strategies will be used to extend the GPD search. First, we will perform forward citation searches for works that have cited seminal problem oriented policing
Second, we will perform hand searches of 2017 and 2018 volumes of leading journals in the field to identify any recent studies that may not yet be indexed in the GPD and other databases. Third, we will review the Center for Problem-Oriented Policing website for all Tilley Award and Goldstein Award winners and submissions. Fourth, after finishing the above searches and reviewing the studies as described later, we will e-mail the list to leading policing scholars knowledgeable in the area of problem-oriented policing (see list in Appendix D). This is likely to identify studies the above searches missed, as these experts may be able to refer us to eligible studies missing from our list, particularly unpublished pieces such as dissertations and smaller research reports.

Several strategies will be used to obtain full-text versions of the studies found through searches of the various abstract databases listed above. First, we will attempt to obtain full-text versions from the electronic journals available through the George Mason University, Georgia State University and Arizona State University libraries. When electronic versions are not available, we will use print versions of journals available at the library. If the journals are not available, we will make use of the Interlibrary Loan Office (ILL) to try to obtain the journal from the libraries of other area schools. If these methods do not work, we will contact the author(s) of the article and/or the agency that conducted and/or funded the research to try to get a copy of the full-text version of the study.

**Description of methods used in primary research**

The studies included in this review will use methodologies that are variations of a treatment versus comparison group research designs with a post-test measure. Some studies may have additional follow-up comparisons. Specifically, this review will include randomized experimental studies and a variety of types of quasi-experimental studies using the criterion specified for inclusion of studies into the GPD. These criteria will also be used for screening for eligibility of studies found through our hand searches of journals and our searches of the publications from the agencies listed above. The criterion in the GPD protocol specify the following types of research designs as eligible for inclusions (Mazerolle et al, 2016, p. 47-48):

- Randomized experimental designs (RCTs)
- The following “strong” quasi-experimental designs:
  - Regression discontinuity designs
  - Matched control group designs with or without pre-intervention baseline measures (propensity or statistically matched)
  - Unmatched control group designs with pre-intervention measures (difference-in-difference analysis)

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2 The seminal pieces that will be used here are: Goldstein, 1979; Goldstein, 1990; Spelman and Eck, 1987; Eck and Spelman, 1987; Braga et al., 1999; Weisburd et al., 2008, 2010.


4 The POP center is included in the GPD’s grey literature searches, but given the centrality of the center to the current review topic we opted to double check this source for eligible studies.
Short interrupted time-series designs with control group (less than 25 pre and 25 post-intervention observations (Glass, 1997))

Long interrupted time-series designs with control group ≥ 25 pre- and post-intervention observations (Glass, 1997))

- The following “weak” quasi-experimental designs:
  - Unmatched control group designs with pre-post intervention measures which allow for difference-in-difference analyses
  - Unmatched control group designs without pre-intervention measures where the control group has face validity
  - Raw unadjusted correlational designs where the variation in the level of the intervention is compared to the variation in the level of the outcome
  - Treatment-Treatment Designs

This review is excluding single group designs with pre- and post-intervention measures. These designs are highly subject to bias and threats to internal validity. As the earlier review of POP indicated, this is especially true in this area. Pre-post studies were collected during that study for a separate analysis and results showed that while these studies had mostly positive and sizeable impacts on crime, they were highly subject to bias toward positive outcomes because a number of them were submissions for consideration for the Goldstein and Tilley awards for excellence in problem-oriented policing. This, combined with inherent difficulty in publishing null findings from less rigorous research designs makes it difficult to draw strong conclusions from the body of pre-post evaluations of POP. Such work is important as POP often involves addressing single problems. However, reviewing these studies in a Campbell Systematic review is not appropriate given the emphasis on only including rigorous experimental and quasi-experimental designs. We know from the past review that there is promising case study evidence supporting the use of POP to address individual problems. The purpose of this review is to see whether strong methodological approaches continue to yield positive crime prevention outcomes for POP. The inclusion of case studies would not add to this goal.

The unit of analysis will be “problems” variously identified. In general, the outcomes will be drawn from data in geographic areas of varying size (possibly ranging from as small as street segments/blocks to as large as whole police districts or even cities) or groups of people targeted by the intervention or serving as a control group. The studies will also vary in their method of assignment to treatment and comparison areas. A small number may use randomized methods to assign areas to groups. Quasi-experiments in which a handful of areas are assigned to treatment or control by a police department and/or research team (or where comparison areas are chosen after the fact) will be more common. Additionally, studies may use pre-post designs in which there are no geographical comparison areas or control groups of individuals, as the pre-intervention time period in the target site is used as the comparison. As above, these simple pre-post studies will not be included in this updated review.

All eligible studies will include a post-intervention measure of crime and disorder. These can include measures of overall crime/disorder, or measures of individual categories of crime/disorder (i.e. homicide or robbery). These measures will largely be obtained from
official police data such as calls for service, arrests and/or crime incident reports. However, it is possible that some studies may use alternative measures such as researcher observations of crime/disorder or self-report measures of crime/delinquency. We do not expect to find many studies that allow for a cost benefit analysis, though this will not be known until the review is conducted. Other outcome measures such as fear of crime, citizen attitudes toward police etc. may be measured in the studies, though they are not generally primary outcomes of problem-oriented policing.

**Criteria for determination of independent findings**

Many studies are expected to report multiple outcomes. An important problem in that case is how to treat such outcomes so that analyses will not include dependent outcomes in the same analysis. For example, some studies may report on multiple crime/disorder outcomes in the same target site. For cases such as this with multiple findings from the same sample, each will be examined independently to decide how to either combine the findings or to choose the one that best represents the study.

While it is likely that most interventions will be designed to deal with a specific problem, some may also target some secondary problems and report outcomes for these as well. In these cases the effect size for the primary problem will be reported.

In the case of a single study with multiple sites within the same jurisdiction, and reliant on the same police program, the results will be treated as multiple outcomes in the same study and will be averaged across sites. An example of this would be a study reporting on the effects of problem-oriented policing on crime in multiple target sites in one city. Such cases will be treated as one study with sub units.

In the case where one POP program is designed to deal with multiple problems and reports outcomes for each of these problems, we will code all primary outcomes identified by study authors, and will report findings using the maximum, average, and minimum effect sizes to offer context for assessing the range of effect sizes for such studies. The same strategy will be used for any studies reporting the same outcome multiple times with different types of data (i.e. a study evaluating the impact of a POP program on robbery may report the outcome measured by robbery incidents, arrests and calls for service).

**Details of study coding categories**

As the GPD search process outlined above already screens the literature for policing evaluations with experimental and quasi-experimental designs, our screening of full text results is limited to screening for studies of POP (defined as roughly following the tenets of the SARA model) that report impacts on at least one crime or disorder outcome. Our screening of studies identified through our gray literature searches will have to first screen for studies that used the experimental or quasi-experimental methods listed above, in addition to verifying that they meet our definition of POP and report on a relevant outcome.
All eligible studies will be coded (see coding protocol attached in Appendix C) on a variety of criteria (including details related to them) including:

a) Reference information (title, authors, publication etc.)
b) Nature of description of selection of site, problems etc.
c) Nature and description of selection of comparison group or period
d) The unit of analysis
e) The sample size
f) Methodological type (randomized experiment or quasi-experiment)
g) A description of the POP intervention
h) Dosage intensity and type
i) Implementation difficulties
j) The statistical test(s) used
k) Reports of statistical significance (if any)
l) Effect size/power (if any)
m) The conclusions drawn by the authors

Two members of the research team will independently code each eligible study. Where there are discrepancies, one of the lead authors (Dr. Weisburd, Hinkle or Telep) will review the study, discuss the coding decisions with the original coders and determine the final coding decision.

**Statistical procedures and conventions**

Meta-analytic procedures will be used to combine data from studies. For eligible studies, with enough data present, effect sizes will be calculated using the standardized measures of effect sizes as suggested in the meta-analytic literature (e.g. see Lipsey & Wilson, 2001). Mean effect sizes will be computed across studies and we will use a correction such as the inverse variance weight for computing the associated standard error. Though we will examine the Q statistic to assess heterogeneity of effect sizes across studies, it is our initial assumption that effect size is a random factor in our analysis. As such, we will implement a random effects model for all analyses involving effect sizes. This is the case because POP strategies are diverse, and they are brought to ameliorate different types of problems. The common factor is the process used by the police. In this context we believe that a mixed effects model will be most appropriate in analyzing the effectiveness of POP outcomes.

We also hope to examine contextual or moderating features of POP. Though it is difficult to know at the outset, we think it important to assess the differential effects of POP across different types of problems and across different types of treatments. We are also interested in whether the strength of the effect varies across departments or other contextual variables. If we identify enough relevant studies for statistical analysis, to assess this we will use the analog to the ANOVA method of moderator analysis (see Lipsey & Wilson, 2001) for categorical moderator variables and meta-analytic regression analysis for continuous moderator variables or analyses involving multiple moderators.

Finally, publication bias is a concern in every meta-analysis. As such, we will use traditional methods to test for the sensitivity of the findings to publication bias in the experimental and quasi-experimental studies. These methods will include a comparison of the mean effect size for published and unpublished studies and a trim-and-fill analysis.
Treatment of qualitative research

We do not plan to include qualitative research.
References


Weisburd, D. (1997). Reorienting crime prevention research and policy: From the


### Review authors

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Roles and responsibilities

- Content: Weisburd, Hinkle, Telep
- Systematic review methods: Weisburd, Hinkle, Telep
- Statistical analysis: Hinkle, Telep
- Information retrieval: GPD Team (Elizabeth Eggins, Lorraine Mazerolle, Angela Higginson), Hinkle, graduate research assistant(s)

Sources of support

External Funding: Support for this review has been provided from The Police and Crime Commissioner via a subaward agreement between the Campbell Collaboration and George Mason University.

Declarations of interest

Professor Weisburd has been an evaluator of problem-oriented policing programs, including the Jersey City Drug Market Analysis Experiment and was lead author on the earlier Campbell review of POP (Weisburd et al., 2008; 2010). He has also published a review of police effectiveness in the ANNALS (Weisburd and Eck, 2004) which was based on his work at the National Research Council. The narrative review suggested that POP programs do have a positive crime and disorder outcome. That review provided the basis for Professor Weisburd’s interest in carrying out the original systematic review. More recently Professor Weisburd chaired the National Research Council review of proactive policing, which concluded that POP was effective (based in good part on the Campbell review). Professor Weisburd would not be uncomfortable if the findings showed that the narrative review was incorrect or that findings have changed since the original systematic review.

Professors Hinkle and Telep were also authors on the original review of POP. Dr. Telep is also an author of a forthcoming guide on hot spots policing for the Center for Problem-Oriented Policing (Telep & Hibdon, 2019). Like Professor Weisburd, they would not be uncomfortable if the updated review results in findings that differ from the original systematic review.
Preliminary timeframe

The review process will adhere to the following schedule:

- Search for published and unpublished studies: Spring 2019
- Relevance assessments: Spring to Early Summer 2019
- Coding of eligible studies: Summer 2019
- Statistical analysis: Summer to Fall 2019
- Presentation of preliminary findings at ASC: Fall 2019
- Preparation of report: Winter to Spring 2020
- Submission of completed report: Spring-Early Summer 2020

Plans for updating the review

The authors expect to update the review every five to ten years depending on a sense of trends for experimental and quasi-experimental evaluations of POP being funded and conducted. Many of these are highly visible as they are often published in top journals in the field.
AUTHOR DECLARATION

Authors’ responsibilities

By completing this form, you accept responsibility for preparing, maintaining and updating the review in accordance with Campbell Collaboration policy. Campbell will provide as much support as possible to assist with the preparation of the review.

A draft review must be submitted to the relevant Coordinating Group within two years of protocol publication. If drafts are not submitted before the agreed deadlines, or if we are unable to contact you for an extended period, the relevant Coordinating Group has the right to de-register the title or transfer the title to alternative authors. The Coordinating Group also has the right to de-register or transfer the title if it does not meet the standards of the Coordinating Group and/or Campbell.

You accept responsibility for maintaining the review in light of new evidence, comments and criticisms, and other developments, and updating the review at least once every five years, or, if requested, transferring responsibility for maintaining the review to others as agreed with the Coordinating Group.

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The support of the Coordinating Group in preparing your review is conditional upon your agreement to publish the protocol, finished review, and subsequent updates in the Campbell Library. Campbell places no restrictions on publication of the findings of a Campbell systematic review in a more abbreviated form as a journal article either before or after the publication of the monograph version in Campbell Systematic Reviews. Some journals, however, have restrictions that preclude publication of findings that have been, or will be, reported elsewhere and authors considering publication in such a journal should be aware of possible conflict with publication of the monograph version in Campbell Systematic Reviews. Publication in a journal after publication or in press status in Campbell Systematic Reviews should acknowledge the Campbell version and include a citation to it. Note that systematic reviews published in Campbell Systematic Reviews and co-registered with Cochrane may have additional requirements or restrictions for co-publication. Review authors accept responsibility for meeting any co-publication requirements.

I understand the commitment required to undertake a Campbell review, and agree to publish in the Campbell Library. Signed on behalf of the authors:

Form completed by: David Weisburd          Date: 19 February 2018
Appendix A: GPD Systematic Search Strategy

Search Terms

To ensure optimum sensitivity and specificity, the GPD search strategy utilises a combination of free-text and controlled vocabulary search terms. Because controlled vocabularies and search capabilities vary across databases, the exact combination of search terms and field codes are adapted to each database. Final search syntax for each location will be reported in the final review.

The free-text search terms for the GPD are provided in Table 1 and are grouped by substantive (i.e., some form of policing) and evaluation terminology. Although the search strategy may vary slightly across search locations, it follows a number of general rules:

- Search terms are combined into search strings using Boolean operators “AND” and “OR”. Specifically, terms within each category are combined with “OR”, and categories will be combined with “AND”. For example: (police OR policing OR “law#enforcement”) AND (analy* OR ANCOVA OR ANOVA OR ...).
- Compound terms (e.g., law enforcement) are considered single terms in search strings by using quotation marks (i.e., “law*enforcement”) to ensure that the database searches for the entire term rather than separate words.
- Wild cards and truncation codes are used for search terms with multiple iterations from a stem word (e.g., evaluation, evaluate) or spelling variations (e.g., evaluat* or randomi#e).
- If a database has a controlled vocabulary term that is equivalent to “POLICE”, the term is combined in a search string that includes both the policing and evaluation free-text search terms. This approach ensures that the search retrieves documents that do not use policing terms in the title/abstract but have been indexed as being related to policing in the database. An example of this approach is the following search string: (((SU: “POLICE”) OR (TI,AB,KW: police OR policing OR “law#enforcement”)) AND (TI,AB,KW: intervention* OR evaluat* OR compar* OR ...)).
- For search locations with limited search functionality, a broad search that uses only the policing free-text terms is implemented.
- Multidisciplinary database searches are limited to relevant disciplines (e.g., include social sciences but exclude physical sciences).
- Search results are refined to exclude specific types of documents that are not suitable for systematic reviews (e.g., newspapers, front/back matter, book reviews).

---

Table 1. Free-text search terms for the GPD systematic search

<table>
<thead>
<tr>
<th>Policing Search Terms</th>
<th>Evaluation Search Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>police</td>
<td>analy*</td>
</tr>
<tr>
<td>policing</td>
<td>ANCOVA</td>
</tr>
<tr>
<td>“law*enforcement”</td>
<td>ANOVA</td>
</tr>
<tr>
<td>constab*</td>
<td>“ABAB design”</td>
</tr>
<tr>
<td>detective*</td>
<td>“AB design”</td>
</tr>
<tr>
<td>sheriff*</td>
<td>baseline</td>
</tr>
<tr>
<td></td>
<td>causa*</td>
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<tr>
<td></td>
<td>“chi#square”</td>
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<tr>
<td></td>
<td>coefficient*</td>
</tr>
<tr>
<td></td>
<td>“comparison condition**”</td>
</tr>
<tr>
<td></td>
<td>“comparison group**”</td>
</tr>
<tr>
<td></td>
<td>“control condition”*</td>
</tr>
<tr>
<td></td>
<td>“control group**”</td>
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<tr>
<td></td>
<td>correlat*</td>
</tr>
<tr>
<td></td>
<td>covariat*</td>
</tr>
<tr>
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<td>“cross#section**”</td>
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<tr>
<td></td>
<td>data</td>
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<tr>
<td></td>
<td>effect*</td>
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<td>eval*</td>
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<td>experiment*</td>
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<td>hypothes*</td>
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<td>impact*</td>
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<td></td>
<td>measure*</td>
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<td></td>
<td>“meta-analy*”</td>
</tr>
<tr>
<td></td>
<td>“odds#ratio*”</td>
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<td></td>
<td>outcome*</td>
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<tr>
<td></td>
<td>paramet*</td>
</tr>
<tr>
<td></td>
<td>“post-test”</td>
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<tr>
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<td>posttest</td>
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<tr>
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<td>predict*</td>
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<td></td>
<td>program*</td>
</tr>
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<td>“propensity score**”</td>
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<tr>
<td></td>
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</tr>
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<td>“quasi#experiment**”</td>
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<tr>
<td></td>
<td>questionnaire*</td>
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<td>random*</td>
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<tr>
<td></td>
<td>RCT</td>
</tr>
<tr>
<td></td>
<td>regress*</td>
</tr>
<tr>
<td></td>
<td>result*</td>
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<tr>
<td></td>
<td>“risk#ratio*”</td>
</tr>
<tr>
<td></td>
<td>sampl*</td>
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<tr>
<td></td>
<td>“standard deviation**”</td>
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<tr>
<td></td>
<td>statistic*</td>
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<tr>
<td></td>
<td>studies</td>
</tr>
<tr>
<td></td>
<td>study</td>
</tr>
<tr>
<td></td>
<td>survey*</td>
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<tr>
<td></td>
<td>“systematic review**”</td>
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<tr>
<td></td>
<td>“tit#test**”</td>
</tr>
<tr>
<td></td>
<td>“time#series”</td>
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<tr>
<td></td>
<td>treatment*</td>
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<tr>
<td></td>
<td>variable*</td>
</tr>
<tr>
<td></td>
<td>variance</td>
</tr>
</tbody>
</table>

Search Locations

To reduce publication and discipline bias, the GPD search strategy adopts an international scope and involves searching for literature across a number of disciplines (e.g., criminology, law, political science, public health, sociology, social science and social work). The search captures a comprehensive range of published (i.e., journal articles, book chapters, books) and unpublished literature (e.g., working papers, governmental reports, technical reports, conference proceedings, dissertations) by implementing a search strategy across bibliographic/academic, grey literature, and dissertation databases or repositories.

It is noted that there is substantial overlap of the content coverage between many of the databases. Therefore, the Optimal Searching of Indexing Databases (OSID) computer program (Neville & Higginson, 2014) has been used to analyse the content crossover for all databases that have accessible content coverage lists. OSID analyses the content coverage and creates a search location solution that provides the most comprehensive coverage via the least number of databases. Another advantage of using OSID when designing a search strategy is the reduction in the number of duplicates that would need to be removed prior to the screening phase. Databases with >10 unique titles are searched in full, whereas databases with ≤10 unique titles were searched only the unique titles and any non-serial content (e.g., reports, conference proceedings). Where a modified search of a database would be more labour-intensive than a full search and export results, a full search of the database is conducted. The final search locations and solutions are reported in Table 2.
<table>
<thead>
<tr>
<th>INDEXED &amp; ACADEMIC DATABASES</th>
<th>CONTENT COVERAGE FED INTO OSID?</th>
<th>FULL OR MODIFIED SEARCH?</th>
<th>SEARCH MODIFICATIONS</th>
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<tr>
<td>ProQuest</td>
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<tr>
<td>Criminal Justice</td>
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<td>Full</td>
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</tr>
<tr>
<td>Dissertation and Theses Database Global</td>
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<td>Modified</td>
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</tr>
<tr>
<td>Political Science</td>
<td>Yes</td>
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<tr>
<td>Periodical Archive Online</td>
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<td>Full</td>
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<tr>
<td>Research Library</td>
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<td>Modified</td>
<td>Social Sciences subset.</td>
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<td>Full</td>
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<tr>
<td>Sociology</td>
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<td>Search 2 unique journal titles and non-serial content only.</td>
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<td>Applied Social Sciences Index and Abstracts</td>
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<td>Full</td>
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<td>International Bibliography of the Social Sciences</td>
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<td>Full</td>
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<tr>
<td>Public Affairs Information Service</td>
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<td>Social Services Abstracts</td>
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<td>Full</td>
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<tr>
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<td>EconLit</td>
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<td>International Political Science Abstracts</td>
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<td>Availability</td>
<td>Content</td>
<td>Note</td>
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<td><strong>PsycINFO</strong></td>
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<td><strong>Social Work Abstracts</strong></td>
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<td><strong>Web of Science</strong></td>
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<td>Current Contents Connect – Social and Behavioural Sciences Edition</td>
<td>Yes</td>
<td>Modified</td>
<td>Search 1 unique journal title and non-serial content only.</td>
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<td>Book Citation Index (Social Sciences and Humanities)</td>
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<tr>
<td>Conference Proceedings Citation Index (Social Sciences and Humanities)</td>
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<tr>
<td>Social Science Citation Index</td>
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<td>Australian Attorney General Information Service</td>
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<td>Full</td>
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<tr>
<td>Australian Criminology Database (CINCH)</td>
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<tr>
<td>Australian Federal Police Database</td>
<td>Yes</td>
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<tr>
<td>Australian Public Affairs Full-Text</td>
<td>Yes</td>
<td>Full</td>
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<tr>
<td>DRUG</td>
<td>Yes</td>
<td>Full</td>
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<tr>
<td>Health &amp; Society Database</td>
<td>Yes</td>
<td>Modified</td>
<td>Search unique journal titles and non-serial content only.</td>
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<td>Humanities and Social Sciences Collection</td>
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<td>Full</td>
<td>None.</td>
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<tr>
<td><strong>Gale-Cengage</strong></td>
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<tr>
<td>Expanded Academic ASAP</td>
<td>Yes</td>
<td>Full</td>
<td>None.</td>
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<td><strong>STANDALONE &amp; OPEN ACCESS DATABASES</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Cambridge Journals Online</td>
<td>Yes</td>
<td>Modified</td>
<td>Search 4 unique journal titles in Law and Political Science collections and full search of Social Studies collection.</td>
</tr>
<tr>
<td>Directory of Open Access Journals</td>
<td>Yes</td>
<td>Full</td>
<td>None.</td>
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<tr>
<td>HeinOnline</td>
<td>Yes</td>
<td>Modified</td>
<td>Law Journals Online collection only.</td>
</tr>
<tr>
<td>JSTOR</td>
<td>Yes</td>
<td>Modified</td>
<td>Search unique titles across the Law, Political Science, Public Health, Public Policy, Social Work and Sociology collections only. The Criminal Justice collection had no unique content and so will be excluded from the search. Only 10% of content in this database have abstracts and a full-text search returns &gt;250,000 results because of inability to construct complex search strings. Therefore, a modified search of the unique titles across these collections will be more pragmatic than a full search of the database.</td>
</tr>
<tr>
<td>Database Name</td>
<td>Access</td>
<td>Search Type</td>
<td>Notes</td>
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<td>-------------</td>
<td>-------</td>
</tr>
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<td>Oxford Scholarship Online</td>
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<tr>
<td>Sage Journals Online and Archive (Sage Premier)</td>
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<td>Modified</td>
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<td>ScienceDirect</td>
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</tr>
<tr>
<td>SCOPUS</td>
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<td>Full</td>
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<tr>
<td>SpringerLink</td>
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<td>Full</td>
<td>Although this database has low uniqueness when combined with the full set of databases, a full search using only the policing search terms will be more pragmatic than a modified search on unique titles because of the restricted search functionality of this database.</td>
</tr>
<tr>
<td>Taylor &amp; Francis Online</td>
<td>Yes</td>
<td>Modified</td>
<td>Although this database has low uniqueness when combined with the full set of databases, a full search using only the policing search terms will be more pragmatic than a modified search on unique titles because of the restricted search functionality of this database.</td>
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<tr>
<td>Wiley Online Library</td>
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<tr>
<td>California Commission on Peace Officer Standards &amp; Training Library</td>
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<td>Full</td>
<td>None.</td>
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<tr>
<td>Cochrane Library</td>
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<td>Full</td>
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<tr>
<td>CrimeSolutions.gov</td>
<td>No</td>
<td>Full</td>
<td>None.</td>
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<tr>
<td>Database of Abstracts of Reviews of Effectiveness (DARE)</td>
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<td>Full</td>
<td>None.</td>
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<tr>
<td>FBI – The Fault (Reports and Publications)</td>
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<td>Full</td>
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<tr>
<td>Evidence-Based Policing Matrix</td>
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<td>Full</td>
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<tr>
<td>International Initiative for Impact Evaluation Database (3ie)</td>
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<tr>
<td>National Criminal Justice Reference Service</td>
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<td>Australian Institute of Criminology</td>
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<td>Access</td>
<td>Content</td>
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<tr>
<td>Canadian Police Research Catalogue</td>
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<td>Centre for Problem-Oriented Policing</td>
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<td>Full</td>
<td>None</td>
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<tr>
<td>College of Policing (including POLKA and Crime Reduction Toolkit)</td>
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<td>Full</td>
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<td>European Police College (CEPOL)</td>
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<td>Evidence for Policy and Practice Information and Coordinating Centre</td>
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<td>National Research Institute of Police Science (Japanese)</td>
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<td>Office of Community Oriented Policing Services</td>
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<td>Police Executive Research Forum (US)</td>
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<td>Tasmania Institute of Law Enforcement Studies (Australia)</td>
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<td>Scottish Institute for Policing Research</td>
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<tr>
<td>Centre of Excellence in Policing and Security (Australian, now archived)</td>
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<td>Full</td>
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</table>
Appendix B: GPD Systematic Compilation Strategy

Inclusion Criteria
Each record captured by the GPD systematic search must satisfy all inclusion criteria to be included in the GPD: timeframe, intervention and research design. There are no restrictions applied to the types of outcomes, participants, settings or languages considered eligible for inclusion in the GPD.

Types of interventions
Each document must contain an impact evaluation of a policing intervention. Policing interventions are defined as some kind of a strategy, program, technique, approach, activity, campaign, training, directive, or funding/organisational change that involves police in some way (other agencies or organisations can be involved). Police involvement is broadly defined as:

- Police initiation, development or leadership
- Police are recipients of the intervention or the intervention is related, focused or targeted to police practices
- Delivery or implementation of the intervention by police

Types of study designs
The GPD includes quantitative impact evaluations of policing interventions that utilise randomised experimental (e.g., RCTs) or quasi-experimental evaluation designs with a valid comparison group that does not receive the intervention. The GPD includes designs where the comparison group receives ‘business-as-usual’ policing, no intervention or an alternative intervention (treatment-treatment designs).

The specific list of research designs included in the GPD are as follows:

- Systematic reviews with or without meta-analyses
- Cross-over designs
- Cost-benefit analyses
- Regression discontinuity designs
- Designs using multivariate controls (e.g., multiple regression)
- Matched control group designs with or without pre-intervention baseline measures (propensity or statistically matched)
- Unmatched control group designs with pre-post intervention measures which allow for difference-in-difference analysis
- Unmatched control group designs without pre-intervention measures where the control group has face validity
- Short interrupted time-series designs with control group (less than 25 pre- and 25 post-intervention observations)
- Long interrupted time-series designs with or without a control group (≥25 pre- and post-intervention observations)
• Raw unadjusted correlational designs where the variation in the level of the intervention is compared to the variation in the level of the outcome

The GPD excludes single group designs with pre- and post-intervention measures as these designs are highly subject to bias and threats to internal validity.

**Systematic Screening**
To establish eligibility, records captured by the GPD search progress through a series of systematic stages which are summarised in Figure 1, with additional detail provided in the following subsections.

All research staff working on the GPD undergo standardised training before beginning work within any of the stages detailed below. Staff then complete short training simulations to enable an assessment of their understanding of the GPD protocols and highlight any areas for additional training. In addition, random samples of each staff’s work are regularly cross-checked to ensure adherence to protocols. Disagreements about screening decisions between staff are mediated by either the project manager or GPD chief investigators.

**Title and abstract screening**
After removing duplicates, the title and abstract of records captured by the GPD systematic search is screened by trained research staff to identify potentially eligible research that satisfies the following criteria:

- Document is dated between 1950 – present
- Document is unique (i.e., not a duplicate)
- Document is about police or policing
- Document is an eligible document type (e.g., not a book review)

Records are excluded if the answer to any one of the criteria is unambiguously ‘No’, and will be classified as potentially eligible otherwise. Records classified as eligible at the title and abstract screening stage progress to full-text document retrieval and screening stages.

**Full-text eligibility screening**
Wherever possible, a full-text electronic version of an eligible record is imported into *SysReview* (review management software; Higginson & Neville, 2015). For records without an electronic version, a hardcopy of the record is located to enable full-text eligibility screening. The full-text of each document is screened to identify studies that satisfy the following criteria:

- Document is dated between 1950 – present
- Document is unique
- Document reports a quantitative statistical comparison
- Document reports on policing evaluation
- Document reports in a quantitative impact evaluation of a policing intervention
- Evaluation uses an eligible research design
SYSTEMATIC SEARCH OF PUBLISHED & UNPUBLISHED LITERATURE

EXPORT SEARCH RESULTS
- Bibliographic data and abstracts exported into EndNote
- Data cleaned and duplicate records removed

IMPORT SEARCH RESULTS INTO SYSREVIEW

SCREEN TITLES AND ABSTRACTS FOR ELIGIBILITY
1. Not a duplicate document?
2. Between 1950 – present?
3. About police or policing?
4. Eligible document type?
   If not clearly excluded on any criteria...

DOCUMENT RETRIEVAL
- Retrieve electronic and hard copies of all eligible documents
- Attach electronic versions to records in SysReview

SCREEN FULL-TEXT OF DOCUMENTS FOR FINAL ELIGIBILITY
1. Not a duplicate document?
2. Between 1950 – present?
3. Quantitative statistical comparison?
4. Policing intervention?
5. Quantitative impact evaluation?
6. Eligible research design?
   If ‘Yes’ to all...

CATEGORISE ELIGIBLE DOCUMENTS
1. Research design
2. Intervention location
3. Publication date
4. Problem targeted
5. Evaluation outcome measure(s)
6. Type of policing intervention

GLOBAL POLICING DATABASE (GPD)
- Web-based
- Searchable
- Updated biennially

Figure 1. GPD systematic compilation process
Appendix C: POP META ANALYSIS CODING SHEET

Reference Information

1. Document ID: __ __ __ __

2. Study author(s): ____________________

3. Study title: _______________________

4a. Publication type: ______
   1. Book
   2. Book chapter
   3. Journal article (peer reviewed)
   4. Thesis or doctoral dissertation
   5. Government report (state/local)
   6. Government report (federal)
   7. Police department report
   8. Technical report
   9. Conference paper
   10. Other (specify)

4b. Specify (Other)_____________________

5. Publication date (year): _____________

6a. Journal Name: ____________________

6b. Journal Volume: _______________

6c. Journal Issue: ____________

7. Date range of research (when research was conducted):
   Start: ______________
   Finish: ____________

8. Source of funding for study: ________________

9. Country of publication: ________________

10. Date coded: ______________

11. Coder's Initials: __ __ __
Describing the Problem(s)

12. How did the problem(s) come to the attention of the police? (Select all that apply)
   1. Crime analysis unit
   2. Citizen meeting/organization
   3. Officer observation/suggestion
   4. Other government agency
   5. Funding agency
   6. Researcher
   7. Other (specify)

12b. Specify (Other) _______________

13. What was the environment where the problem(s) occurred? (Select all that apply)
   1. Residential
   2. Recreational (bars, restaurants, parks)
   3. Offices
   4. Retail
   5. Industrial
   6. Agricultural
   7. Education
   8. Human service (jails, courts, hospitals)
   9. Public ways
   10. Transport (buses, airports)
   11. Open/transitional (construction sites, abandoned buildings)
   12. Citywide/no particular environment specified

14a. What type of event(s) make up the problem(s)? ______
   1. Predatory crimes against persons (sexual assault, robbery, homicide)
   2. Predatory crimes against property (vandalism, auto theft)
   3. Illegal service crimes (prostitution, selling drugs)
   4. Public disorder crimes (disorderly conduct, drunkenness)
   5. Vehicular/traffic offenses
   6. Status crimes
   7. Hard drug use
   8. Overall crime/disorder
   9. Other (specify)

14b. Specify (Other) _______________
15. Specifically, what event(s) makes up the problem(s)?

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

16. The events making up the problem(s) primarily center on which part of the problem analysis/crime triangle?
   1. Offenders
   2. Victims/targets
   3. Guardians or managers
   4. Places/geographic areas

17a. What data sources were used for analysis of the selected problem? (Select all that apply)
   1. Official crime data
   2. Arrest information
   3. Surveys of people (non-offenders)
   4. Surveys of places or environments
   5. Interviews and discussions with people (non-offenders)
   6. Interviews of offenders
   7. Literature examination
   8. Consultation with government agencies
   9. Consultations with businesses
   10. Consultations with community organizations
   11. Other (specify)

17b. Specify (Other)___________________

18. What was the level/intensity of problem analysis?
   1. No analysis
   2. Shallow or cursory analysis (looked at official data)
   3. Moderate analysis (looked at official data with analysis by time of day, day of week etc.)
   4. In-depth analysis (3 above, as well as other problem analysis with other data)
   5. Authors do not provide sufficient detail to make an assessment

Describing the Response

19. At what unit of analysis was the treatment delivered/intervention primarily directed at?
   1. Micro place (e.g., hot spot)
   2. Meso area (e.g., neighborhoods)
   3. Large area (e.g., entire city)
   4. Individual offender
<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>5.</td>
<td>Individual victim</td>
</tr>
<tr>
<td>6.</td>
<td>Group of offenders (e.g., gang)</td>
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<tr>
<td>7.</td>
<td>Group of victims</td>
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<tr>
<td>8.</td>
<td>Individual guardian or manager</td>
</tr>
<tr>
<td>9.</td>
<td>Group of guardians or managers</td>
</tr>
<tr>
<td>10.</td>
<td>Entire population (no types of individuals or groups specified)</td>
</tr>
<tr>
<td>11.</td>
<td>Other (specify)</td>
</tr>
</tbody>
</table>

20a. Did the evaluation use the same unit of analysis as the unit the intervention was directed at?
   1. Yes
   2. No

20b. If No, specify the unit of analysis for the evaluation
   1. Micro place (e.g., hot spot)
   2. Meso area (e.g., neighborhoods)
   3. Large area (e.g., entire city)
   4. Individual offender
   5. Individual victim
   6. Group of offenders (e.g., gang)
   7. Group of victims
   8. Individual guardian
   9. Group of guardians
   10. Entire population (no types of individuals or groups specified)
   11. Other (specify)

21. Briefly describe the response(s) implemented
   
   ________________________________

22a. What techniques of situational crime prevention were used in the implementation of the response? (Select all that apply)

   1. Increasing the effort of crime
   2. Increasing the risks of crime
   3. Reducing the rewards of crime
   4. Reducing provocations
   5. Removing excuses for crime
   6. Situational crime prevention used, but specific techniques not specified
   7. N/A- Situational crime prevention not used
   8. Other

22b. Specify (Other)___________________
23a. What groups (other than the police) were involved in the implementation of the response? (Select all that apply)
   1. Neighborhood associations/organizations
   2. Government organizations/agencies
   3. Social service agencies
   4. Commercial establishments/businesses
   5. National organizations with an interest in the problem (e.g. MADD)
   6. Individual residents
   7. Other police agencies
   8. Other criminal justice agencies
   9. Other (specify)

23b. Specify (Other)___________________

24a. At what level of the police department was the response implemented? _____
   1. Entire department/all officers involved
   2. Certain precincts/districts involved
   3. Special unit (i.e. community policing unit) involved
   4. Select few officers in specific area involved
   5. Other (specify)
   6. N/A (not mentioned)

24b. Specify (Other)___________________

**Implementation of Response**

25. What did the evaluation indicate about the implementation of the response? ______
   1. There were no reported implementation issues
   2. There were minor implementation issues
   3. There were more substantial implementation issues
   4. There were major implementation issues/the project was not implemented as planned
   5. Unclear/no process evaluation included

26. If the process evaluation indicated there were problems with implementation of the response, describe these problems:

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

________________________________________________________________
**Location of the intervention**

27. Country where study was conducted: __________________
28. City (and state/province, if applicable) where study was conducted: __________________

*The following questions refer to the area receiving treatment:*

29a. Geographic area receiving treatment: ______
    1. Micro place (street segments/blocks)
    2. Neighborhood/police beat
    3. Police district/precinct
    4. Entire city
    5. Other (specify)

29b. Specify (Other)___________________

30. What is the exact geographic area receiving treatment?
   ___________________________________________________________
   ___________________________________________________________

*The following refer to the area not receiving treatment*

31a. Geographic area NOT receiving treatment: ______
    1. Micro place (street segments/blocks)
    2. Neighborhood/police beat
    3. Police district/precinct
    4. Entire city
    5. Other (specify)

31b. Specify (Other)___________________

32. What is the exact geographic area not receiving treatment?
   ___________________________________________________________
   ___________________________________________________________

**Methodology/Research design:**

33a. Type of study: ______
    1. Randomized experiment
    2. Nonequivalent control group (quasi-experimental)
    3. Multiple time series (quasi-experimental)
    4. Interrupted time series
    5. Other (specify)
33b. Specify (Other)___________________

33c. If a quasi-experiment, how was matching of groups achieved?
   1. Propensity score matching
   2. Identification of matching areas or persons through regression analyses
   3. Statistical tests of mean differences among demographic and other relevant variables
   4. Comparison of descriptive statistics with no statistical test of differences across groups
   5. Comparison to the rest of a jurisdiction or population that did not receive the treatment

33d. Specify (Other)___________________

34a. Were any sources of nonequivalence or bias reported or implied in the application of the intervention or its analysis (i.e. threats to internal validity)?
   1. Yes
   2. No

34b. If yes, what sources of nonequivalence or bias were identified? (check all that apply and explain)
   1. Extraneous events or factors occurring during the intervention period; historical artifacts
   2. Selection of treatment area based on high baseline crime rate
   3. Measurement confounds (measure changes over time)
   4. Differential attrition, breakdown of randomization, or contamination of control group
   5. Pre-test analyses indicated nonequivalence between treatment and control groups
   6. Statistical analyses failed to adjust for nonequivalence at baseline
   7. Inappropriate statistical analysis for design
   8. Any outcomes measured by reporters that did not have corresponding outcome measures in the results
   9. Other threats to internal validity (specify)

34c. Explain any yes responses checked in 34b.

________________________________________________________________
________________________________________________________________
________________________________________________________________

35. Did the researcher assess the quality of the data collected?
   1. Yes
   2. No
36a. Did the researcher(s) express any concerns over the quality of the data?
   1. Yes
   2. No

36b. If yes, explain
   _______________________________________________________
   _______________________________________________________
   _______________________________________________________

37a. Does the evaluation data correspond to the initially stated problem? (i.e. if the problem is fear of crime, does the evaluation data look at whether fear of crime decreased)
   1. Yes
   2. No

37b. If no, explain the discrepancy:
   _______________________________________________________
   _______________________________________________________
   _______________________________________________________

Outcomes reported (Note that for each outcome, a separate coding sheet is required)

38. How many crime/disorder outcomes are reported in the study? _____

39. What is the specific outcome recorded on this coding sheet?
   _______________________________________________________

40. Was it the primary outcome of the study? ______
   1. Yes
   2. No
   3. Can’t tell/researcher did not prioritize outcomes

Dependent Variable

41a. What type of data was used to measure the outcome covered on this coding sheet? _____
   1. Official data (from the police)
   2. Researcher observations
   3. Self-report surveys
   4. Other (specify)

41b. Specify (Other)_________________________
42a. If official data was used, what specific type(s) of data were used? (Select all that apply)
   1. Calls for service (911 calls)/crime reports
   2. Arrests
   3. Incident reports
   4. Level of citizen complaints
   5. Other (specify)
   6. N/A (official data not used)

42b. Specify (Other)___________________

43a. If researcher observations were used, what types of observations were taken? (Select all that apply)
   1. Physical observations (e.g. observed urban blight, such as trash, graffiti)
   2. Social observations (e.g. observed disorder, such as loitering, public drinking)
   3. Other observations (specify)
   4. N/A (researcher observations not used)

43b. Specify (Other)___________________

44a. If self-report surveys were used, who was surveyed? (Select all that apply)
   1. Residents/community members
   2. Business owners
   3. Elected officials
   4. Government/social service agencies
   5. Other (specify)
   6. N/A (self-report surveys not used)

44b. Specify (Other)___________________

Effect size/Reports of statistical significance

Sample size

45. Based on the unit of analysis for this outcome, what is the total sample size in the analysis? ________

46. What is the total sample size of the treatment group (group that receives the response)? ________

47. What is the total sample size of the control group (if applicable)? ________

48a. Was attrition a problem in the analysis for this outcome?
   1. Yes
   2. No
48b. If attrition was a problem, provide details (e.g. how many cases lost and why they were lost).

________________________________________________________________
________________________________________________________________
________________________________________________________________
________________________________________________________________

49a. What do the sample sizes above refer to?
1. Crimes
2. People
3. Geographic areas
4. Other (specify)

49b. Specify (other) ________________

Effect Size Data

50. Raw difference favors (i.e. shows more success for):
1. Treatment group
2. Control group
3. Neither (exactly equal)
9. Cannot tell (or statistically insignificant report only)

51. Did a test of statistical significance indicate statistically significant differences between either the control and treatment groups or the pre and post tested treatment group? _____
1. Yes
2. No
3. Can’t tell
4. N/A (no testing completed)

52. Was a standardized effect size reported?
1. Yes
2. No

53. If yes, what was the effect size? ______

54. If yes, page number where effect size data is found ______

55. If no, is there data available to calculate an effect size?
1. Yes
2. No
56a. Type of data effect size can be calculated from:
   1. Means and standard deviations
   2. $t$-value or $F$-value
   3. Chi-square (df=1)
   4. Frequencies or proportions (dichotomous)
   5. Frequencies or proportions (polychotomous)
   6. Other (specify)

56b. Specify (other) __________

Pre-post Study Counts

57a. Pre-period number of events for current outcome in target area _______
57b. During intervention-period number of events for current outcome in target area _______
57c. Post-period number of events for current outcome in target area _______
57d. Pre-period number of events for current outcome in comparison area _______
57e. During intervention-period number of events for current outcome in comparison area _______
57f. Post-period number of events for current outcome in comparison area _______

57g. Did the evaluation control for validity by using multivariate methods (i.e. regression) to assess the impact of the program?
   1. Yes
   2. No

57h. If yes, did this analysis find that the intervention reduced the outcome at a statistically significant level?
   1. Yes
   2. No
   3. N/A

Means and Standard Deviations

58a. Treatment group mean. ______
58b. Control group mean. ______

59a. Treatment group standard deviation. ______
59b. Control group standard deviation. ______

Proportions or frequencies

60a. $n$ of treatment group with a successful outcome. ______
60b. $n$ of control group with a successful outcome. ______
61a. Proportion of treatment group with a successful outcome. ______
61b. Proportion of treatment group with a successful outcome. ______

**Significance Tests**

62a. $t$-value ______
62b. $F$-value ______
62c. Chi-square value ($df=1$) ______

**Calculated Effect Size**

63a. Effect size ______
63b. Standard error of effect size ______

**Conclusions made by the author(s)**

*Note that the following questions refer to conclusions about the effectiveness of the intervention in regards to the current outcome/problem being addressed on this coding sheet.*

64. Conclusion about the impact of the intervention? ______
   1. The authors conclude intervention associated with a crime decline
   2. The authors conclude intervention not associated with a crime decline
   3. Unclear/no conclusion stated by authors

65. Did the assessment find evidence of a geographic displacement of crime? ______
   1. Yes
   2. No
   3. Not tested

66a. Did the assessment find evidence of other non-geographic types of displacement of crime? ______
   1. Yes
   2. No
   3. Not tested
66b. If yes, specify what types of displacement were found

________________________________________________________________
________________________________________________________________
________________________
67. Additional notes about conclusions:
   __________________________________________________________________
   __________________________________________________________________
   __________________________________________

68. Additional notes about study:
   __________________________________________________________________
   __________________________________________________________________
   __________________________________________
Appendix D: List of Policing Experts to be Consulted

List of policing scholars and practitioners contacted to identify any studies we missed (Note: Job titles reflect employer as of January 2019)

<table>
<thead>
<tr>
<th>Name</th>
<th>Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bayley, David</td>
<td>University at Albany, State University of New York</td>
</tr>
<tr>
<td>Boba Santos, Rachel</td>
<td>Radford University</td>
</tr>
<tr>
<td>Bobo, Lawrence</td>
<td>Harvard University</td>
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<td>Braga, Anthony</td>
<td>Northeastern University</td>
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<tr>
<td>Bynum, Tim</td>
<td>Michigan State University</td>
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<tr>
<td>Capowich, George</td>
<td>Loyola University, New Orleans</td>
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<td>Clarke, Ronald</td>
<td>Rutgers-Newark, The State University of New Jersey</td>
</tr>
<tr>
<td>Cordner, Gary</td>
<td>Kutztown University of Pennsylvania</td>
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<tr>
<td>Davis, Rob</td>
<td>The National Police Foundation</td>
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<td>Forst, Brian</td>
<td>American University</td>
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<td>Glensor, Ron</td>
<td>Arizona State University</td>
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<td>Goldstein, Herman</td>
<td>University of Wisconsin Law School</td>
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<td>Greene, Jack</td>
<td>Northeastern University</td>
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<td>Groff, Elizabeth</td>
<td>Temple University</td>
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<tr>
<td>Hope, Tim</td>
<td>University of Salford</td>
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<tr>
<td>Kelling, George</td>
<td>Manhattan Institute (x)</td>
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<td>Kennedy, David</td>
<td>John Jay College of Criminal Justice</td>
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<tr>
<td>Klinger, David A.</td>
<td>University of Missouri- St. Louis</td>
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<td>Knutsson, Johannes</td>
<td>Norwegian Police University College</td>
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<td>Koper, Chris</td>
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<td>Laycock, Gloria</td>
<td>Jill Dando Institute, University College London</td>
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<td>Lum, Cynthia</td>
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<td>Maclin, Tracey</td>
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<td>Name</td>
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<td>Sampson, Rana</td>
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<td>University of Texas</td>
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<td>Stephens, Darrel</td>
<td>Darrel Stephens Group, LLC</td>
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<td>Stephenson, Paul</td>
<td>Embrace Child Victims of Crime</td>
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<td>Tilley, Nick</td>
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