Work Package 1. Mapping the evidence base: a descriptive analysis of the WP1 Systematic Review Database.

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<u>Introduction</u>

This document gives some summary statistics for the sample of systematic reviews that met the WP1 inclusion criteria. These criteria are documented in the systematic review protocol for this work package. In summary, the final list of studies constituted 337 separate systematic reviews. In the tables below, counts are given for each category within the particular feature under discussion. Note that the total number of reviews categorised on each feature is always lower than N=337, this means that there were a number of reviews for which no information was coded on that feature. The reason for this is that due to the sheer numbers of the studies which met the inclusion criteria a 'light coding' approach was adopted[1]. This meant that coders were foremost searching for information on population, intervention, outcome and method. Once each of these themes had some data extracted from a study, the coder marked the study as coded. Thus, data were collected on some element of each theme for all studies, but the collected elements themselves are not consistent across studies. The following tables therefore present percentages for the sample for which coding information was present. The total number of reviews for which information was present on each dimension is summarised in Appendix 1.

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[1] This was also influenced by the fact that all studies would need to be revisited at a later date to apply a more comprehensive coding instrument to them and 'light coding' was felt to be the best balance of resources vs. data extraction requirements.

<u>Intervention</u>

Information on type of intervention is given in Table 1. Intervention was coded for n=330 of the reviews. In a further 7 cases the intervention type was unclear or missing. As illustration, considering percentages, for 28% of the reviews that were coded on intervention, sentencing and deterrence was cited as one element of the interventions reviewed. Educational interventions were examined in 23% of coded reviews and situational measures were present in 10% of them. Publicity and restorative justice were least likely to be mentioned.

The table demonstrates that a noticeable trend was for reviews to consider what can be classified as *tertiary* crime prevention interventions (Brantingham and Faust 1976). That is, those that deal with the offender after an offence has taken place. This includes sentencing, drug treatment interventions, restorative justice and correctional interventions. They constituted 47 percent of interventions mentioned.

Secondary interventions, which target 'at risk' groups, include community interventions, developmental and social prevention and educational interventions. Collectively, these constituted 27 percent of the interventions mentioned.

Finally, policing and partnership, publicity and situational prevention are often categorised as *primary* interventions. Such interventions constituted 13 percent of the interventions mentioned.

Table 1: Intervention types considered by the systematic reviews

Intervention Type	N	Percentage of coded reviews citing intervention
Community interventions	50	15
Correctional interventions	156	47
Developmental and social prevention	47	14
Drug treatment interventions	48	14
Educational interventions	79	23
Other	79	23
Policing and partnership	51	15
Publicity	7	2
Restorative Justice	12	3
Sentencing and deterrence	93	28
Situational prevention	34	10

<u>Offender treatment interventions</u>

There were a large number of interventions considered across the reviews that could generally be referred to as offender treatment interventions. However the nature of these interventions can be very different and the term is too broad to characterise interventions without further sub-categorisation.

Table 2: Subcategory of offender treatment

Type of offender treatment	N	Percentage of reviews considering treatment type
Behavioural treatment	79	63
Biological treatment	11	9
CBT - Cognitive-Behavioural Therapy	59	47
Community based	25	20
Counselling	7	5
Educational & skills training	14	11
Mentoring	1	1
Other	16	13
Pharmaceutical	5	4
Physical challenge programmes	9	7
Psychological therapy	61	48

Table 2 therefore shows the type of treatment given. It appears that systematic reviews gather evidence on various types of psychological approaches including cognitive behavioural therapy, psychological therapy and counselling. Behavioural treatment has a firm place in the evidence considered, reflecting the established evidence base demonstrating that behavioural treatments (with particular reference to cognitive behavioural therapy) have generally shown positive results with offender populations. Other types of programme supply skills training and mentoring. Finally, a smaller number focus on physical challenges or pharmaceutical intervention.

Population targeted by interventions

As is clear from the tables above, the offender is the focus of many of the interventions considered across the systematic reviews (170 reviews examined at least one intervention with this type of population). However non-offender populations were also considered in a sizeable number of reviews (with 58 reviews considering at least one of these types of intervention). Table 3 gives details on the populations considered.

Table 3: population targeted by intervention

Population targeted	N	Percentage of reviews reporting population
Offender demographic	*n=170*	
Adolescent	134	79
Adult	94	55
Children	40	23
Female	19	11
Male	31	18
Other	17	10
Specific ethnicity	6	3
Non-offender populations	*n=58*	
Other	37	64
Places	34	59
Victims	12	21

Table 3 shows that in many cases adolescents and children are the targets of the 'offender' based interventions that were reported by the reviews (mentioned in 79% and 23% of reviews reporting offender demographics). Many of these are early intervention programmes to attempt to discourage at risk youth or juveniles from falling into a criminal career, or to truncate an offending trajectory once a young person has come into contact with the criminal justice system. There are fewer cases where subjects of a particular gender or ethnicity are considered in the review evidence base. Places are a reasonably popular focus of the non-offender targeted interventions considered. Victims are sometimes a specifically considered targeted

population. The category of 'other' includes non-offending children and adolescents (in the case of universal interventions), families and communities.

It is interesting to look more specifically at the population of offenders considered. Table 4 presents this information. A large percentage of the reviews cited drug and alcohol abusers and violent offenders as targeted populations. Less often mentioned, but still featuring, were prisoners, probationers and the mentally ill.

Table 4: Specific offender population type

Specific Population type	N (=188)	Percentage of reviews mentioning a specific population
Antisocial	2	1
Domestic abusers	18	10
Drink-drivers	15	8
Drug/alcohol abusers	59	34
Gangs	6	3
Mentally ill	19	11
Prisoners	39	22
Probationers	25	13
Sex-offenders	43	23
Violent offenders	47	25

Type of outcome considered

Systematic reviews, by their very nature, are focused on summarised evidence for a particular type of outcome. In crime prevention there are a number of different outcomes that are of interest. Tables 5 and 6 summarise these. Table 5 shows that whilst a direct reduction in a certain type of crime is often examined, there are many other types of outcome considered as well. These are often to do with changing behaviour of offenders- such as reductions in aggressive or antisocial behaviours or drug taking, or improvement in engagement with more positive behaviours[2]. For interventions aiming to change offender behaviour, and subsequently reduce risk of

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[2] It should be noted however that to meet the inclusion criteria for WP1 a study must have had crime reduction or prevention as a measured outcome. So, reductions in aggression would only be included if they featured in a study that *also* measured some form of crime prevention outcome.

re-offending, the behavioural change itself can be seen as an *intermediate* outcome. That is, it is important to observe change in behaviour first, in order to help attribute any change in re-offending to the activity of the intervention. It is also worth mentioning that in a number of cases there were considerations of other outcomes such as unintended displacement or diffusion of benefit. Some of the non-crime outcomes included in the 'other' category in Table 5 include:

- Behavioural changes
- Changes in charges or convictions
- Changes in time in custody
- Changes in self-reported victimisation
- Changes in levels of police contact
- Programme attrition rates
- Changes in levels of delinquency
- Health related outcomes
- Displacement or diffusion of benefit measures
- Changes in levels of victim disclosure
- Changes in violation rates
- Changes in re-conviction rates

It is important to note that the type of data on which outcome is assessed is distinct from the outcome itself. Therefore Table 6 considers the types of construct that were used to assess the outcomes. In keeping with the observation that a large proportion of the interventions considered were tertiary interventions dealing with offenders who have already committed offences, reoffending and recidivism data are often used to judge the effectiveness of crime prevention interventions in systematic reviews. Both recorded crime data and arrest data are also frequently examined to assess intervention effectiveness by reviewers. Self-reported offending and calls for service data appear to be less frequently used.

Table 5: Type of Outcome

Type of outcome	N (=155)	Percent of those coded
Crime type	93	60
Other	104	67
Unintended outcomes	12	8

Table 6: Outcome construct used

Outcome data type	N (=288)	Percent of those coded
Anti-social behaviour	7	2
Arrests	104	35
Calls for service	14	5
Reoffending/recidivism (general)	206	71
Recorded crime	105	35
Self-reported offending	53	18

Type of crime or behaviour targeted

Where it was possible to do with the light-coding, the sub-category of crime was noted. This has not been coded systematically enough to confidently quantify variation, but Table 7 gives details of some of the subcategories that were targeted. Some of the common outcome types appear to include drug related outcomes (reductions in drug use for example), domestic violence reduction, reduction in alcohol-related behaviour and reduction in sexual offences.

Table 7: Sub-categories of crime

Crime Sub-category	N
Corporate crime	1
Gun crime	1
Gun related	1
Rape	1
Robbery	1
ASB	2
Burglary	2
Homicide	2
Violence and property	2
Drunk driving	3
Traffic offences	5
Aggression	6
Domestic Violence	8
Sexual	16
Alcohol- related offending	16
Violence	18
Drug-related offending	20

Country of intervention

Table 8 shows the countries considered by the systematic reviews in gathering evaluation evidence. A large proportion of the evidence considered in reviews used evaluation evidence from places in North America only. The UK and Australia were also popular geographical regions considered by the reviews. This makes sense, as a large number of evaluation studies originate in these places, and many of the researchers leading systematic reviews are located in these countries and are funded by organisations with particular policy contexts in mind.

Table 8: Countries covered by systematic reviews

Country	N (=106)	Percentage of reviews mentioning geographic area
Australia	26	24
International	27	25
North America	84	79
Other	19	18
UK	36	33

Implementation information

The availability of implementation activity was not part of the WP1 inclusion criteria. Therefore any presence of information on implementation was only noted when it was obvious during coding, which occurred in 35 cases. The type of information noted by the coders includes information on costs (in 8 studies), programme integrity (how much the program stuck or drifted from its goals, and the extent to which outputs were achieved; in 23 studies) and information on likely mechanisms by which the interventions worked, or the variation in how they worked by context (in 12 studies). However, in a large number of cases implementation information was not directly recognised as present in the write up by the coders. This demonstrates that it appears in general these contextual issues regarding how to successfully implement crime prevention and reduction schemes are not reported in systematic reviews, or they are not reported in a prominent way.

Characteristics of the reviews meeting the inclusion criteria

This section summarises characteristics of the reviews themselves. To meet the inclusion criteria, the reviews had to have a systematic search strategy, giving key terms and/or a list of databases that were going to be searched. As would therefore be expected a large number of the reviews were best described as systematic reviews- with reviews of reviews (also known as meta-reviews as they synthesise systematic review evidence) being the next most common description. REAs, which, by definition, use systematic approaches to searching were also present. In general, multi-site evaluations have not yet been coded (in WP1) but a small number of those fully coded were best described in this way.

The criteria are further reflected in the type of analytical technique used. Of the 240 reviews for which this information was available, a large percentage used meta-analysis techniques and a smaller percentage used synthesis methods (such as vote counting or reporting a summary of the findings published by the authors of the individual review) or mixed-methods (where both quantitative aggregation and

qualitative synthesis was used)[3]. Note that, as in other cases, a certain percentage of the reviews involved using more than one analytical technique. Most of the coded reviews had at least some quantitative data integrated. Qualitative information was also used as evidence in a number of the reviews, but this was reported less often in the coding.

Table 9: Characteristics of the reviews

Type of review	(n=265)	%
Multi-site evaluation	3	1
Narrative	7	3
Rapid Evidence Assessment	10	4
Realist approach	1	0
Review of reviews	22	8
Systematic review	236	89
Analytical technique	(n=240)	
Meta-analysis	184	77
Mixed-method	7	3
Synthesis	61	25
Type of data integrated in the review	(n=172)	
Primary data	36	21
Qualitative information included	36	21
Quantitative information included	152	88
Secondary data	13	8

The final codes reported where the systematic reviews used in the coding process were sourced, the format in which they were published and the date of publication of the review. A variety of different databases were used to search for and retrieve studies- among the most fruitful were National Criminal Justice Recording System, SCOPUS and Criminal Justice Abstracts[4]. However half of the studies were found through other search strategies that did not rely on electronic databases (e.g. a grey literature expert, searches of reference lists). Overwhelmingly, the systematic

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[3] Please note that there was flexibility in the way in which 'mixed-methods' could be coded. For example, checking 'narrative' and 'meta-analysis' might also reflect this type of approach. Again, the prevalence of such reviews will become easier to identify after full 'EMMIE' coding.
[4] Note that a lot of records were duplicated across multiple databases (n=151). In this case the clearest record was chosen as the master copy. This will bias this analysis towards certain databases. Only 23 studies were retrieved from one single database alone.

reviews were published as journal articles, with books and book chapters comprising a noteworthy minority. Just over a fifth of the sample came from grey literature sources (reports, documents from internet sites and dissertations) (see Table 10).

Table 10: Publication type

Type of publication	N
Book, Chapter	17
Book, Whole	13
Dissertation	13
Document From Internet Site	18
Journal, Article	230
Report	46
Total	*337*

Finally, Figure 1 below summarises information on the year of publication of the review. The vast majority of those coded were published post 2000, with a particular peak in reviews published at the end of the first decade of 2000, reflecting the growth of organisations such as the Campbell Collaboration and the increasing use of systematic review methods for evidence synthesis.

Figure 1: Year of Publication of the reviews meeting the inclusion criteria.
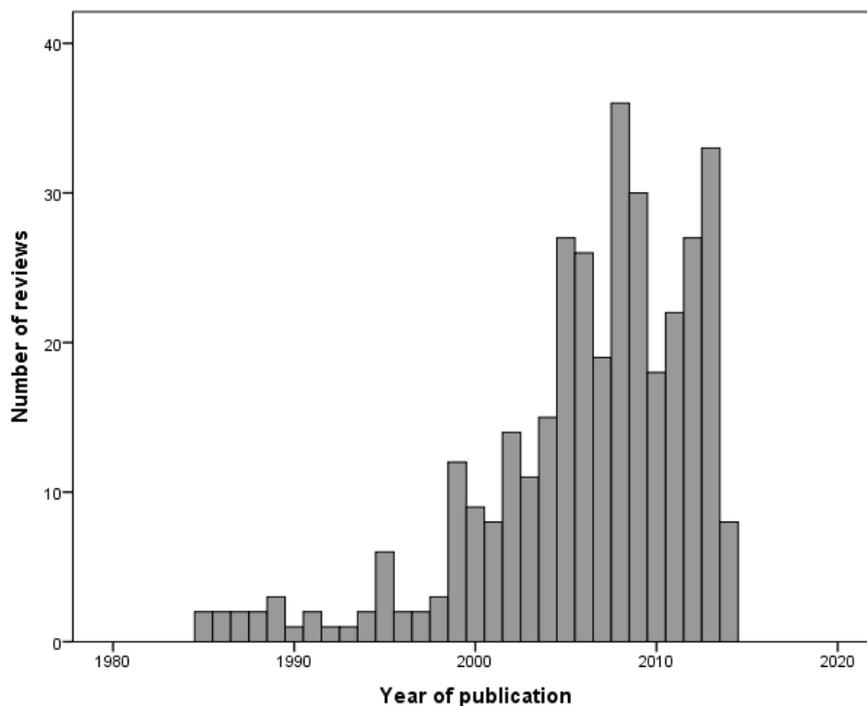
Investigating interactions between codes

A final descriptive analysis used cross-tabulations to investigate inter-relationships between the codes. The analysis focussed on answering types of question such as:

- Is there anything different about the characteristics of reviews that consider a certain type of intervention (such as policing for example) in comparison with others?
- Are there any differences in the scope or subject matter of those that use certain types of method (such as meta-analysis) from those that do not? For example, do reviews considering situational measures tend to use meta-analysis?
- Are there trends over time in terms of the type of intervention considered in review and the methods used or the outcomes considered?

The cross-tabulations presented below do not answer these questions in detail, but demonstrate that there are some interesting trends in the reviews that are worthy of attention. Table 11 cross-tabulates intervention and analytical technique. It appears that meta-analysis dominates in reviews that examine correctional interventions and sentencing and deterrence. Reviews containing information on the effectiveness of policing and partnership, and situational approaches, whilst more commonly than not employing meta-analysis, do also have more sizable proportions taking other synthesis approaches. This might reflect variation in the methodological quality of the primary evaluations contributing to the reviews.

Table 12 cross-tabulates intervention and type of data included in the review. This reflects Table 11 demonstrating that a large majority of the evidence used in the reviews is quantitative in nature for correctional interventions and sentencing and deterrence. Whilst quantitative information is still much more frequent among the other types of intervention, the proportions involved are less extreme.

Table 11: Cross-tab of intervention type against analytical method

	Community interventions	Correctional interventions	Developmental and social prevention	Drug treatment interventions	Educational interventions	Policing and partnership	Publicity	Sentencing and deterrence	Situational prevention
Meta-analysis	24	92	21	29	46	22	2	61	16
Synthesis	12	25	14	8	14	16	0	9	10
Mixed-method	4	1	2	0	4	2	1	2	2

Table 12: Cross-tab of intervention type against type of data included

	Correctional interventions	Community interventions	Developmental and social prevention	Drug treatment interventions	Educational interventions	Policing and partnership	Publicity	Sentencing and deterrence	Situational prevention
Qualitative information included	13	9	4	4	10	7	2	4	6
Quantitative information included	72	20	19	21	34	22	3	38	19
Primary data	12	5	7	3	10	6	1	8	5
Secondary data	5	3	5	2	4	2	1	2	1

The final set of cross-tabulations explore the relationship between various features of the reviews and their dates of publication. It seems likely that over time methods favoured and the type of intervention considered in the reviews might vary. Table 13 therefore tracks the type of method used over time. In line with the rise in popularity of meta-analysis in the late 90s and early 00s a large proportion of analyses of these type were conducted during these years. It is interesting to observe that there is a greater proportion of reviews in the database that do not use meta-analytical methods in the last four years. There are a number of possible explanations for this including saturation in certain interventions (there are less opportunities for new reviews with meta-analysis) or a change in fashion towards doing more qualitative or mixed methods reviews.

Table 13: Cross tab of analytic technique and year of publication

	Meta-analysis	Synthesis	Mixed-method
1985-1989	7	2	0
1990-1999	20	3	0
2000-2009	110	30	2
2010-2014	47	26	5

Table 14: Cross-tab of offender population targeted and year of publication

	Adult	Adolescent	Children	Female	Male	Specific ethnicity
1985-1989	0	8	2	0	1	0
1990-1999	15	20	4	2	5	0
2000-2009	54	66	19	11	18	4
2010-2014	25	40	15	6	7	2

Table 14 explores those reviews with interventions targeting offender populations. It suggests a more recent focus on initiatives aimed at children or adolescents.

Table 15: Cross-tab of intervention type by year of publication

	Correctional interventions	Community interventions	Developmental and social prevention	Drug treatment interventions	Educational interventions	Policing and partnership	Publicity	Sentencing and deterrence	Situational prevention
1985-1989	10	1	0	0	2	1	0	3	0
1990-1999	25	5	5	6	9	2	0	12	3
2000-2009	78	28	29	28	45	26	4	49	23
2010-2014	43	16	13	14	23	22	3	29	8

Table 16: Cross-tab of data type by year of publication

	Anti-social behaviour	Arrests	Calls for service	Recorded crime	Reoffending / recidivism	Self-reported offending
1985-1989	0	3	0	2	10	2
1990-1999	0	11	0	9	28	7
2000-2009	6	53	9	58	101	33
2010-2014	1	37	5	36	67	11

Table 15 presents a cross-tab exploring the types of intervention investigated by the reviews over time. It demonstrates that consideration of correctional interventions and sentencing has been reasonably evenly distributed over time. It also shows that the early 00s were a time in which situational interventions were explored by reviews and that there have been less of these since 2010. Interestingly, there appears to be a trend for more contemporary reviews to look at policing and partnership interventions in greater proportions. Table 16 examines data types used by year of publication. There appears to be a fair degree of consistency over time in terms of the proportion of reviews using different outcome data types.

Conclusion

This report has provided summary statistics and a descriptive analysis of the reviews coded as part of Work Package 1. Some points of particular interest are;

- That there are a large number (n=337) of systematic reviews that consider the effectiveness of crime prevention interventions. This becomes particularly noticeable when comparing the number of studies to reviews in other fields. For example, the Education Endowment Foundation Toolkit covers 34 topics.
- That a large proportion of the interventions considered by the reviews appear to be tertiary forms of prevention (those focusing on offenders after an offence has been committed). In particular, a large number focus on correctional interventions and sentencing and deterrence.
- That a large proportion of the reviews used meta-analysis and relied heavily on quantitative data to assess the outcome of interventions.
- That this reliance on quantitative approaches was particularly true of those types of intervention that were more frequently considered (e.g. correctional interventions and sentencing and deterrence).
- That a large range of outcome types and outcome data are used in crime prevention focused systematic reviews. These include more direct outcomes such as changes in recorded crime rates and/ or recidivism rates but also *intermediate* outcomes such as changes in offender behaviours and *unanticipated* outcomes such as displacement or diffusion of benefit.
- That there is some evidence of a recent increase in the use of synthesis approach other than traditional meta-analysis.

References

Brantingham, P.J. and Faust, F.L. (1976) 'A conceptual model of crime prevention',
Crime and Delinquency 22: 284-296

Appendix 1: Number of reviews for which coded information was present.

Coding item Total N=345	YES CODED	NOT CODED	ASSESSED AS UNCLEAR
Country	106	231	0
Offender population demographic	170	145	22
Non-offender pop	58	267	20
Offender Population detail	188	131	18
Intervention cat	330	4	3
Offender treatment	126	206	5
Outcome details	155	174	8
Outcome data type	288	36	13
Type of review	265	67	5
Analytic technique	240	93	4
Data integrated	172	165	0
Implementation information	35	299	3