



## Summary

This analysis assessed the impact on re-offending of individuals completing the Drug Rehabilitation Requirement (DRR) programme run by the charity Brighton Oasis Project (BOP) for female offenders with community sentences or court orders.

The one-year proven re-offending rate<sup>1</sup> for 43<sup>2</sup> offenders who completed this programme was 53%, compared with 47% for a matched control group of similar offenders when controlling for a set of complex characteristics and needs<sup>3</sup>. Testing has shown that this difference is not statistically significant<sup>4</sup>; suggesting that at this stage there is insufficient evidence to draw a conclusion about the impact of the DRR programme on the re-offending rate of its participants. However, the results of the analysis do not mean that the DRR programme failed to have an impact on re-offending behaviour.

Several additional analyses were performed in order to evaluate the impact of the DRR programme run by BOP in more detail:

- 1) A regional analysis comparing the treatment group to a control group of similar offenders from the South East area, where BOP mainly operate.
- 2) A national analysis comparing the treatment group to a control group of similar offenders on a national level, controlling only for standard characteristics.

The results of these analyses show some differences from the main analysis but none of them shows a statistically significant difference between treatment and control groups in the one-year re-offending rate.

The DRR programme works with offenders who have histories of substance misuse, both with drugs and alcohol. In order to form a control group of similar individuals, information from the Offender Assessment System (OASys) was used to control for substance misuse and related issues among the offenders.

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<sup>1</sup> The **one-year proven re-offending rate** is defined as the proportion of offenders in a cohort who commit an offence during a one-year follow-up period, where the offence was proven through receipt of a court conviction, caution, reprimand or warning during the follow-up or during a further six month waiting period. The one-year follow-up period begins when an offender leaves custody, starts their court sentence or receives their caution.

<sup>2</sup> 43 individuals were matched from a cohort of 65 individuals whose details were sent to the Justice Data Lab, as described on page 4 of this report.

<sup>3</sup> Please see Annex C for a profile of the needs and issues experienced by the treatment group as recorded by Offender Assessment data.

<sup>4</sup> The p-value for the one-year proven re-offending rate is shown in table 1 on page 7. Statistical significance testing is described on page 10 of this report.

**What you can say:** There is insufficient evidence at this stage to draw a conclusion about the impact of the Drug Rehabilitation Requirement (DRR) programme run by Brighton Oasis Project on the one-year proven re-offending rate.

**What you cannot say:** This analysis shows that completing the prison-based Drug Rehabilitation Requirement (DRR) programme run by Brighton Oasis Project increased or decreased the one-year proven re-offending rate by any amount.

## Introduction

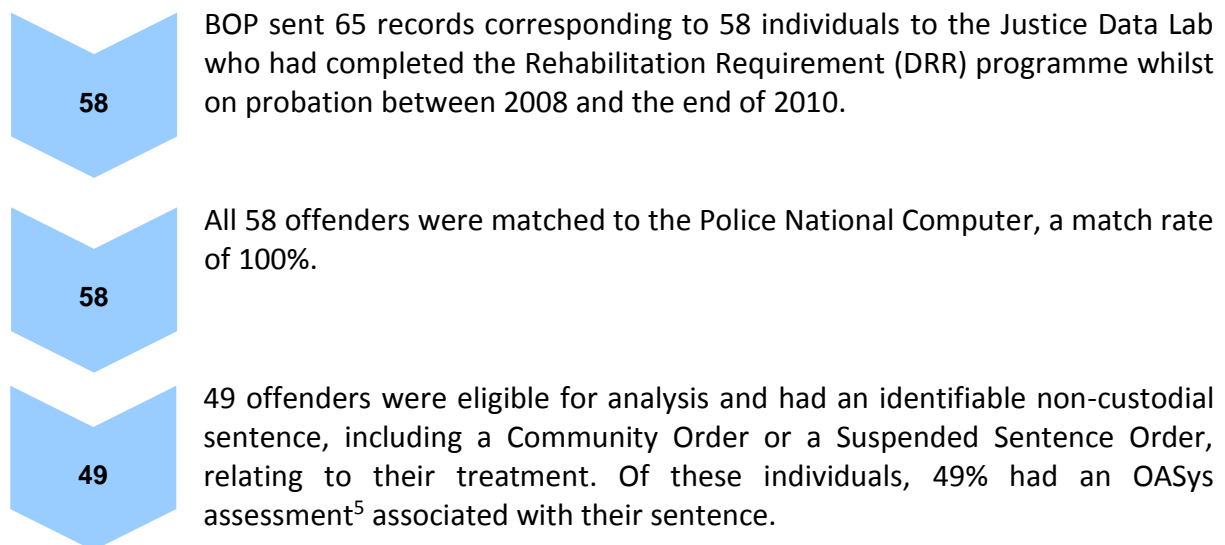
BOP offers a broad range of substance misuse interventions from harm minimisation and advice through to long-term recovery. The services are informed by a gendered understanding of what works for women, seeking to address a woman's needs holistically and providing individualised support to complement core group programmes according to needs identified. At the point of referral women commonly present with multiple, complex needs across the nine offending pathways and these will be addressed using a care planning and coordination approach.

The DRR programme is a community-based sentencing option for female offenders with substance misuse problems. The intervention is delivered in partnership with Surrey and Sussex Probation Trust (SSPT), who propose the DRR for females who meet the criteria. Women sentenced to a DRR will be living in the Brighton and Hove area and may or may not already be in the treatment system. They also share a number of characteristics including domestic and sexual violence, insecure housing or homelessness and fragmented family ties including loss of children to the care system. These issues are worked with alongside, and in the context of, their substance misuse. BOP also provides Specified Activity Requirements (SARs) to female sex workers and this may or may not be connected to their substance misuse.

The most common length of a DRR sentence is 6 months, although those attending will usually progress to Phase 2 programmes following a DRR where they consolidate the learning from the programme, increase personal responsibility and build on the foundations learnt to facilitate long term recovery. The core timetable features our programme 'Breaking the Cycle', focusing on offending behaviour and relapse prevention. This utilises a range of evidence-based approaches including: Brief Solution-Focused Therapy (BSFT), Motivational Interviewing (MI), Cognitive Behavioural Therapy (CBT), pro-social modelling, cycle of change and goal-setting.

This analysis relates to female offenders who completed the programme between 2008 and the end of 2010 whilst on probation.

## Processing the data



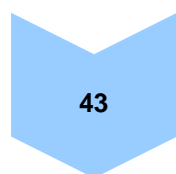
Analysis of the 9 matched individuals who could not be incorporated into the analyses revealed the following:

- There are 5 individuals for whom no sentence relating to their treatment could be found on the administrative data sets.
- There are 4 individuals who could not be included in the analysis for modelling purposes. These individuals could not be included in the analysis as they had characteristics that were substantially different from the remainder of the matched group.

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<sup>5</sup> OASys assessments provide information on the risks and needs of each offender, which are used alongside other characteristics to improve the matching between treatment and control groups. Those without OASys assessments remain in the analysis, but are matched without consideration of these factors. For further information on the methodology for incorporating OASys into the JDL process, see [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/491688/oasys-methodology.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/491688/oasys-methodology.pdf)

## Creating matched treatment and control groups



43 of the 49 eligible individuals in the complex model for whom re-offending data was available were successfully matched to offenders who had similar characteristics but who did not take part in the DRR programme, when controlling for a complex set of offender characteristics and needs. In total, the matched control group consisted of 5,856 records<sup>6</sup>.

Annex B provides information on the similarity between the treatment and control groups. Further data on the matching process is available on request.

## Results

Three analyses were conducted in order to understand the impact of controlling for individual offender risks and needs and for regional variation. Two models of risk and need were assessed in comparison with a national control group, and the standard model was also compared to a regional control group<sup>7</sup>:

- Standard model – essential characteristics used, with no OASys information included.
- Complex model – characteristics of the standard model used, along with OASys information on drug and alcohol use, mental health, attitude towards offending, accommodation status, employment history and employability and relationships with family and partner.

An intermediate model was run, which considered the characteristics of the standard model along with OASys information on drug and alcohol use, mental health and attitude towards offending, but the matching quality and results were found to be very similar to those of the complex model and so have been omitted from this report.

### One-year re-offending rate

When controlling for drug and alcohol use, mental health, attitude towards offending, accommodation status, employment history and employability and relationships with family and partner, the one-year proven re-offending rate<sup>1</sup> for 43<sup>2</sup> offenders who participated in the DRR programme was 53%, compared with 47% for a matched control group of 5,856 similar offenders from England and Wales (national complex analysis). The difference between the groups is not statistically significant. Figure 1 illustrates this result and those of the standard analyses, both complex and standard, showing the ranges within which the true re-offending rates are estimated to be.

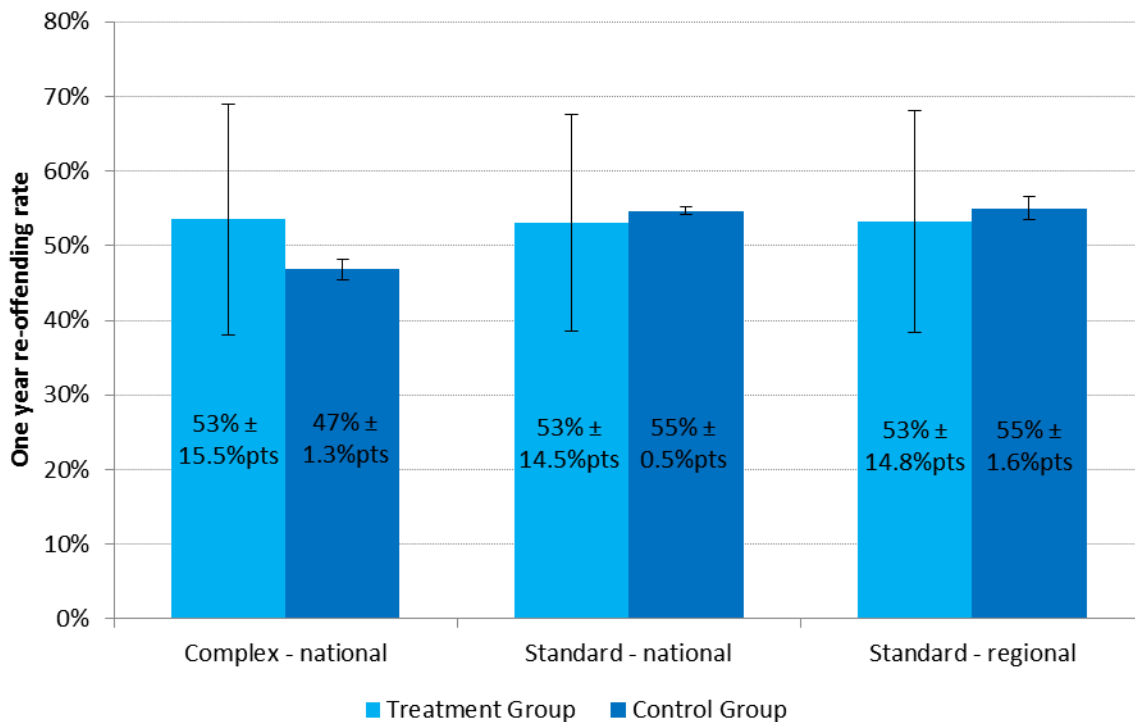
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<sup>6</sup> The sizes of the matched control groups differ for each model; please see table 1.

Please see the methodology for incorporating OASys information into the JDL process for further information - [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/491688/oasys-methodology.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/491688/oasys-methodology.pdf)

<sup>7</sup> A regional complex model was run, however it was not possible to get a control group that was well matched. See Annex B for further details on matching quality.

Figure 1: One-year proven re-offending rates for all participants of BOP's DRR programme, compared with matched control groups



The results of these analyses show some differences from the main analysis but none of them shows a statistically significant difference between treatment and control groups in the one-year re-offending rate. For all participants of BOP's DRR programme, the differences between treatment and control groups are estimated to be:

- Between a 9 percentage point reduction and a 22 percentage point increase in the one year re-offending rate for the national complex model (controlling for mental health, substance misuse, accommodation and relationship issues).
- Between a 16 percentage point reduction and a 13 percentage point increase in the one year re-offending rate for the national standard model.
- Between a 17 percentage point reduction and a 13 percentage point increase in the one year re-offending rate for the regional standard model.

Therefore we do not have significant evidence that completing the DRR programme led to a reduction or an increase in re-offending by the treatment group and, as such, cannot draw a firm conclusion about its impact. The confidence intervals illustrate the fact that both the treatment and control groups are samples of larger populations, and so the re-offending rates are estimates of the true values.

Table 1 gives the results of these analyses, including the ranges within which the true differences between the groups are estimated to be.

*Table 1: One year re-offending rates and p-values*

Model	Area	Number in treatment group	Number in control group	One-year proven re-offending rate				
				Treatment group (%)	Control group (%)	Estimated difference (% points)	Significant difference?	p-value
Complex	National	43	5,856	53	47	-8.9 to +22.3	No	0.39
Standard	National	49	32,485	53	55	-16.1 to +12.9	No	0.82
	Regional	47	3,995	53	55	-16.7 to +13.1	No	0.81

The results show that we do not have significant evidence that BOP's DRR programme led to a reduction or an increase in the rate of re-offending among its participants<sup>8</sup>.

## Additional proven re-offending measures

### Frequency of re-offending

When controlling for drug use and alcohol use, mental health, attitude towards offending, accommodation status, employment history and employability and relationships with family and partner, the one-year proven re-offending frequency for 43 offenders who participated in the BOP DRR programme was 2.42 offences per person, compared with 1.71 in the matched control group (national complex analysis). The difference between the groups is not statistically significant.

All the analyses show consistent results, with no statistically significant differences in the one-year proven re-offending frequency. Table 2 gives the results of these analyses.

*Table 2: One-year proven re-offending frequencies and p-values for all participants of BOP's DRR programme, compared with matched control groups*

Model	Area	Number in treatment group	Number in control group	One-year proven re-offending frequency (offences per person)			
				Treatment group	Control group	Significant difference?	p-value
Complex	National	43	5,856	2.42	1.71	No	0.39
Standard	National	49	32,485	2.61	2.16	No	0.82
	Regional	47	3,995	2.32	2.27	No	0.81

The results show that we do not have significant evidence that the BOP DRR programme led to a reduction or an increase in the frequency of re-offending among its participants.

<sup>8</sup> If the measured difference in the one-year re-offending rate is correct, there is a 95% chance that this difference would become statistically significant if the treatment group in the national complex model contained at least 842 individuals. The corresponding figure for the national standard model is 20,484.

## **Time to re-offending**

In the national complex analysis, the average time to first proven re-offence for 23 offenders who participated in the BOP DRR programme, and who re-offended within a one-year period, was 122 days, compared with 123 days for a matched control group of 2,491 similar offenders who also re-offended within a one-year period. The difference between the groups is not statistically significant.

When controlling for more characteristics in the complex model, the time to first re-offence is slightly shorter when compared to the matched control group, whilst the opposite is true when looking at the standard analyses. Despite these differences, none of the analyses shows a statistically significant difference in the time to first proven re-offence within a year. Table 3 gives the results of these analyses.

*Table 3: Average time to first proven re-offence and p-values for all participants of BOP's DRR programme who re-offended within a one-year period, compared with matched control groups*

Model	Area	Number in treatment group	Number in control group	Average time to first proven re-offence within a one-year period, for re-offenders only (days)			
				Treatment group	Control group	Significant difference?	p-value
Complex	National	23	2,491	122	123	No	0.95
Standard	National	26	12,563	120	113	No	0.73
	Regional	25	1,567	124	107	No	0.37

The results show that we do not have significant evidence that BOP's DRR programme led to a reduction or an increase in the time to first re-offence among those of its participants who re-offended within a one-year period.

## **Measures of severity of re-offending and re-offending resulting in custody**

Further measures regarding the severity of re-offending and of re-offences resulting in custody have not been included in this report. This is because the numbers within each category were too small to make reliable estimates for these measures.



## Annex A

### Caveats and limitations

The statistical matching used in this analysis is based on data collected for administrative purposes, and it has only been possible to control for a limited amount of information about the offenders within the treatment and control groups. While these include details of each offender's previous criminal history, alongside more standard offender characteristics such as age, gender and ethnicity, it is possible that other important contextual information that may help to explain the results has not been accounted for. The inclusion of OASys data in this analysis of the DRR programme has allowed for certain issues and needs linked to drugs/alcohol, mental health, accommodation and relationships to be statistically controlled for, where previously the Justice Data Lab was unable to do this.

Many organisations that work with offenders will target specific needs of individuals, such as housing or substance misuse. However, the processes used to select those individuals could lead to selection bias, which can impact on the results. Individuals may, for example, self-select into a service because they are highly motivated to address one or more of their needs. This would result in a positive selection bias, meaning that these people would generally be expected to have a better re-offending outcome than a randomly selected sample. Alternatively, some organisations might specifically target those who are known to have more complex needs and whose attitudes to addressing their needs are more challenging. This would result in a negative selection bias, meaning that these individuals would generally be expected to have a poorer re-offending outcome than a randomly selected sample, because they are not motivated to address their needs. However, the inclusion of OASys data which indicates the motivation an individual has to tackle their drug or alcohol misuse may address some of these factors; some factors which would lead to selection bias in either direction are not represented in our underlying data, and cannot be reflected in our modelling. This means that all results should be interpreted with care, as selection bias cannot be fully accounted for in analyses.

Furthermore, only 43 of the 58 offenders originally shared with the MoJ were in the final treatment group. The section "Processing the Data" outlines key steps taken to obtain the final group used in the analysis. In many analyses, the creation of a matched control group will mean that some individuals, who will usually have particular characteristics – for example a particular ethnicity, or a certain type of offence, will need to be removed to ensure that the modelling will work. Steps will always be taken at this stage to preserve as many individuals as possible, but due to the intricacies of statistical modelling some attrition at this stage will often result. As such, the final treatment group may not be representative of all offenders who participated in the DRR programme provided by Phoenix Futures. In all analyses from the Justice Data Lab, persons who have ever been convicted of sex offences will be removed, as these individuals are known to have very different patterns of re-offending.

The re-offending rates included in this analysis **should not** be compared with the national average, nor with any other reports or publications which include re-offending rates – including those assessing the impact of other interventions. The re-offending rates included

in this report are specific to the characteristics of those people who attended the DRR programme run by Brighton Oasis Project, and who could be matched to a control group. Any other comparison would not be comparing like for like.

For a full description of the methodology, including the matching process, see [www.justice.gov.uk/downloads/justice-data-lab/justice-data-lab-methodology.pdf](http://www.justice.gov.uk/downloads/justice-data-lab/justice-data-lab-methodology.pdf).

## **Assessing statistical significance**

This analysis uses statistical testing to assess whether a measured difference in re-offending behaviour can reasonably be attributed to chance, or if the intervention is likely to have led to a real change in behaviour. The outcome of each statistical test is a 'p-value', which is between 0 and 1, indicating the certainty that a real difference in re-offending between the two groups has been observed. The smaller the p-value, the less likely it is that chance is the explanation for the measured difference.

If the p-value is less than, or equal to, 0.05, the result is regarded as 'significant' because chance appears to be an unlikely explanation. The measured difference is then attributable either to the treatment intervention or to some other difference between the treatment and control groups (see 'caveats and limitations' above). The confidence intervals in the figure are helpful in judging whether something is significant at the 0.05 level. If the confidence intervals for the two groups do not overlap, it indicates that there is significant evidence of a real difference between their re-offending rates.

## **Annex B – Quality of matching summary**

The quality of matching between the treatment and control groups is assessed using the standardised differences for all variables that are included in the matching process (please see Tables A1-A3 in the Excel annex accompanying this report). Table A1 (national complex model) show that the two groups that control for various needs and issues of those in the treatment group were well matched on most variables found to have associations with receiving treatment and/or re-offending.

The standardised differences highlighted as amber (i.e. between 6% to 10% or -6% to -10%) whether an individual has no problems or some problems with consequence awareness, if there partner is an offender, if they don't have any problems with impulsivity and if they have no issues with motivation, suggesting that the control groups could have been slightly better matched in this case, but were still indicative of a control group who exhibit similar characteristics.

A regional complex model was run and analysed. However, when assessing the matching quality it was not deemed to be sufficient enough to publish the comparisons. This is despite adding more controls in than the standard JDL approach.

Tables A2 and A3 (standard models, national and regional respectively, which do not include OASys information) shows that all but one standardised differences for key variables are between -10% and 10%. This indicates that the two groups are well matched on characteristics that were found to have associations with receiving treatment and/or with re-offending, with the exception of P45 employment in the year prior to the conviction of the index offence. This variable was not significant in either of the models so was dropped from the model and would not have been integral in the matching process, as such it is not surprising that this aspect is not well matched.

## **Annex C – Profile of the treatment group**

Figures B.1-B.3 (in the Excel annex accompanying this report) give a profile of the 21 individuals in the treatment group who have an OASys assessment, showing the needs and issues relevant to this group.

Chart B.1 shows that 57% of the treatment group used drugs at least once a week at the time of their assessment, while 33% had significant drug problems and 19% had significant alcohol problems. These are consistent with the fact that the BOP DRR programme focuses on people with substance misuse needs. Other needs were also prevalent, with 67% having been involved in domestic violence (either as a perpetrator or a victim), 10% having no fixed abode, 10% having significant psychological problems and 5% having significant problems with close family relationships. This demonstrates that the BOP DRR programme provides treatment to people with a broad range of needs.

Figure B.2 shows other needs that are combined with significant drug and/or alcohol problems. It indicates that 33% of the treatment group with an OASys assessment combined substance misuse with significant problems with relationships, 29% combined substance

misuse with having been a perpetrator or victim of domestic violence, 10% combined substance misuse with having no fixed abode, 5% combined substance misuse with significant problems with close family relationships and 5% combined substance misuse with having significant psychological problems. This indicates that many individuals in the treatment group have additional needs combined with current substance misuse issues.

Figure B.3 compares current and past misuse of drugs and alcohol. 100% of treatment group members with an OASys assessment have had drug problems at some time, while 43% have had alcohol problems at some time. In both cases, around half of these people also had current problems at the time of their index offence. This indicates that a substantial proportion of the treatment group had drug and/or alcohol issues at the time of their assessment, and all have had these problems at some time.

## Annex D

### Glossary of terms

#### **95% confidence intervals**

If the measured value for a re-offending measure were equal to the true mean, 95% of repeat analyses would give a value that is within the measured 95% confidence intervals.

#### **Copas rate**

The Copas rate controls for the rate at which an offender has built up convictions throughout their criminal career. The higher the rate, the more convictions an offender has in a given amount of time.

#### **Custodial sentence**

A sentence that requires an individual to serve time in custody as a result of a conviction for one or more offences.

#### **Follow-up period**

This refers to the time period for which re-offending is measured from the index date.

#### **Frequency of one-year proven re-offending**

The number of re-offences committed in a one-year follow-up period which were proven through receipt of a court conviction, caution, reprimand or warning during the follow-up or in a further six month waiting period. The one-year follow-up period begins when an offender leaves custody, starts their court sentence, or from receipt of their caution.

#### **Index date**

The date from which proven re-offences are measured. This is defined as the date of prison discharge for custodial sentences, the date of court conviction for non-custodial sentences, the date of receipt for a caution, reprimand or final warning or the date of a positive drug test.

#### **Index offence**

The offence of which an individual has been convicted, which leads to a sentence and an index date.

#### **Matched control group**

The matched control group contains all individuals who have available re-offence records, who are eligible for analysis, who did not receive the treatment intervention and who could be matched to at least one member of the matched treatment group.

#### **Matched treatment group**

The matched treatment group contains all individuals who have available re-offence records, who are eligible for analysis, who received the treatment intervention and who could be matched to at least one member of the matched control group.

**One-year proven re-offending rate**

The proportion of offenders in a cohort who commit an offence in a one-year follow-up period, where the offence was proven through receipt of a court conviction, caution, reprimand or warning during the one-year follow-up or in a further six month waiting period.

**p-value**

A value, between 0 and 1, that indicates the likelihood that a real difference in re-offending between the treatment and control groups has been observed. A p-value that is less than, or equal to, 0.05 is a significant piece of evidence in support of the idea that the treatment intervention is effective in changing re-offending behaviour – provided the two groups are well matched. Statistical significance testing is described on page 8 of this report.

**Re-offence**

An offence committed following conviction of the index offence which was proven through receipt of a court conviction, caution, reprimand or warning. The first re-offence refers to the first offence committed after conviction for the index offence.

**Severity**

The Ministry of Justice and the Home Office have developed a severity classification system to identify three tiers of offences, with tier 1 offences being the most serious and tier 3 offences being the least serious. Annex A of the 'Measurements and definitions' document, which accompanies proven re-offending quarterly statistics, gives the latest classification for tier 1 and tier 2 offences – please see the following link:

[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/368435/proven-reoffending-definitions-measurement-oct13.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/368435/proven-reoffending-definitions-measurement-oct13.pdf)

**Standardised difference**

The standardised differences shown in Annex B measure the differences between the treatment and control groups in terms of the variation within each group. Each standardised difference represents the quality of the matching between the two groups for a single variable, with a smaller difference representing a better match.

**Time to re-offending**

Time to re-offending is defined as the average number of days between the index date and the date of the first re-offence within a one-year follow-up period. This measure is only calculated for individuals who re-offended during the one-year follow-up period.

**Treatment intervention**

The programme whose impact on re-offending is being analysed.

**True mean**

The true mean for a re-offending measure is the mean value that would be obtained from many repeat analyses. It is the 'real value' of the re-offending measure for large populations of people with the characteristics of the matched treatment and control groups. The measured value for a re-offending measure is the best available estimate of the true mean.

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