

## Summary

This analysis assessed the impact on re-offending of a support service run by Foundation. The one year proven re-offending rate<sup>1</sup> for 257 offenders who received the support service run by Foundation was 33%, compared with 35% for a matched control group of similar offenders. Statistical significance testing has shown that this difference is not significant<sup>2</sup>; suggesting that at this stage there is insufficient evidence to draw a conclusion about the impact of the support service run by Foundation on re-offending. However, the results of the analysis do not mean that the support service run by Foundation failed to impact on re-offending.

**What you can say:** There is insufficient evidence at this stage to draw a conclusion about the impact of the support service run by Foundation on re-offending.

**What you cannot say:** This analysis shows that the support service run by Foundation reduced proven re-offending by 2 percentage points, or by any other amount.

## Introduction

Foundation is a charity that provides a support service for offenders, adults with drug and alcohol problems, women suffering from domestic violence, the young and the vulnerable, the homeless and people at risk of homelessness. Foundation supports offenders in the five “Every Child Matters” outcomes and provides a holistic service that includes current circumstances that facilitate criminality. This includes unemployment and other areas around social exclusion. It also includes support needs around substance abuse. Typically the work done in this sort of area is to refer the offender to a local specialist service, compliment their work and make sure that the offender maintains their accommodation to provide a stable base to engage with treatment.

Foundation works with offenders whilst on probation and the service can continue during and after the supervision. Some offenders that Foundation works with may not receive support until their supervision has finished and some may never receive either a prison sentence or supervision but deemed 'at risk of offending'. This

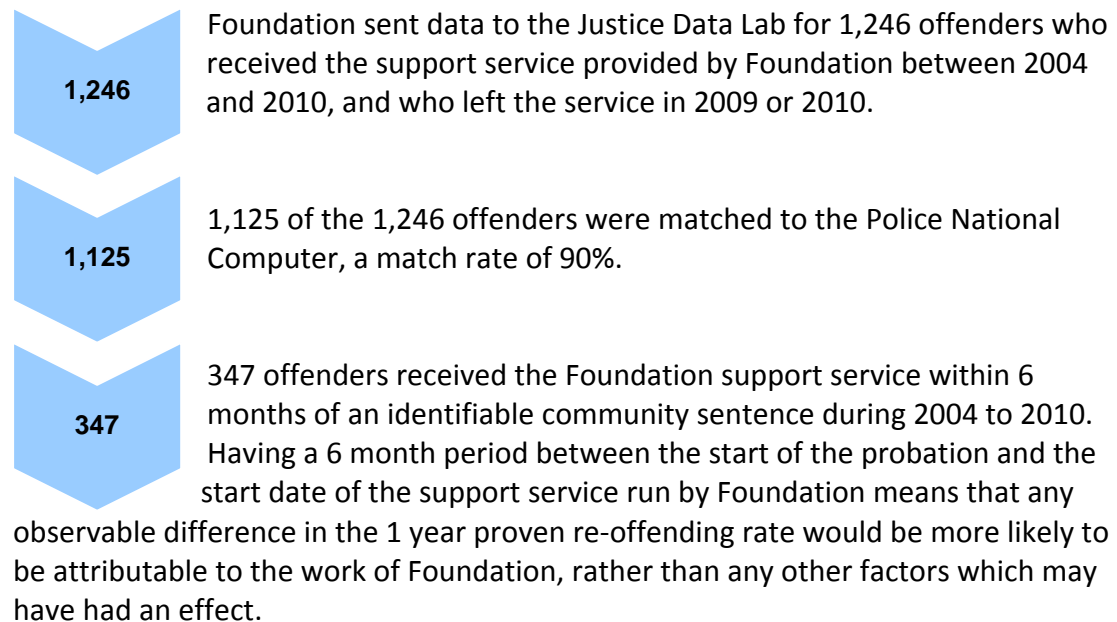
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<sup>1</sup> The **one year proven re-offending rate** is defined as the proportion of offenders in a cohort who commit an offence in a one year follow-up period which was proven through receipt of a court conviction, caution, reprimand or warning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

<sup>2</sup> The difference was non-significant,  $p = 0.56$ . Statistical significance testing is described on page 6 of this report.

analysis relates to offenders who received the support service from Foundation in the North of England between 2004 and 2010, and who left the service in 2009 or 2010.

## Processing the Data



Analysis of the unmatched data revealed the following:

- Some were individuals who did not have a Community Order or Suspended Sentence Order as the most recent proven offence before receiving the support service from Foundation; this could include persons who received a caution, fine, absolute discharge, conditional discharge, positive drug test, prison sentence or youth sentence (491 individuals across all different sentence types, 251 of these individuals received the support service from Foundation within 6 months of receiving a sentence). It would be possible for an additional analysis of the effectiveness of the Foundation Service for these sentence types. In particular, we would recommend that this analysis is additionally carried out for persons receiving the service after leaving custody.
- There were 78 individuals who had a Community Order or Suspended Sentence Order as the most recent proven offence before receiving the support service from Foundation, but who were not included in the analysis. 69 of these individuals did not start receiving the support service from Foundation until at least 6 months after the start of a Community Order or Suspended Sentence Order. 9 individuals could not be included in the analysis as their index offence appeared to be of a sexual nature.
- Relevant sentences could not be found on the administrative datasets for 209 individuals.



257

90 persons were removed because they had committed a re-offence before the support service provided by Foundation commenced.

## Creating a Matched Control Group



257

All of the 257 offender records for which re-offending data was available could be matched to offenders with similar characteristics but who did not receive the support service run by Foundation. In total the matched control group consisted of 33,111 offender records.

As this analysis pertains to an intervention which happened whilst on probation, an additional check was imposed on the control group to ensure that the matched individuals had similar characteristics to the Foundation group. All members of the matched control group could not have committed a proven re-offence before the intervention start date for the matched Foundation counterparts. Any matches where the control group had committed a proven re-offence prior to the start date of the Foundation counter part were excluded from the analysis. This check ensured that we have greater confidence that the matched control group presents a more accurate counterfactual for comparison.

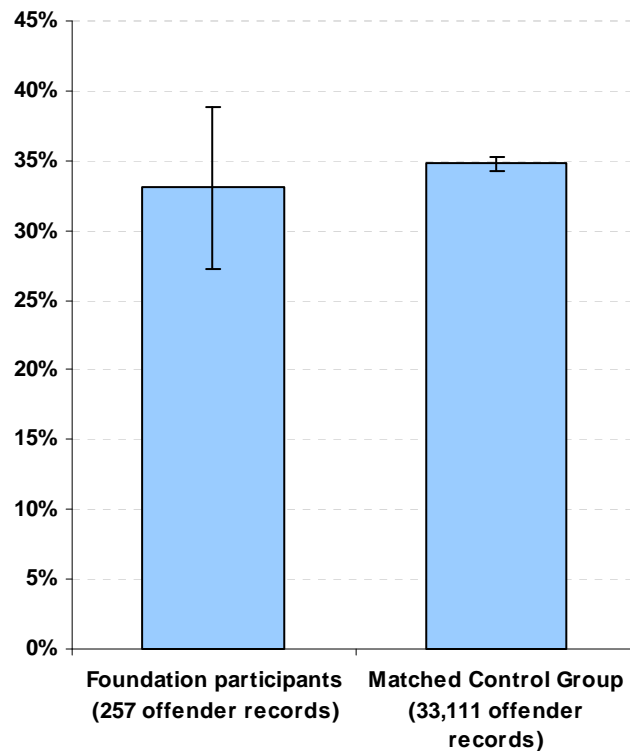
The Annex provides information on the similarity between the treatment and control groups. Further data on the matching process is available upon request.

## Results

The one year proven re-offending rate for 257 offenders who received the support service run by Foundation was 33%. This compares to 35% for a matched control group of similar offenders. This information is displayed in Figure 1 on the next page.

Figure 1 on the next page presents the 95 per cent confidence intervals for the re-offending rates of both groups, i.e. the range in which we can be 95 per cent sure that the true re-offending rate for the groups lie. For this analysis we can be confident that the true difference in re-offending between two groups is between 5 and -8 percentage points. However, because this difference crosses 0, we cannot be sure either way that receiving the support service run by Foundation led to a reduction or an increase in re-offending and thus cannot draw a firm conclusion about its impact. It is important to show confidence intervals because both the treatment and matched control groups are samples of larger populations; the re-offending rate is therefore an estimate for each population based on a sample, rather than the actual rate.

Figure 1: The best estimates for the one year proven re-offending rate for offenders who received the support service run by Foundation



The precision of this estimate could be improved if the size of the offender group used in the analysis was increased. It is recommended that the analysis is repeated on a larger sample for people receiving support from Foundation during community sentences, including previous years of information, and when additional years of data become available.

We would also recommend that the analysis is additionally carried out on individuals who received support from Foundation within 6 months of release from custody. There are a significant number of prison leavers in the unmatched group, with the vast majority of these offenders having prison sentences that lasted between 12 months and 4 years. Foundation primarily target persons on community sentences, so looking at outcomes for other sentence types, including release from custody, would be beneficial.

### **Additional proven re-offending measures**

#### **Frequency of re-offending**

The frequency of one year proven re-offending for 257 offenders who received the support service run by Foundation was 0.95 offences per individual, compared with

1.11 per individual in the matched control group. Statistical significance testing has shown that this difference in the re-offending rates is not statistically significant<sup>3</sup>.

This result is in line with the findings around the indicator of one year proven re-offending; the subject of this report. The same caveats and limitations apply to these findings, which are described below.

### **Caveats and Limitations**

The statistical methods used in this analysis are based on data collected for administrative purposes. In this instance, it would have been particularly beneficial to be able to take account of accommodation issues or homelessness status for both the group that Foundation worked with, and the matched control group. This information is currently not available routinely to the Justice Data Lab. Whilst the success of the matching described in the Annex suggests that the individuals were well matched to the control group on key characteristics such as demographic and criminal history, individuals with homelessness or accommodation problems are known to have particular difficulties in breaking the cycle of re-offending. As this key information is missing from the underlying data used, the results of this analysis should be interpreted with particular care.

It is also possible that there are additional underlying characteristics about the individuals included in the analysis which were not captured by the data, for example attendance on other interventions targeted at offenders, that may have impacted re-offending behaviour.

Many organisations that work with offenders will look to target specific needs of individuals; for example improving housing, or employability. However, how the organisations select those individuals to work with could lead to selection bias, which can impact on the direction of the results. For example; individuals may 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 for these persons we would generally expect a better re-offending outcome as they are more motivated. Alternatively, some organisations might specifically target persons 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 for these persons we would generally expect a poorer re-offending outcome as they are not motivated. However, 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 accounted for in analyses.

Furthermore, only 257 of the 1,246 offenders originally shared with the MoJ were in the final treatment group. The section “Processing the Data” outlines key steps taken

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<sup>3</sup> The difference was non-significant,  $p = 0.17$ . Statistical significance testing is described on page 6 of this report.

to obtain the final group used in the analysis. In many analyses, the creation of matched control group will mean that some individuals, who will usually have particular characteristics – for example a particular ethnicity, or have committed 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 received the support service run by Foundation. 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 to the national average, nor 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 persons who received the support service run by Foundation, and could be matched. 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 any differences in the observed re-offending rates are due to chance, or if the intervention is likely to have led to a real change in behaviour. The outcome of the statistical testing is a value between 0 and 1, called a 'p-value', indicating the certainty that a real difference in re-offending between the two groups has been observed. A value closer to 0 indicates that the difference in the observed re-offending rates is not merely due to chance. For example, a p-value of 0.01 suggests there is only a 1 per cent likelihood that any observed difference in re-offending has been caused by chance.

For the purposes of the analysis presented in this report, we have taken a p-value of up to 0.05 as indicative of a real difference in re-offending rates between the treatment and control groups.

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, this indicates that there is a real difference between the re-offending rates.

## Annex

**Table 1: Characteristics of offenders in the treatment and control groups**

	Treatment Group	Matched Control Group	Standardised Difference
<b>Number in group</b>	<b>257</b>	<b>33,111</b>	
<b>Ethnicity</b>			
White	96%	96%	-2
Black	2%	2%	-1
Asian	2%	1%	4
<b>Nationality</b>			
UK Citizen	97%	97%	-1
Foreign National	2%	1%	1
Unknown Nationality	2%	1%	1
<b>Gender</b>			
Proportion that were male	80%	81%	-1
<b>Age</b>			
Mean age at Index Offence	30	30	-3
Mean age at first contact with CJS	17	17	-3
<b>Index Offence<sup>1</sup></b>			
Violent offences including robbery	37%	39%	-3
Burglary	7%	7%	1
Theft and handling	28%	25%	5
Motoring offences, including theft of and from Vehicles	9%	10%	-3
Criminal damage	8%	7%	2
Drugs	7%	7%	1
Other	5%	5%	-3
<b>Criminal History<sup>2</sup></b>			
Mean Copas Rate	-0.60	-0.64	5
Mean total previous offences	35	33	7
Mean previous criminal convictions	14	14	3
Mean previous custodial sentences	4	4	6
Mean previous court orders	4	5	-2
<b>Employment and Benefit History</b>			
In P45 employment (year prior to conviction)	34%	32%	3
In P45 employment (month prior to conviction)	14%	15%	0
Claiming Out of Work Benefits (year prior to conviction) <sup>3</sup>	88%	89%	-1
Claiming Job Seekers Allowance (year prior to conviction)	57%	59%	-4
Claiming Incapacity Benefit (year prior to conviction)	42%	42%	-1
Claiming Income Support (year prior to conviction)	34%	34%	0
<b>Notes:</b>			
1 Index Offence is based on OGRS categories. Further details on make-up of categories available upon request.			
2 All excluding Penalty Notices for Disorder. All prior to Index Offence.			
3 Out of Work Benefits include people on Jobseeker's Allowance (JSA), Employment and Support Allowance (ESA), Incapacity Benefits (IB) and Income Support (IS) but it does not count people whose primary benefit is Carer's Allowance (CA).			
All figures (except mean copas rate) are rounded to the nearest whole number, this may mean that percentages do not sum to 100%.			

<b>Standardised Difference Key</b>
<b>Green - the two groups were well matched on this variable (-5% to 5%)</b>
<b>Amber - the two groups were reasonably matched on this variable (6% to 10% or -6% to -10%)</b>
<b>Red - the two groups were poorly matched on this variable (greater than 10% or less than -10%)</b>

Table 1 on the previous page shows that the two groups were well matched on all but two of the variables found to have associations with receiving treatment and/or re-offending. Nearly all of the standardised mean differences are highlighted green because they were between -5% and 5%, indicating close matches on these characteristics. The variables 'mean total previous offences' and 'mean previous custodial sentences' are not as well balanced in the treatment and control groups in this instance, but overall the groups were still well balanced on the vast majority of characteristics meaning that this is still a robust comparison.



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