Ministry of Justice

Summary

This analysis assessed the impact on re-offending of receiving a supported housing service that was provided by Roundabout to young offenders in the Criminal Justice System. The one year proven re-offending rate[1] for 30 offenders who received a supported housing service provided by Roundabout was 47%, compared with 60% for a matched control group of similar offenders. Statistical significance testing has shown that this difference is not significant[2]; suggesting that at this stage there is insufficient evidence to draw a conclusion about the impact of receiving a supported housing service provided by Roundabout on re-offending. However, the results of the analysis do not mean that the supported housing service provided by Roundabout 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 receiving a supported housing service provided by Roundabout on re-offending.

What you cannot say: This analysis shows that the supported housing service provided by Roundabout decreased proven re-offending by 13 percentage points, or by any other amount.

Introduction

Roundabout is a local, youth housing charity based in Sheffield that provides accommodation, support and life skills to young people. One area of support that Roundabout carries out is with young offenders within the Criminal Justice System. Supported housing is provided for young offenders who are homeless on release from custody, who need an address to secure an early release from custody, or who could be offered an alternative sentence through the provision of suitable accommodation provided by Roundabout. Individuals are referred to Roundabout through the Youth Justice Service and, after being assessed for risk and support need, are placed in supported accommodation and provided with appropriate support to develop independent living skills. Roundabout aims to reduce re-offending by helping break the cycle of homelessness, enabling individuals to
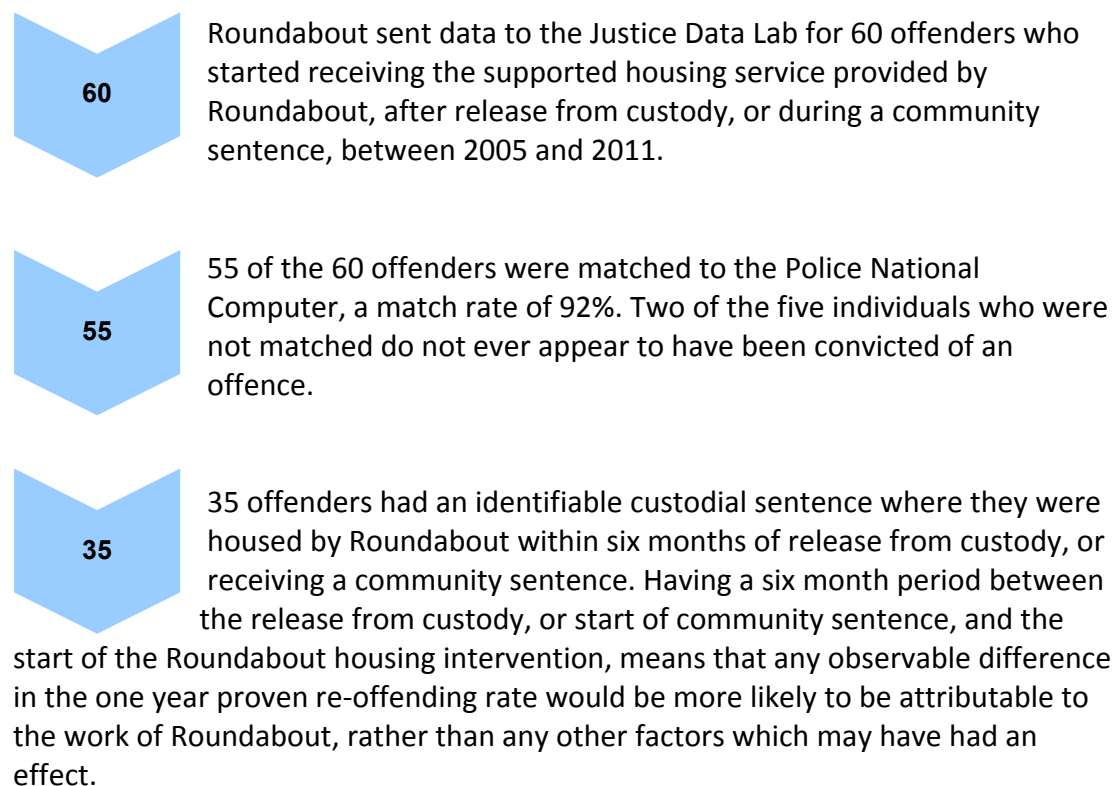
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[1] The **one year proven re-offending rate** is defined as the proportion of offenders in a cohort who commit an offence in a one year follow-up period which was proven through receipt of a court conviction, caution, reprimand or warning during the 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.

[2] The difference was non-significant, p = 0.16. Statistical significance testing is described on page 6 of this report.

address other issues related to offending. The support that Roundabout provides helps individuals develop skills that will allow them to access employment, education and training, and become a fully engaging member of society, with the hope of encouraging desistance from crime. The average time Roundabout will work with an individual is around nine months, after this time they are then supported to find their own property.

This analysis refers to those young offenders that started receiving the supported housing service after release from custody, or during a community sentence, between 2005 and 2011.

Processing the Data

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Roundabout sent data to the Justice Data Lab for 60 offenders who started receiving the supported housing service provided by Roundabout, after release from custody, or during a community sentence, between 2005 and 2011.

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55 of the 60 offenders were matched to the Police National Computer, a match rate of 92%. Two of the five individuals who were not matched do not ever appear to have been convicted of an offence.

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35 offenders had an identifiable custodial sentence where they were housed by Roundabout within six months of release from custody, or receiving a community sentence. Having a six month period between the release from custody, or start of community sentence, and the start of the Roundabout housing intervention, means that any observable difference in the one year proven re-offending rate would be more likely to be attributable to the work of Roundabout, rather than any other factors which may have had an effect.

Analysis of the unmatched data revealed the following:

- There were 11 individuals for which their intervention start date fell outside of the 6 months range described above.
- There were 2 individuals that could not be included in the analysis as they had a previous sexual offence, or their index offence appeared to be of a sexual nature.
- There were 2 individuals that were not included in the analysis as they had received several sentences within a short time period, and it was therefore not clear which sentence was relevant for the referral to Roundabout.
- There were 2 individuals that were not included in the analysis for modelling purposes. One individual had served their sentence in either a Secure

Children's Home or Secure Training Centre, and one individual had a criminal history differing greatly from the rest of the treatment group. Both individuals were removed from the analysis as they are likely to have different characteristics given the nature of their criminal history or where they served their sentence.
- Sentences could not be found on the administrative datasets for 3 remaining individuals.
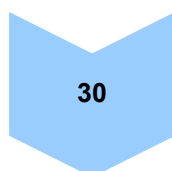
30 5 persons were removed because they had committed a re-offence before being housed by Roundabout.

Creating a Matched Control Group
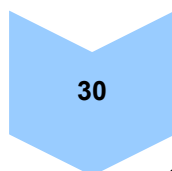
30 All of the 30 offender records for which re-offending data was available could be matched to offenders with similar characteristics, but who did not receive the supported housing service provided by Roundabout. In total the matched control group consisted of 39,220 offender records.

As this analysis refers to those that received the supported housing service provided by Roundabout after release from custody, or during a community sentence, an additional check was imposed on the control group to ensure that the matched individuals had similar characteristics. All members of the matched control group could not have committed a proven re-offence before the intervention start date for the matched Roundabout counterparts. Any matches where the control group had committed a proven re-offence prior to the start date of the Roundabout 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 30 offenders who received a supported housing service provided by Roundabout was 47%. This compares to 60% 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 the two groups is between a 33 percentage point reduction, and a 6 percentage point increase. However, because this difference crosses 0, we cannot be sure either way that receiving the supported housing service provided by Roundabout 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 supported housing service and a matched control group
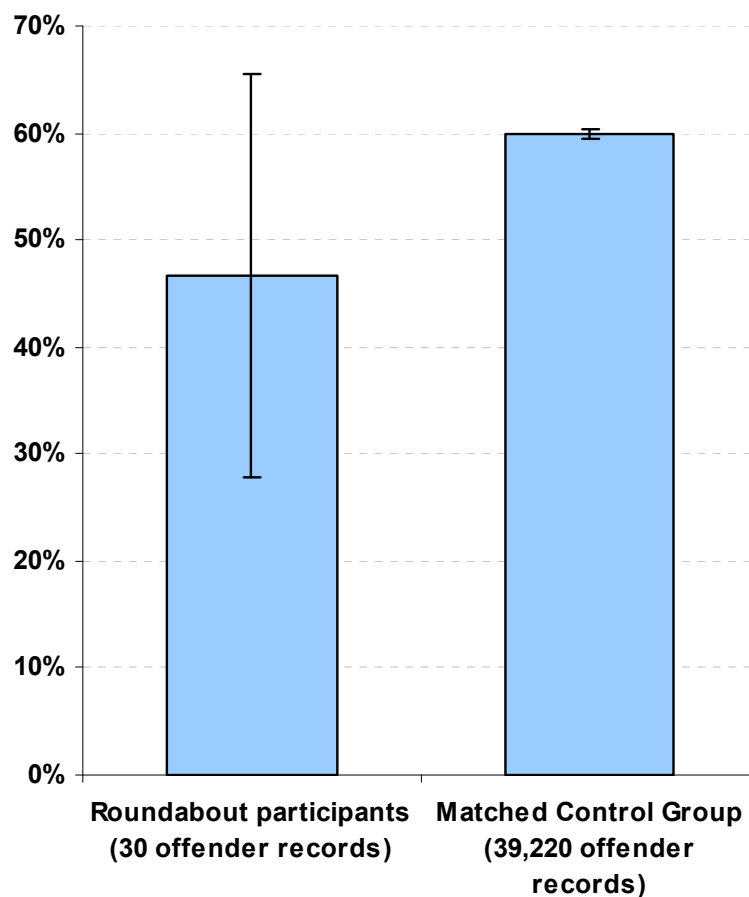
In this case the confidence intervals are particularly wide; this is to be expected when the size of the treatment group (in this case, those receiving a supported housing service provided by Roundabout) is very small. The precision of this estimate could be improved if the size of the Roundabout group used in the analysis was

increased. It is recommended that the analysis is repeated on a larger sample[3], including previous years of information, and when additional years of data become available.

Additional proven re-offending measures
Frequency of re-offending

The frequency of one year proven re-offending for 30 offenders targeted by Roundabout was 1.17 offences per individual, compared with 1.92 per individual in the matched control group. Statistical significance testing has shown that this difference in the re-offending rates is statistically significant[4].

This analysis indicates that individuals receiving a supported housing service provided by Roundabout experienced a real reduction in the frequency of re-offending. 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. While these include details of each offender's previous criminal history alongside more basic offender characteristics such as age, gender and ethnicity, it is possible that other important contextual information that may help explain the results has not been accounted for. 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.

As referrals to Roundabout are based on accommodation status, it would have been particularly helpful in this analysis to take account of accommodation status. The control group against which re-offending rates for those receiving a supported housing service provided by Roundabout have been compared with will therefore include offenders both with and without the specific needs that Roundabout are seeking to address. In addition to the needs listed it would also have been helpful for us to have taken into account employment and benefit history for both the group that Roundabout worked with, and the matched control group.

This analysis does not include those young offenders that served their sentence in a Secure Children's Home or Secure Training Centre, and therefore it is unclear whether these results would be applicable to these individuals.

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[3] For the difference of the one year proven re-offending rates to be statistically significant for this report, a minimum size of 193 individuals receiving a supported housing service provided by Roundabout would need to be in the matched treatment group.

[4] The p-value for this significance test was 0.04. Statistical significance testing is described on page 6 of this report.

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 30 of the 60 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 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 a supported housing service provided by Roundabout. 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 supported housing service provided by Roundabout, 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.

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
Number in group	**30**	**39,220**	
Ethnicity			
White	70%	74%	-8
Black and Asian	30%	26%	8
Nationality			
UK Citizen	93%	91%	7
Foreign National	7%	9%	-7
Gender			
Proportion that were male	77%	80%	-8
Age			
Mean age at Index Offence	17	17	9
Mean age at first contact with CJS	13	13	1
Index Offence[1]			
Violent offences including robbery	50%	52%	-3
Burglary	13%	17%	-10
Theft and handling	13%	13%	2
Drugs	13%	11%	9
Other[2]	10%	8%	6
Type of Sentence			
Individuals on community sentences	57%	57%	0
Individuals on custodial sentences of 12 months or less	7%	8%	-4
Individuals on custodial sentences of 12 months to 4 years	37%	36%	2
Criminal History[3]			
Mean Copas Rate	-0.61	-0.59	-4
Mean total previous offences	13	13	-2
Mean previous criminal convictions	7	7	-2
Mean previous custodial sentences	1	1	-7
Mean previous court orders	4	4	-5
Notes:			
1 Index Offence is based on OGRS categories. Further details on make-up of categories available upon request. 2 Other offences including Motoring offences (inc. theft from vehicles), and criminal or malicious damage. 3 All excluding Penalty Notices for Disorder. All prior to Index Offence.			
All figures (except mean copas rate) are rounded to the nearest whole number, this may mean that percentages do not sum to 100%.			
Standardised Difference Key			
Green - the two groups were well matched on this variable (-5% to 5%)			
Amber - the two groups were reasonably matched on this variable (6% to 10% or -6% to -10%)			
Red - the two groups were poorly matched on this variable (greater than 10% or less than -10%)			

Table 1 shows that the two groups were sufficiently matched on all variables found to have associations with receiving treatment and/or re-offending. The standardised differences are highlighted as amber (i.e. between 6% to 10% or -6% to -10%) in a number of cases, suggesting that the control group could have been slightly better matched in these cases, but were still indicative of a control group who exhibit similar characteristics.

For many of the variables which have amber rated standardised differences the average values for the variables appear to be very similar. However, the standardised differences suggest that there is a lot of variability within the matched control group, which is not equivalent in the treatment group. This is not unexpected for a small treatment group as the variation within particular characteristics can be limited, compared with a larger matched control group. This means differences between treatment and control groups may be amplified, leading to higher standardised differences even when the average values are very similar. The average values in this analysis are very similar overall, suggesting that the two groups are still matched sufficiently.

A positive standardised difference means that the average value for this variable is higher for the treatment group compared to the matched control group, and a negative standardised difference means that the average value for this variable is higher for the matched control group compared to the treatment group.

Contact Points

Press enquiries should be directed to the Ministry of Justice press office:

Tel: 020 3334 3555

Other enquiries about the analysis should be directed to:

Justice Data Lab Team
Ministry of Justice
Justice Data Lab
Justice Statistical Analytical Services
7th Floor
102 Petty France
London
SW1H 9AJ
Tel: 0203 334 4396
E-mail: Justice.DataLab@justice.gsi.gov.uk

General enquiries about the statistical work of the Ministry of Justice can be e-mailed to: statistics.enquiries@justice.gsi.gov.uk

General information about the official statistics system of the United Kingdom is available from www.statistics.gov.uk