Justice Data Lab Statistics

October 2014

9th October 2014

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Introduction

This report presents the latest findings from the Justice Data Lab, and summarises the requests for re-offending information through the Justice Data Lab for the period 2nd April 2013 to 30th September 2014.

This report has been produced and published in line with the Code of Practice for Official Statistics. This report will be updated and published on the second Thursday of each month for the duration of the Justice Data Lab pilot.

What is the Justice Data Lab initiative and how does it work?

The Justice Data Lab has been launched as a pilot from April 2013. During the pilot, a small team from Analytical Services within the Ministry of Justice (the Justice Data Lab team) is supporting organisations that provide offender services by allowing them easy access to aggregate re-offending data, specific to the group of people they have worked with. This service is intended to support organisations in understanding their effectiveness at reducing re-offending.

Participating organisations supply the Justice Data Lab with details of the offenders who they have worked with, and information about the services they have provided. The Justice Data Lab team matches these individuals to the re-offending datasets held within the Ministry of Justice and uses statistical modelling techniques to generate a matched control group of individuals with very similar characteristics. As a standard output, the Justice Data Lab supplies aggregate one year proven re-offending rates for the group of offenders the organisation has worked with, and those of the matched control group of similar offenders.

The re-offending rates for the organisation's group and the matched control group are also compared using statistical testing to assess the impact of the organisation's work on reducing re-offending. The results are then returned to the organisation with explanations of the key metrics, and any caveats and limitations necessary for interpretation of the results.

Finally, the tailored reports produced for each organisation are published on the Ministry of Justice website to promote transparency and ensure that findings produced through this service can be used by others to improve the rehabilitation of offenders.

Key Findings

To date:

This publication reports on the Justice Data Lab requests received between the launch of the Justice Data Lab service on the 2nd April 2013, and 30th September 2014. During this period there were 144 requests for re-offending information through the Justice Data Lab. Of these requests;

- 117 reports have been published previously. 1 report is being published this month.

- 17 requests could not be answered as the minimum criteria for a Data Lab analysis had not been met.

- 1 request was withdrawn by the submitting organisation.

- The remaining 8 requests will be processed in due course.

The following activity has taken place this month:

- One request has been fully answered and is being published this month as Provisional Statistics[1]. Table 1 below outlines the findings of the analysis for Lancashire Women's Centres.

- Each report will now contain an additional re-offending measure of time to re-offending. The measure will show the average time to the first re-offence within a year for both the treatment group, and the matched control group, with statistical significance testing to assess whether the difference in the time to the first re-offence is statistically significant. This information will now be included as standard for all Justice Data Lab analyses. **Feedback on this new measure of re-offending is welcomed – please see the "Contact details" section on how to get in touch with us.**

- This month, we have provided a further update of the forest plots which show the effect sizes of all analyses published to date. A forest plot is a graphical display used in meta-analysis that shows the effect size and precision (confidence intervals) against the treatment group size for multiple analyses. These forest plots were originally made

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[1] This request is being released this month as Provisional Statistics. Normally Justice Data Lab analyses are published as Official Statistics, meaning that the product complies with almost all aspects of the Code of Practise for Official Statistics, including having confidence in the underlying modelling. We are confident that the statistics being published are robust, however, in this analysis we identified potential areas for improvement in the underlying modelling, meaning that the current set of results being released could be further refined. In the report, we suggest that this analysis could be improved when information becomes available to the Justice Data Lab which will include further information on the characteristics of individuals through Offender Assessments (OASys).

available in "Justice Data Lab: the pilot year"[2] published in March 2014, and were updated last month. These forest plots can be seen in the section below, and also within the publication summary Excel file which accompanies this Word document, which will now be included as standard in each month's publication.

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[2] Available at
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/289250/justice-data-lab-pilot-year.pdf

Table 1: Request being published this month.

Organisation and Programme		Summary of Programme	Effect on the one year proven re-offending rate	Effect on the frequency of one year proven re-offending	Effect on the time to re-offending
1	Lancashire Women's Centre Mentoring Intervention (released as Provisional Statistics)	Lancashire Women's Centres offer a range of one-stop-shop services and opportunities to women in the community, including those that have an offending history. The centres aim to help support, encourage and enable women to improve their quality of life and well-being. For those women with offending histories Lancashire Women's Centres work to address the underlying causes of offending behaviour with issues being explored in both a practical and therapeutic sense. A flexible and individualised approach is taken, along with a 'What's next' ethos when helping to support the individual to journey away from offending. This analysis includes those women who were referred to Lancashire Women's Centres through several routes including probation officers, social services, community drugs team, as part of their sentence plan, or self referred to the service, and received support between 2010 and 2012.	This provisional analysis looks at the impact on the one year proven re-offending measure for 57[3] offenders who received support from Lancashire Women's Centres is currently inconclusive, where the change in the re-offending rate is between a 10 percentage point reduction and a 12 percentage point increase compared to the matched control group.	The frequency of one year proven re-offending for 57[3] offenders who received support from Lancashire Women's Centres was 0.72 offences per individual, compared with 0.42 per individual in the matched control group. Statistical significance testing has shown that this difference in the re-offending rates is not statistically significant.	The average time to the first re-offence within a year for the 11 individuals that were matched, and re-offended, after receiving the support was 153 days. This compares to 163 days for the 4,121 individuals who re-offended from the matched control group. Statistical significance testing has shown that this difference in the time to first re-offence within a year is not statistically significant.

[3] 57 individuals were matched from a cohort of 97 individuals, whose details were sent to the Justice Data Lab, as described on page 2 of the full report.

Effect sizes observed through the Justice Data Lab

In this section, we look at the re-offending outcomes that we have reported for each request, which are displayed graphically in forest plots. Forest plots were previously published in "Justice Data Lab: the pilot year"[1] in March 2014 where a more detailed description of how to interpret these plots can be found.
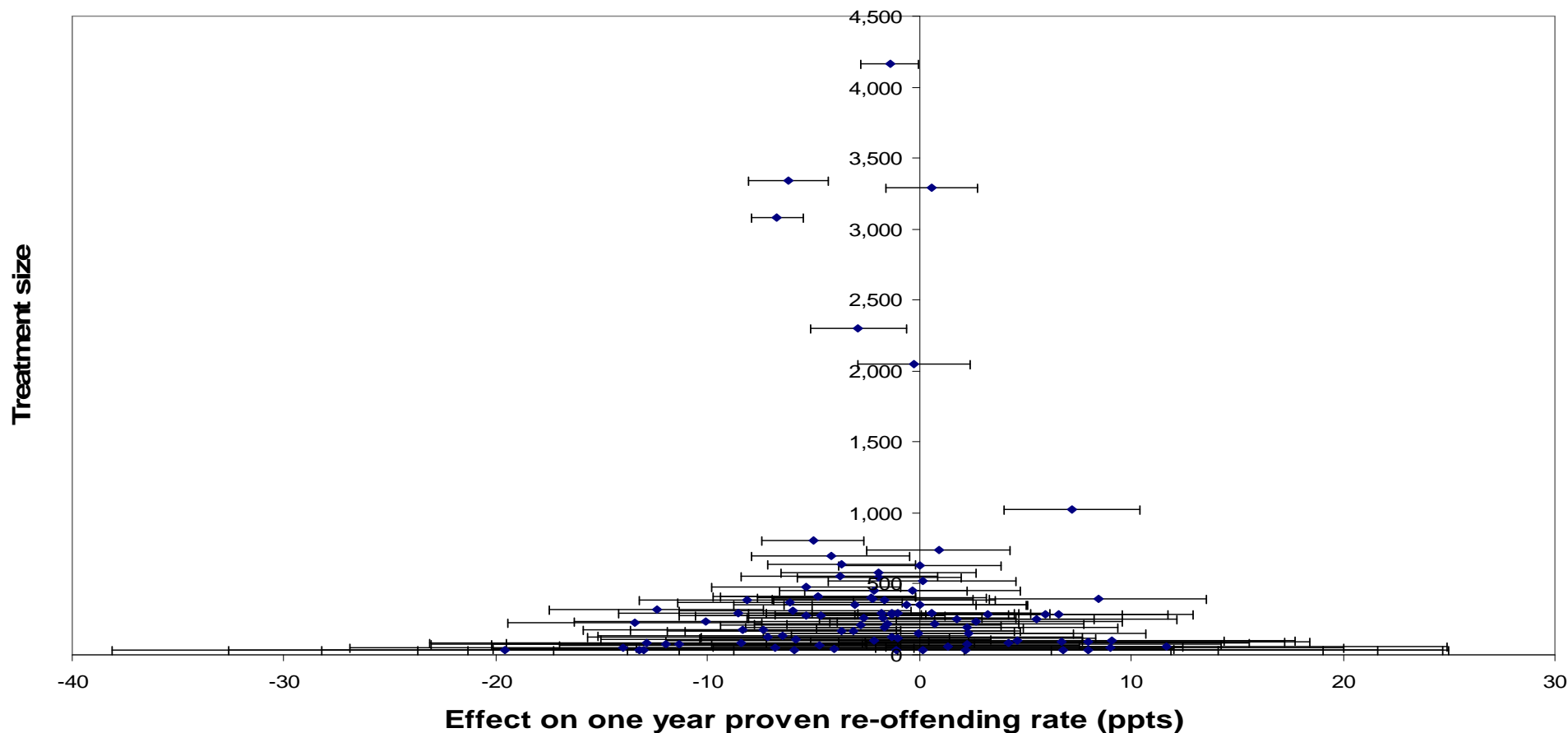
Interpreting Forest plots

The forest plots below illustrate the relationship between the size of the matched treatment group and the range (confidence interval around the estimate of impact) presented around the change in re-offending between the treatment and the matched control group. If the confidence interval crosses 0, it indicates that the request has an inconclusive result which means that at this stage we cannot be sure either way that receiving the intervention led to a reduction or increase in re-offending and thus cannot draw a firm conclusion about its impact. However, if the confidence interval does not cross 0, this indicates a statistically significant result meaning that we can be confident that there is a real difference in the re-offending rate for the matched individuals who received the intervention. Estimates of impact on the left hand side of the forest plots indicate the treatment group has a lower re-offending rate than the matched control group, whereas estimates on the right hand side of the forest plots indicate the treatment group has a higher re-offending rate than the matched control group.

The forest plots below show that generally as the treatment group size increases, the precision of the estimate of the effect size on the one year proven re-offending rate increases. We can tell the precision of the effect size increases by looking at the width of the confidence intervals, which get narrower as the size of the cohort increases in most cases. Forest plot 1 demonstrates that the majority of the final matched group sizes have been less than 500 and have therefore been presented with quite large confidence intervals. Looking at forest plot 1 we can see that over half of the requests had a confidence interval that crosses the y-axis (i.e the estimate of impact crosses 0); meaning that at this stage these requests are said to be an inconclusive result.
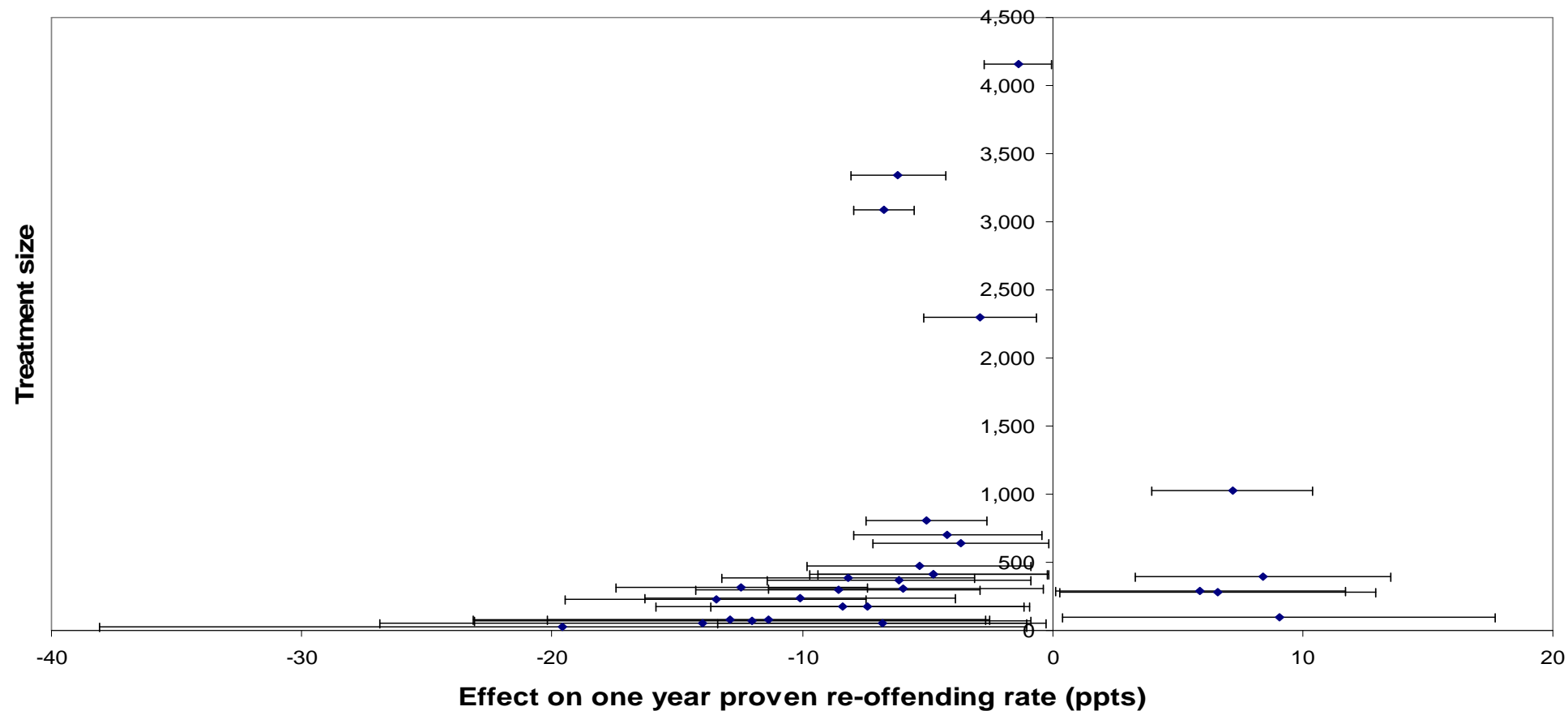
Forest plot 2 shows the same information but for 25 requests published previously, which have indicated a statistically significant reduction in re-offending and 5 requests that have indicated a statistically significant increase in re-offending. These totals for statistically significant findings are slightly different to all requests published, because we have excluded the NOMS CFO 2011 analyses where a regional control group was used. These findings were almost identical to analyses using a national control group (which are included in the forest plots), so the same information would be displayed graphically.

Forest plot 1: Effect on the one year proven re-offending rate (shown in percentage points (ppts)) against treatment size (all requests published to date)[4]. Estimates of impact on the left hand side of the forest plot indicate the treatment group has a lower re-offending rate than the matched control group, whereas estimates on the right hand side of the forest plot indicate the treatment group has a higher re-offending rate than the matched control group.

[4] This forest plot excludes the NOMS CFO 2011 analyses where a regional control group was used.

Forest plot 2: Effect on the one year proven re-offending rate (shown in percentage points (ppts)) against treatment size (all statistically significant requests published to date)[5]. Estimates of impact on the left hand side of the forest plot indicate the treatment group has a lower re-offending rate than the matched control group, whereas estimates on the right hand side of the forest plot indicate the treatment group has a higher re-offending rate than the matched control group.

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[5] This forest plot excludes the NOMS CFO 2011 analyses where a regional control group was used.

Contact points for further information

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For further guidance about the Justice Data Lab, and how to access the service, please refer to the guidance which can be found at the following link: www.justice.gov.uk/justice-data-lab

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

Tel: 020 3334 3555

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