Justice Data Lab

Incorporating Offender Assessment data to the Justice Data Lab process – Methodology

January 2016

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1.Summary

The key findings of this report are:

- Statistical testing showed that the one year proven re-offending rate gave statistically significant decreases (i.e. showed an improvement in the re-offending rate) for all three models, as it was for the original model that did not incorporate the OASys information[1].
- For those with custodial sentences when taking part in the intervention the frequency of re-offending showed statistically significant decreases.
- The incorporation of Offender Assessment System (OASys) information into a test Justice Data Lab analysis was assessed through three main models and compared to the same analyses excluding OASys information. The impact on incorporating OASys information on those with prison sentences and those on probation was also analysed.
- The quality of the matching was good for most models, meaning we can be suitably confident in how well the control group compared to the treatment group. The new OASys variables were all well or reasonably well matched with the exception of two variables in the most complex model. This shows that the inclusion of OASys variables into the modelling process was not impeded by poor matching.
- The inclusion of OASys variables showed minimal differences to the outputs for the headline re-offending measures tested compared to the original Langley House analysis. This impact did not affect the significance or the direction of the impact that the Langley House Trust intervention had on the treatment group. However, this test case shows that OASys data can be incorporated successfully into the Justice Data Lab process.
- The Justice Data Lab will operate a dual-run basis for suitable requests, providing the matched control analyses with and without OASys information including in the matching to understand the impact more fully. Whilst the outcome does not change when adding OASys data in, we now know that the more complex needs of the treatment group have been controlled for in the comparison.

2.Background

The Justice Data Lab (JDL) was launched in 2013 and aims to improve the evidence base on successful rehabilitation by enabling organisations to better assess the impact of their work on re-offending, using aggregate re-offending data provided by the JDL service.

In order to enhance the analyses provided, the use of Offender Assessment (OASys) data has been investigated to assess the impact of more focused control groups, as the OASys data provide additional information on the needs and risks of offenders across a wide spectrum of issues.

Individuals with particular problems, such as accommodation or mental health, are known to have particular difficulties in breaking the cycle of re-offending. This paper addresses both the methodology and the results of the test case allowing the Justice Data Lab to assess the impact of OASys information on the matching process and the headline re-offending metrics.

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[1] For these analyses, the treatment group contained 302 individuals of which 219 had OASys records

2.1 Offender Assessment System (OASys) information

OASys is a structured clinical risk assessment tool designed to enable a qualified individual (usually a Probation Officer) to:

- assess how likely an offender is to be re-convicted
- identify and classify offending related needs, including basic personality characteristics and behavioural problems
- assess risk of serious harm, risks to the individual and other risks
- assist with management of risk of harm
- link the assessment to the supervision or sentence plan
- indicate the need for further specialist assessments
- measure change during the period of supervision/sentence.

This assessment applies to all young adult offenders aged 18-20, adult offenders serving custodial sentences of over 12 months and to offenders serving sentences of less than 12 months where there is a probation service assessment completed.

The OASys questionnaire is structured into 13 sections that deal with specific issues, for example accommodation focused questions, drug misuse, alcohol misuse, and thinking and behaviour questions amongst others. This information can enhance analyses for interventions related to such issues as the matching within the JDL processes will be able to take this information into account, which had previously been unobserved, to provide more extensive analyses.

In some cases there can be multiple OASys records for an individual sentence. It is necessary to select the most suitable OASys record per sentence. This is discussed further in section 3.2.

2.2 Test case: Langley House Trust

This test case is based on a previous report for the Langley House Trust[2], which was deemed appropriate due to the nature of the services they provide, offenders that they deal with and agreement on the re-use of information previously provided.

Langley House Trust is a national charity that provides accommodation-based and floating support to offenders over the age of 18. Their mission is to work with those who are at risk of offending or have offended, establishing positive foundations so that they can lead crime-free lives and become contributors to society.

Langley House Trust works with offenders in the community (both those who are subject to statutory intervention and those who are not) and in close partnership with local agencies to deliver end to end and holistic support covering the NOMS seven pathways to reducing re-offending. The services include training and education, support with substance misuse issues, learning disabilities support, mental health and personality disorders support, one to one key working, support to enable independence

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[2] www.gov.uk/government/uploads/system/uploads/attachment_data/file/385561/langley-house-trust-report.pdf

(such as tenancy maintenance and budgeting), support to improve health and wellbeing, and support to build positive relationships and reintegrate into society.

Individuals are referred to these services through criminal justice agencies, probation and prison and by self-referrals or referrals through friends and families. Langley House Trust works with a large number of hard to place offender groups including those with substance misuse needs, mental health needs, housing needs, multiple complex needs and those with a wide spectrum of risk (including high risk of harm and high risk of re-offending).

3.Methodology Process

3.1 Three Run Approach

The Langley House Trust intervention is primarily focused on accommodation needs. However, there are other aspects to the intervention which target people with various issues such as substance misuse, mental health difficulties, multiple complex needs and those with a wide spectrum of risk (including high risk of harm and high risk of re-offending). In order to fully understand the impact of selecting relevant OASys data items in relation to such needs, three variations of the analysis that build upon each other were considered[3]:

1) Basic model: This would look at minimal OASys information relating to accommodation issues, the focus of the Langley House Trust. This includes data on risks of serious harm related to accommodation and offending behaviours related to accommodation. There will also be Prison/Probation basic models: The Langley House treatment group would be split between those with prison sentences and those on probation (offenders who received community orders or suspended sentences) to assess any differences between the results.
2) Intermediate model: Builds on the basic model but adds additional information related to accommodation issues as well as including data on drugs/alcohol misuse issues.
3) Complex model: Builds on the intermediate with additional variables relating to mental health issues.

For each OASys data item, the responses are generally either yes/no or 'no problems'/'some problems'/'significant problems', for example. The OASys system is not mandatory and often offenders either may not have an assessment or may not have a complete assessment if one is given. As such, some offenders may have a 'null' response for some questions whilst having information on others, whilst OASys variables will not be applicable for those who did not have a questionnaire. As per the established JDL procedure, variables are separated out into binary categories to find the most appropriate model to find a matched control group.

3.2 Matching OASys Data

Building on the original treatment group of 302 individuals supported by Langley House Trust[4], the most appropriate OASys record needed to be identified. To do this, the OASys records that were

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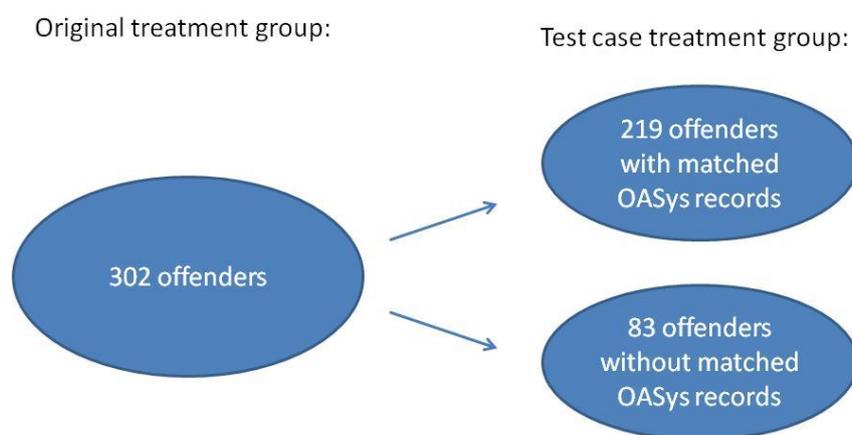[3] A full list of the variables included in each model is provided in Annex A

[4] More information on the treatment group can be found in the original report
www.gov.uk/government/uploads/system/uploads/attachment_data/file/385561/langley-house-trust-report.pdf

completed before the intervention start date and within 180 days of a conviction date were selected. This was to allow an adequate time frame for OASys information to be collected about the individual before they began the intervention in question. As OASys records can contain missing categories and null entries, the number of 'nulls' for each OASys question was assessed to select the 'best' OASys record (i.e. the record with the least null entries). This approach narrowed down the number of OASys records although there were still duplicates for some individuals. The closest OASys record to the conviction date was selected and this returned 219 records for 219 individuals.

The remaining 83 individuals from the original treatment group had no OASys records and remain in the treatment group so that a direct comparison could be performed with the original analysis. Please see 'Additional OASys matching' (section 3.6) for more information.

Test Case Treatment Group:

3.3 Establishing the Control Group

The next step is to construct control groups for each model based on similar characteristics of the treatment group. As per the treatment group, the control group should contain both individuals with OASys records and without OASys records ('non-OASys'), which will be similar in characteristics to the treatment group. OASys records within 30 days of the conviction date for offenders in the control group were selected - this differs to the 180 days for the treatment group to reduce the number of duplicate entries as offenders can complete numerous OASys assessments during one sentence. The 'best' OASys record was then selected as done for the treatment group. Some duplicate records remained as some individuals completed more than one OASys on the same day. Due to the low proportion of such cases, the first assessment was taken forward[5]. These duplicates had the exact same reoffending information so this would not have affected the reoffending outcomes but there were some difference in the recorded responses to some of the OASys questions, which is discussed further in the conclusions.

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[5] The basic model had 550 such duplicates, the intermediate model had 1556 and the complex model had1927 duplicates from a total control group of 651,741 records.

Offenders without an OASys record are included in the control group, to reflect the OASys/non-OASys split in the treatment group, further information can be found in the additional OASys matching section. The final control group was made up of 651,741 records.

3.4 PSM model

Propensity score matching (PSM – also referred to as matching) is used to find offenders from the control group who are similar to those treated by the intervention in terms of their personal and offence characteristics. The standard Justice Data Lab methodology[6] was followed, with OASys information incorporated as described previously.

A series of variables representing a range of offender and offence characteristics were tested for inclusion in the models, which is standard in Justice Data Lab requests, along with the inclusion of OASys variables considered for each model. In order to be included in the model, variables will generally need to be related to either the likelihood of receiving treatment or of re-offending[7]. In the basic model, OASys variables were brought back into the model when they were not significant. For the intermediate and complex model this was not the case and once an OASys variable was excluded it was not brought back into the final model. The matching qualities of these variables were assessed when looking at the outputs to make sure they were well matched.

3.5 Modelling issue

For some variables it was necessary to merge some categories due to low numbers as per standard JDL procedures – these categories are clarified in the Annex.

In order to construct the most appropriate model, a reference category is taken for each variable considered. When testing each model there was a problem relating to the reference category for each OASys variable. For example, for the question 'Do you currently use drugs?' this would have been split into 4 possible responses:

1. Yes (i.e. the offender uses drugs)
2. No (The offender doesn't use drugs)
3. Null (The offender has an OASys record but this question has no response)
4. NA (The offender has no OASys record)

The NA response was used as the reference category but it transpired that p values and standard errors were only produced for the first 2 responses (yes and no), meaning that the null response was essentially being ignored in the modelling process. This was because the 'NA' variable is the same for

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[6] www.gov.uk/government/uploads/system/uploads/attachment_data/file/392929/justice-data-lab-methodology.pdf

[7] On the whole, variables included in the model will have probability (p) values of less than 0.2 either relating to receiving treatment or re-offending. This means that the outcome observed in the data would be less than 20% likely to occur if there is genuinely no relationship between the variable and receiving treatment or re-offending. There may occasionally be exceptions where the variable does not have a p value of less than 0.2 but where it makes a statistically significant contribution to the goodness-of-fit of the model. The level of significance of 0.2 is consistent with the academic literature (e.g. Apel & Sweeten, 2010; Hahs-Vaughn & Onwuegbuzie, 2006; Rosenbaum, 2002) and previous Ministry of Justice research (Ministry of Justice, 2012).

all OASys variables for the same offender and that the 'NA' category was only needed once rather than for each OASys variable. For this reason the 'null' category was used as the reference value.

3.6 Additional OASys Matching

The matching of individuals between the treatment and control groups was based on the propensity scores, which reflect the likelihood that an offender received the provider's intervention given various recorded characteristics related to previous offending and OASys. An additional rule introduced with incorporating OASys information was that only individuals in the treatment group who had an OASys record were matched to those who had an OASys record in the control group. Similarly, those individuals in the treatment group who did not have an OASys record were only matched to those who had not have an OASys record in the control group. Once a matched control group had been constructed, it was necessary to assess whether the control group was similar to the treatment group on relevant OASys and important offender and offence characteristics. If the groups were well matched then re-offending for the control group and treatment group can be compared – this is addressed in the results.

4. Profile of test case treatment group

The 219 individuals in the treatment group with OASys records can be assessed in further detail to determine the types of needs and problems relevant to this group (as determined by their OASys records).

Figure 1: Established needs (for treatment group offenders with OASys record)
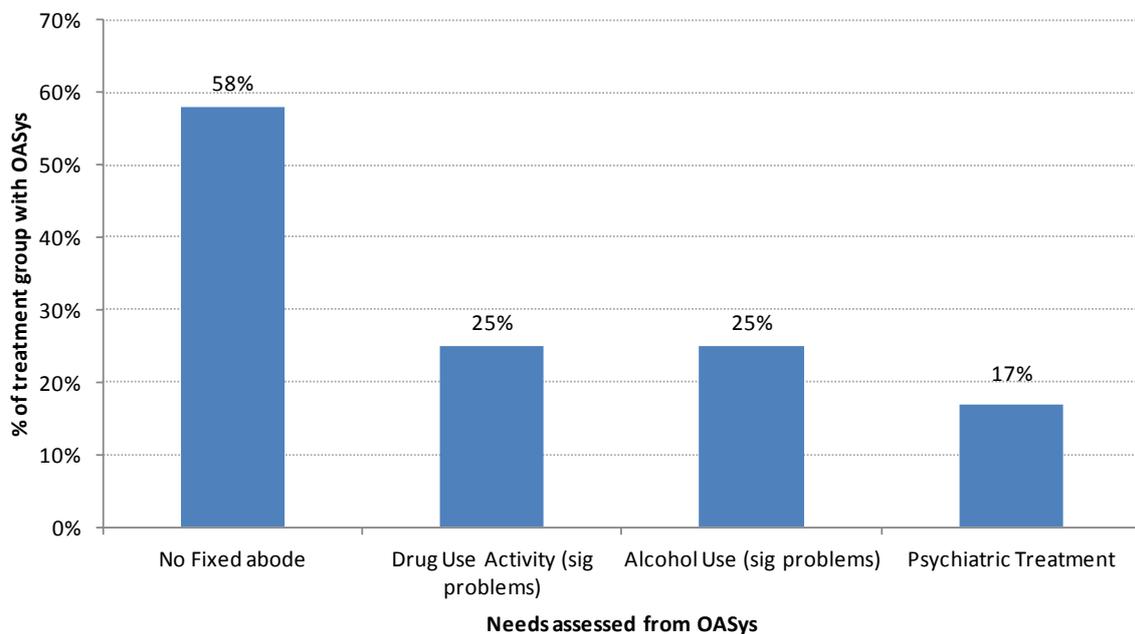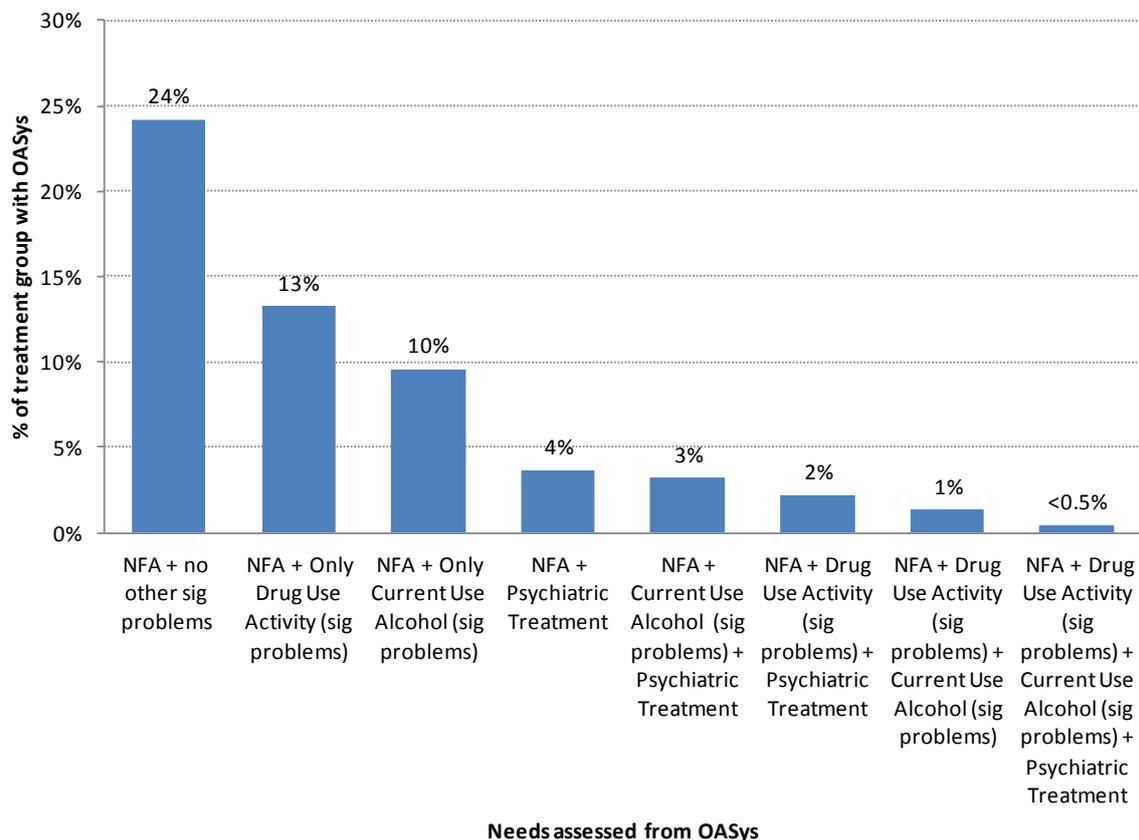

Figure 1 show quite a high proportion having accommodation needs as they had no fixed abode – this is not surprising as Langley House's service primarily focuses on accommodation needs. As this refers only to needs identified by OASys information collected, this does not necessarily mean that the remainder of the treatment group do not have accommodation issues (the purpose of the test case

intervention). The proportions with significant problems with alcohol and drug use are equal, with a quarter of the group having such issues respectively. There are also around a fifth of the treatment group who were receiving psychiatric treatment at the time of their OASys questionnaire, demonstrating Langley House deal with those with needs focusing on substance misuse and mental health issues.

Figure 2: Individuals with combined needs (for treatment group offenders with OASys record)[8]

Looking at the 58% of the treatment group with no fixed abode identified, Figure 2 shows that there are some individuals with combined needs, across drug, alcohol and mental health issues. Almost a quarter of the treatment group with OASys records have no fixed abode with no other significant problems in any of the identified needs. Those including significant problems in drug use activity make up the next largest of these groups (13%). There are individuals with multiple needs across all categories though these become a small minority (less than 0.5%) when all issues are combined. This indicates that most individuals in the Langley House treatment group have one or two issues rather than multiple needs.

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[8] NFA is no fixed abode

Figure 3: Comparison between current and previous substance misuse

Figure 3 compares the percentages currently injecting drugs and current significant problems with alcohol and those who previously had these problems. 43% did not inject drugs and had no problems with alcohol at the time of their OASys assessment with 3% having significant problems with these. 37% had not previously injected drugs and had no previous problems with alcohol misuse at the time of their OASys assessment, compared to 6% having previous significant problems with these issues. Whilst the proportions with such problems are low, it indicates that individuals in the Langley House treatment group with OASys records may represent those who have had more problems in the past with substance misuse rather than at the time of their OASys assessment.

5.Results

This section compares the outputs from the basic model (including the prison/probation split analyses) with the output from the original JDL analysis from the published report and then builds up through the different runs to assess any significance changes when aggregating the layers of the various OASys information. This will allow comparison between the models and with the original analysis so a full assessment can be made if results are different. Matching quality is also assessed to make sure that the treatment and control groups can be suitably compared.

5.1 One year re-offending rate

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

| Model Type | Matched Treatment Group | Matched Control Group | 1 year proven reoffending rate | | | | |
			Treatment Group (%)	Control Group (%)	Significant Difference	Estimate of Impact On Reoffending	P value
Original	231	528,622	26	35	Y	-14 to -2% pts	0.005
Basic	230	399,376	27	34	Y	-14 to -2% pts	0.008
Intermediate	229	306,829	27	35	Y	-14 to -3% pts	0.004
Complex	227	288,600	27	35	Y	-14 to -2% pts	0.007

The one year re-offending rates are broadly similar with minor differences, most likely due to the small changes in the matched treatment groups. The results are all statistically significant (consistent with the original result), with the intermediate model (accommodation, drugs and alcohol variables combined) giving the lowest p-value but the general trend is similar across all models.

Figure 4: The best estimates for the one year proven re-offending rate for the Langley House Trust treatment group and matched national control groups
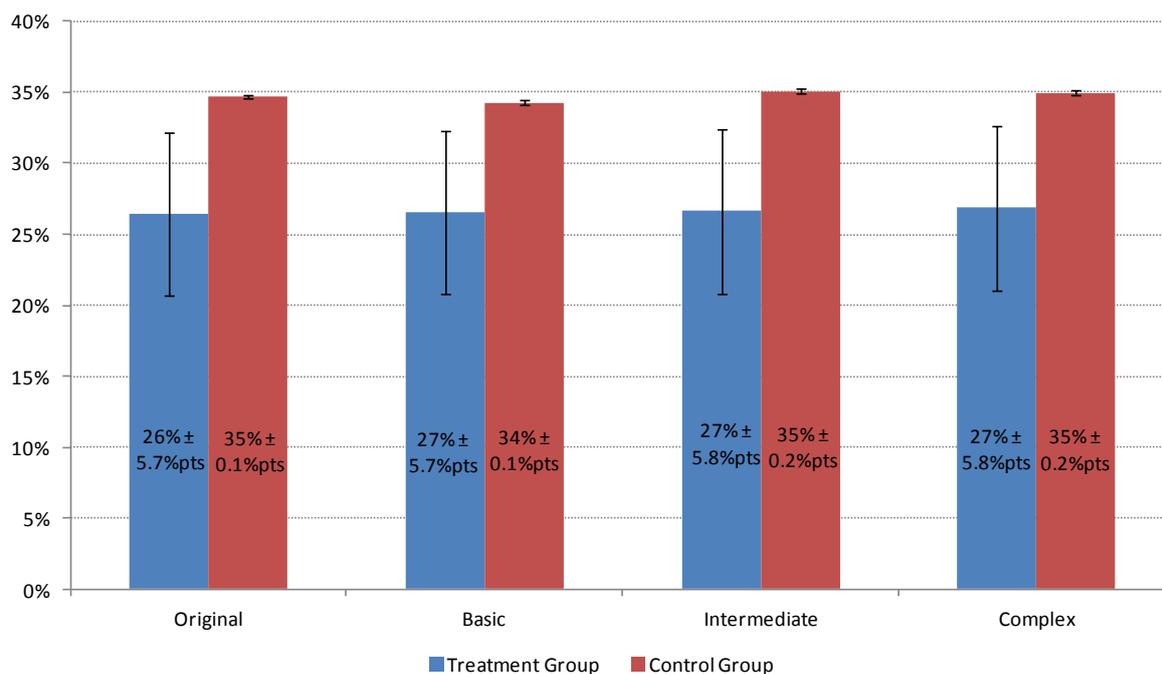
Figure 4 shows the 95 per cent confidence intervals for the re-offending rates of both groups, i.e. the range in which we can be 95 per cent sure that the true re-offending rate for the groups lie. For the analyses we can be confident that the true difference in re-offending between the treatment and control groups is

- A reduction between 3 and 14 percentage points in the one year re-offending rate for the intermediate model.
- A reduction between 2 and 14 percentage points in the one year re-offending rate for the original, basic and complex model.

The fact that the intervals don't overlap indicates that the differences between the treatment and control groups are significant. 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.

The precision of these estimates could be improved if the sizes of the Langley House Trust treatment group used in these analyses were increased.

The impact on the models by adding OASys variables is almost negligible, showing that adding OASys variables into this test case did not alter the result for the one year re-offending rate.

Table 2: One year re-offending rates and p-values for prison/probation split models

Model Type	Matched Treatment Group	Matched Control Group	1 year proven reoffending rate				
			Treatment Group (%)	Control Group (%)	Significant Difference	Estimate of Impact On Reoffending	
Original Prison	202	215,132	40	48	Y	-15 to -1% pts	0.016
Basic Prison	201	154,913	39	48	Y	-16 to -2% pts	0.012
Original Probation	69	303,038	32	35	N	-15 to 8% pts	0.532
Basic Probation	68	192,053	32	38	N	-17 to 6% pts	0.356

The original report for Langley House Trust did not include a split between those offenders who were released from custodial sentences compared to those sentenced to a court order. However, in order to assess whether the inclusion of OASys information affects offenders released from prison more than those given a court order (or vice versa), a split analysis was produced.

For this split, again the treatment group results are reasonably similar to the original. The results in the prison models are statistically significant but they are insignificant in the probation models, suggesting that the overall significant result is due to the impact on the larger prison subgroup compared to the smaller probation subgroup: The one year re-offending rate is quite different for the control group when comparing the original probation model with the basic probation model, which is because of the different sizes in the matched control groups. This has resulted in a quite different p-value though it is still insignificant. The ranges show small differences in the basic models compared to the originals, the probation models ranges both cross 0 indicating statistically insignificant results. The inclusion of OASys variables has affected the probation model control group with decreased matching; this is possibly due to a lower proportion of OASys assessments carried out for those on probation sentences.

5.2 Frequency of re-offending

Table 3: Frequency of re-offending rates and p-values

Model Type	Matched Treatment Group	Matched Control Group	Frequency of reoffending (offences per person)			
			Treatment	Control	Significant difference	P Value
Original	231	528,622	0.95	1.15	N	0.153
Basic	230	399,376	0.95	1.13	N	0.213
Intermediate	229	306,829	0.96	1.16	N	0.150
Complex	227	288,600	0.96	1.15	N	0.203

The frequency of re-offending table shows similar results in all models compared to the original model, with the minor differences in results due to reasons mentioned previously. The results are not statistically significant and neither was the original model. The inclusion of OASys variables has only minimally altered the result for the frequency of re-offending for the treatment group and similarly for the control group, showing little difference to the original analysis.

Table 4: Frequency of re-offending rates and p-values for prison/probation split models

Model Type	Matched Treatment Group	Matched Control Group	Frequency of reoffending (offences per person)			
			Treatment	Control	Significant difference	P Value
Original Prison	202	215,132	1.50	2.04	Y	0.003
Basic Prison	201	154,913	1.46	1.98	Y	0.004
Original Probation	69	303,038	1.06	1.02	N	0.891
Basic Probation	68	192,053	1.07	1.14	N	0.817

There are differences in the frequency rates, which are caused by matching and differences in the control group sizes but the overall p values for the prison models are almost exactly the same, giving a statistically significant result for the frequency of re-offending. In the probation model the p-values are different from each other, most likely due to the differences in the control group sizes. The results show that the impact of adding OASys variables is quite small.

5.3 Time to re-offending

Table 5: Time to first re-offence and p-values

Model Type	Treatment group		Control Group		Significant difference	P value
	Reoffenders from treatment group	Average days to first offence	Reoffenders from control group	Average days to first offence		
Original	61	175	214,627	174	N	0.955
Basic	61	175	158,277	176	N	0.970
Intermediate	61	175	128,014	177	N	0.897
Complex	61	175	117,341	177	N	0.918

The time to re-offending is the same for the re-offending matched treatment group in all models, whilst the re-offending matched control groups for the 3 OASys-based models are broadly similar with the original model. The results are not statistically significant, just like the original analysis. The impact of adding OASys variables appears to have little impact on the time to re-offending with minor differences in the control groups due to different matching rates.

Table 6: Time to first re-offence and p-values for prison/probation split models

Model Type	Treatment group		Control Group		Significant difference	P value
	Reoffenders from treatment group	Average days to first offence	Reoffenders from control group	Average days to first offence		
Original Prison	80	126	117,607	127	N	0.911
Basic Prison	79	125	81,190	129	N	0.729
Original Probation	22	188	111,844	175	N	0.568
Basic Probation	22	188	70,820	176	N	0.609

From the results the differences are in the average days to first re-offence for the prison control groups again because of differences in the matched re-offenders. The effect of adding OASys produces a lower p-value for the prison model mainly due to the difference in the matched re-offenders from the control group, showing the addition of OASys can make small changes in the results.

5.4 Matching outputs and quality of matching

In the original analysis, 231 (76%) of the treatment group were matched, and a similar matched proportion remained for the other models. When looking at the control group, the original analysis had 74% matched, which decreased to 61% for the basic model. This decreased further in the intermediate and complex models (47% and 44% respectively). These decreases are to be expected as the control group will become more focused when accounting for more variables in the matching process.

Overall 73% of individuals in the treatment group had OASys records compared to 64% of the control group. Once the two groups were matched, this difference decreased to 70% in the matched treatment group and 73% in the matched control group.

Standardised differences are used to assess the quality of the matching between the treatment and control groups. Differences of between -5% and 5% indicate that the groups were well matched for that variable. Those with differences of between 6% and 10% and -6% and -10% suggest the groups were reasonably matched for this variable. Differences above 10% and below -10% indicate a poor match.

Table 7: Standardised differences for all variables included in each model

Model Type	Standarised Differences			
	Well Matched	Reasonably Well Matched	Poorly Matched	Total
Original	80	2	0	82
Basic	80	9	0	89
Intermediate	132	18	1	151
Complex	174	29	2	205
Original Prison	77	0	0	77
Basic Prison	85	0	0	85
Original Probation	37	19	19	75
Basic Probation	45	21	16	82

Table 8: Standardised differences of OASys variables

Model Type	Standarised Differences			
	Well Matched	Reasonably Well Matched	Poorly Matched	Total
Basic	6	1	0	7
Intermediate	59	10	0	69
Complex	98	23	2	123
Basic Prison	7	0	0	7
Basic Probation	7	0	0	7

Table 7 shows that the original model had 82 variables with all but 2 being well matched and for the three main OASys models, there is an increase in variables that were reasonably matched. However, as over 99% of variables on all models were either well matched or reasonably well matched, this indicates the groups were generally well matched in all analyses.

The probation models variables are of a poorer matching quality than the other models, the main factors for this are the smaller cohort (99 individuals) of the treatment group and a lower proportion of OASys records for those on probation sentences.

The standardised differences for the OASys variables included in each model are shown in table 8. The basic and intermediate models had all additional OASys variables as either well or reasonably well matched. The complex model had 2 OASys variables that were deemed to be poorly matched.

The variable that was deemed to be poorly matched in the intermediate model refers to the 2005 cohort year, whilst the 2 variables poorly matched in the complex model look at some problems of past misuse of alcohol and significant problems of social isolation, with 16% of the subgroup of the treatment group with OASys records having had some problems with past misuse of alcohol and 24% having had significant problems in their social isolation.

6.Conclusion

The inclusion of OASys variables allows the Justice Data Lab to examine the more complex needs of offenders. However, the inclusion of OASys into JDL analyses can only go so far due to incomplete records for some offenders and other offenders not having any OASys record. Also, an issue which can have an impact is that individuals may have completed multiple OASys assessments within small timeframes; for example on the same day, where the responses to questions are different. Following advice and assistance from NOMS, the most suitable OASys record to use is the one completed at the later time. However the Justice Data Lab cannot easily choose the most suitable OASys without a time stamp in the data available and will work on improving the OASys information held in order to improve the selection of the most suitable OASys record. However, the number of duplicates is largest in the complex model where they are less than 0.3% of the total control group so is not a substantial issue.

The Langley House test case results have shown to give very similar results to that of the original analysis with each step layering the OASys information. The additional OASys variables have been matched reasonably well across all models and the results across the headline re-offending measures remained in line with the original results, with similar ranges in the differences in the one year re-offending rate in particular. This has demonstrated that the inclusion of OASys information in this test case has not had any significant impact on the final assessment of the support provided to offenders by Langley House Trust.

The purpose of adding OASys variables in this test case was to assess if OASys data had an effect on the results and to take into account more of the complex needs that offenders have. Following a peer review of this methodology, the Justice Data Lab will begin to incorporate OASys information in requests when deemed necessary to that particular request (in particular, those interventions relating to drug and alcohol misuse). These cases will be dual-run with and without OASys information incorporated so that results can be compared and the impact of OASys can be understood further.

Annex:OASys variables included in the models

Basic Model

Section	OASys Variable	Description of Variable	No. of Categories	Category
Accomodation	S3Q3_NO_FIXED_ABODE	Does offender have no fixed abode	3	YES/NO_NULL/NA
Accomodation	LINKED_TO_RISKS	Does offender have accomodation issues linked to risks to individual and other risks	2	YES/NO_NULL
Accomodation	LINKED_TO_BEHAVIOUR	Does offender have accomodation issues linked to offending behaviour	2	YES/NO_NULL

Intermediate Model

Section	OASys Variable	Description of Variable	No. of Categories	Category
Accomodation	S3Q3_NO_FIXED_ABODE	Does offender have no fixed abode	3	YES/NO_NULL/NA
Accomodation	S3Q2_LIVES_WITH_PARENT	Does offender live with parents	3	YES/NO/NULL
Accomodation	S3Q2_LIVES_WITH_RELATIVE	Does offender live with relatives	3	YES/NO/NULL
Accomodation	S3Q2_LIVES_WITH_PARTNER	Does offender live with partner	3	YES/NO/NULL
Accomodation	S3Q2_LIVES_WITH_FRIEND	Does offender live with friend	3	YES/NO/NULL
Accomodation	S3Q2_LIVES_ALONE	Does offender live alone	3	YES/NO/NULL
Accomodation	S3Q2_LIVES_WITH_CHILDREN	Does offender live with children	3	YES/NO/NULL
Accomodation	S3Q4_SUITABILITY	Suitability of offender's accomodation	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Accomodation	S3Q5_PERMANENCE	Permance of offender's accomodation	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Accomodation	S3Q6_LOCATION	Suitability of location of offender's accomodation	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Drugs	S8Q1_DRUGS_USED	Has offender ever misused drugs	2	YES/NO_NULL
Drugs	S8Q5_MAIN_DRUG_USAGE_LEVEL	Level of use of main drug	2	WEEKLY/NO_NULL
Drugs	S8Q6_EVER_INJECTED_DRUGS	Has offender ever injected drugs	4	NULL/NO/PREVIOUSLY/CURRENT
Drugs	S8Q7_VIOLENT_BEHAVIOUR	Violent behaviour related to drug use	3	YES/NO/NULL
Drugs	S8Q8_MOTIVATION_TACKLE_MISUSE	Motivation to tackle drug misuse (Evidence of problems recognised? Consider whether s/he recognises or is motivated to reduce drug dependency and whether s/he is capable of change and wants to/has attended treatments/programmes)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Drugs	S8Q9_DRUG_USE_MAIN_ACTIVITY	Drug use and obtaining drugs a major activity/occupation	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Alcohol	S9Q1_CURRENT_USE	Is current alcohol use a problem	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Alcohol	S9Q2_BINGE_DRINKING	Binge drinking or excessive use of alcohol in last 6 months	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Alcohol	S9Q3_PAST_MISUSE	Frequency and level of alcohol misuse in the past	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Various	TOPCOMMRISK	Highest risk in community (all categories)	3	LOW_NULL/MEDIUM/HIGH_VERYHIGH
Various	TOPCUSTRISK	Highest risk in custody (all categories)	3	NULL/LOW/MEDIUM_HIGH
Various	TOTAL_LINKED_TO_RISKS*	Total risks linked to accomodation, drugs and alcohol	3	NO_NULL/RISKS_1/RISKS_2_3
Various	TOTAL_LINKED_TO_BEHAVIOUR*	Total behaviours linked to accomodation, drugs and alcohol	4	NO_NULL/BEHAVIOURS_1/ BEHAVIOURS_2/ BEHAVIOURS_3

Complex Model

Same as the intermediate model with addition of:

Section	OASys Variable	Description of Variable	No. of Categories	Category
Various	TOTAL_LINKED_TO_RISKS*	Total risks linked to accomodation, lifestyle,emotional well-being,thinking and behaviour, drugs and alcohol	6	NO_NULL/RISKS_1/ RISKS_2/RISKS_3/ RISKS_4/RISKS_5_6
Various	TOTAL_LINKED_TO_BEHAVIOUR*	Total behaviours linked to accomodation, lifestyle,emotional well-being,thinking and behaviour, drugs and alcohol	6	NO_NULL/BEHAVIOURS_ 1_2/ BEHAVIOURS_3/ BEHAVIOURS_4/ BEHAVIOURS_5/ BEHAVIOURS_6
Emotional Well-being (Mental Health)	S10Q1_DIFFICULTIES_COPING	Difficulties coping (Evidence of emotional instability or emotional stress, does s/he become easily upset, feel low or anxious, or have worries which interfere with everyday functioning?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Emotional Well-being (Mental Health)	S10Q2_PSYCHOLOGICAL PROBLEMS	Current psychological problems/depression (Psychological dysfunction or symptoms diagnosed by a GP, psychiatrist or clinical psychologist, including any history or treatment of phobias or hypochondria)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Emotional Well-being (Mental Health)	S10Q3_SOCIAL_ISOLATION	Social isolation (Does the offender have social networks outside the family and friends that they interact with on a regular basis, or do they lack close friends or associates? Are they a loner?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Emotional Well-being (Mental Health)	S10Q4_ATTITUDE_TO THEMSELVES	Offender's attitude to themselves (How does the offender view themselves, and what is their view based upon?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Emotional Well-being (Mental Health)	S10Q5_SELF_HARM	Self harm, attempted suicide, suicidal thoughts or feelings	2	NO_NULL/YES
Emotional Well-being (Mental Health)	S10Q6_PSYCHIATRIC_PROBLEMS	Current psychological problems (Psychiatric illness or symptoms diagnosed by a GP or psychiatrist including anxiety, obsessive compulsive behaviours, anorexia, sexual dysfunction, schizophrenia, manic depression)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Emotional Well-being (Mental Health)	S10Q7_PSYCHIATRIC_TREATMENT	History of psychiatric treatment	2	NO/YES
Emotional Well-being (Mental Health)	S10Q7_CURRENT_PENDING TREATMENT	Current psychiatric treatment or treatment pending	2	NO/YES
Lifestyle (Mental Health)	S7Q1_COMMUNITY INTEGRATION	Community Integration (Attachments to individual(s) or community groups. Participation in organised activities not linked to offending, including in prison, e.g. sports clubs, faith communities, etc.)	4	NULL/NO/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Lifestyle (Mental Health)	S7Q2_ACTIVITIES_ENCOURAGE	Regular activities encourage offending (Do the leisure activities most commonly engaged in creating opportunities to offend, or contribute to the need to offend e.g. gambling in prison?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS

Lifestyle (Mental Health)	S7Q3_EASILY_INFLUENCED	Easily influenced by criminal associates (Are most offences committed with others? When in the community does s/he spend a large amount of their time with other offenders?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Thinking and Behaviour (Mental Health)	S11Q1_INTERPERSONAL_SKILLS	Level of interpersonal skills (Are the offender's social/interpersonal skills adequate i.e. to their background and normal circumstances?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Thinking and Behaviour (Mental Health)	S11Q2_IMPULSIVITY	Impulsivity (Does offender prefer to act rather than plan, take decisions which are later regretted, become bored easily, require stimulation?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Thinking and Behaviour (Mental Health)	S11Q3_AGGRESSIVE	Aggressive/controlling behaviour (Does offender show agression to others, or use violence or threats in order to resolve conflicts with others, e.g. domestic violence?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Thinking and Behaviour (Mental Health)	S11Q4_TEMPER_CONTROL	Temper control (Does offender lose his/her temper easily and often. Does s/he have a low tolerance, is s/he poor at conflict resolution, unable to control emotions)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Thinking and Behaviour (Mental Health)	S11Q5_RECOGNISE_PROBLEMS	Ability to recognise problems (Does the offender have insight into areas of their life which are problematic?)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS
Thinking and Behaviour (Mental Health)	S11Q8_ACHIEVES_GOALS	Achieve goals (Does the offender fail to set goals in all areas of their life? Are they unrealistic and unsupported by planning? Does s/he lack motivation to achieve goals? No examples of reaching goals)	3	NO_NULL/SOME PROBLEMS/SIGNIFICANT PROBLEMS

*Risks_1 indicate an offender has risks of offending and harm associated with one OASys section (Drugs, for example)

*Risks_4 indicate an offender has risks of offending and harm associated with four OASys sections (Accommodation, drugs, alcohol and relationships, for example)

*Behaviours_1 indicate an offender has issues linked to offending behaviour associated with one OASys section (Alcohol, for example)

*Behaviours_5 indicate an offender has issues linked to offending behaviour associated with five OASys sections (Accommodation, drugs, alcohol, thinking/behaviour and emotional well-being, for example)