Appendices to the Evaluation of the Youth Justice Liaison and Diversion (YJLD) Scheme

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Appendix A - Reoffending study

1. Sampling methodology: the control group

The reoffending study used a quasi-experimental design[1] in order to measure and compare the reoffending rates amongst young people going through the YJLD pilot schemes and those of young people going through closely matched YOT sites (part of the same YOT family, as explained below) and without access to the YJLD scheme. The YOT sites (concurrent control groups[2]) were selected to strengthen the methodology of the reoffending study, particularly its internal validity (in order to estimate the 'counterfactual inference', i.e. *what would have happened to the target/experimental group if the intervention had not been applied to them?*).

Sampling of the comparator group involved three main stages:

1. Selecting the YOTs to be used for comparison, following two main principles: (1) they belonged to the same 'YOT family' (which is a comparative group of similar YOTs in terms of population, socio-demographics etc) and (2) they did not encompass a scheme similar to YJLD.
2. Producing a list of eligible young people in the comparator YOT sites following inclusion criteria for the YJLD group (age and referral date) and
3. Matching all eligible YJLD young people with those from the emerging YOT lists. This involved selecting the first young person in the comparator group who had the closest profile to the young person from the YJLD group (following gender, age, ethnicity and, where available, offence type). Where the exact match was not possible (e.g. based on all variables), the next best match was then considered (e.g. where age was not available, ethnicity was selected etc.) and so forth. The reoffending data on the emerging sample was provided by the Police National Computer (PNC).

YOT Families

YOT families were created following the model used for police force BCU (Basic Command Unit) and CDRP (Crime and Disorder Partnership) families[3]. These families are based on socio-demographic and economic factors shown to correlate geographically with the level of crime within an area. In the case of YOT families, youth specific variables are also used to reflect the demand for YOT services. ***Table 10*** below illustrates the type of variables used to cluster these areas.

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[1] The term quasi-experiment was introduced by Campbell and Stanley (1963).The minimum interpretable design believed to be most adequate to draw conclusions about crime prevention measures is considered to be Level 3 of the Maryland Scientific Methods Scale (SMS) of quasi-experimental analysis (Sherman et al., 1998, 2002). The SMS was largely based on the ideas of Cook and Campbell (1979) and was influenced by the methodological quality scale developed by Brounstein et al. (1997) in the National Structured Evaluation of Alcohol and Other Drug Abuse Intervention.

[2] The ability of the quasi-experimental to rule out threats to the internal validity of the study is very dependent on the closeness of the match and the ability to control for all the variables which might theoretically be expected to impact upon the outcome measure(s). ***The control group*** is generally used in order to exclude as much as possible other plausible alternative explanations of the effect, which means that this group need to be free of the YJLD intervention and similar in nature, size and other key variables to the target group. A closer match would provide more accurate inferences about cause and effect.

[3] See, for example Leigh et al. (2000) and Sheldon et al. (2002).

Table 10 Variables used to cluster the areas for 'YOT Families'*

Variable	Description
10-17 Year Olds	Number of 10 – 17 year olds in a YOT.
Household/ Neighbourhood variable	A neighbourhood description is assigned to each output area in the UK. An output area is the smallest geographical area that Census data is available in.
% Student Households	This looks at the percentage of a Yot's households that are categorised as student households (2001 Census).
% Terraced Households	The number of terraced households (2001 Census) divided by the total number of households (2001 Census) multiplied by 100.
Output Area (OA) density	This variable is the same as ED density used in the Most Similar Force families. The 2001 Census uses Output Areas instead of Enumeration Districts (EDs). It aims to give a better indication of population density as it will highlight small pockets of densely populated housing in Yots (where as the overall population density for these might be low if the rest of the YOT was sparsely populated). It is calculated as follows. It is the number of residents per hectare for each OA multiplied by that OA's share of the Yot's population. These results are then added together and divided by 10.
Overcrowding	This is a census variable. Households are classified as being overcrowded if they have an occupancy rating of –1 or less (this is determined by the ratio of rooms in the house to occupants). The variable calculates what percentage this is of total households in the area.
% Single Adult Households	The number of households containing only one person aged 18 or over (2001 Census) divided by the total number of households (2001 Census) multiplied by 100.
%Single Parent Households	Using 2001 Census data, this variable looks at what percentage of Yot's households are single parent households (with dependent children).
Population sparsity	This is opposite to the OA density variable – it is another measure of population density.
% claiming unemployment-related benefits	This is the percentage of the area's population claiming unemployment-related benefits.
Number of Retail Outlets	This data is used to calculate the number of retail and leisure outlets per hectare for each Yot. This gives us an indication of areas that have large city centres in them.
Day Time Population Per Hectare	This is a census 2001 variable on the day-time population of an area, taking into account resident population and migration to work (work place population).
Bars per hectare	This is the number of bars per hectare. This gives us an idea of evening population and city centre locations.
Domestic Visitors per hectare	This is UK Tourism Survey data on the number of overnight visits to an area.
% Migrants	This is the % of a YOT's population that did not live at the same address a year before hand.

*From YJB correspondence (2009)

Each YOT has a family of 9 other YOTs, with the YOT listed under the first heading as the closest 'relative' and the YOT listed under the ninth heading its most distant 'relative'. For the purpose of the current evaluation, it was aimed that each YJLD site will be compared with the closest 'relative'/YOT. However, after numerous attempts to engage the relevant YOTs, only three comparator YOTs were successfully recruited, with one YOT used as a comparator for two intervention sites (but with different matched cohorts). One comparator was the first member in the YOT family (out of 9), one was second member and two were thirst members of the YOT family.

Thus the Lewisham, Peterborough, South Tees and Wolverhampton YJLD sites were compared with a similar YOT. For ethical reasons, these were kept anonymous.

The PNC data

The PNC data represents the criminal history of the young people in the cohort – that includes convictions and cautions before and after the index date. The index date varied between sites, with the earliest in ***January 2009*** and the latest on ***31st March 2010***. The extract was taken from the most relevant version of the PNC database held by the MoJ which includes data up to ***1st July 2011***. The follow up period (including waiting period to allow for offences to be cautioned) varied between ***16 and 36 months***.

The PNC extract provided information as indicated in ***Table 12*** below:

Table 12 PNC extraction report
(Size of raw cohort, size of matched cohort, size of cohort with criminal history)

	Area	Raw (n)	Matched (n)	Criminal history (n)
1	Lewisham	57	46	29
2	ComparatorYOT.2	52	52	44
3	Peterborough	32	31	31
4	ComparatorYOT.5	37	35	35
5	RBKC	27	27	9
7	South Tees	96	93	90
8	ComparatorYOT.8	111	111	111
9	Wolverhampton	19	18	17
	Total	**431**	**413**	**366**

About the PNC data used in this study:

- It should be noted that an offender can have many offences, which in turn could correspond to many sentencing occasions. An offence that goes to court can have up to 10 disposals (sentences) recorded against it. The analysis in the study did not take into account the disposals given for re-offences, but disposal data are available if further analysis is required.
- The minimum number of re-offences recorded in the current dataset for one individual was 1 and the maximum was 74.
- For clarification, an offence could be given a police caution or court conviction. The police cautions are for offences which do not go to court (therefore without a disposal, with the exception of conditional cautions). The analysis reports on both cautioned

and convicted reoffences, therefore the term ‘proven reoffending’ was used rather than ‘reconviction’.

- The minimum age that a person can be sentenced/cautioned is 10 years old. If an offender appeared younger, it was considered an error and was omitted from the data.
- It should be noted that the PNC data does not provide information on how much time an offender has spent on remand; there is no record of when an offender is released from custody nor the length of a served sentence; it does not contain details of very minor offences.

2. Additional tables and figures (reoffending rates)

Table 13 Most frequent type of offences

Site	Most frequent (n)	Second most frequent (n)	Third most frequent (3)
Lewisham	Summary offences excluding motoring (42)	Theft and handing stolen goods (29)	Violence against the person (8)
ComparatorYOT.2	Theft and handing stolen goods (28)	Summary offences excluding motoring (24)	Drug offences (19)
Peterborough	Summary offences excluding motoring (66)	Theft and handing stolen goods (42)	Sexual offences (21)
ComparatorYOT.5	Summary offences excluding motoring (44)	Theft and handing stolen goods (23)	Violence against the person (3) Summary motoring offences (3)
South Tees	Summary offences excluding motoring (284)	Theft and handing stolen goods (197)	Violence against the person (28)
ComparatorYOT.8	Summary offences excluding motoring (231)	Theft and handing stolen goods (128)	Violence against the person (53)
Wolverhampton	Summary offences excluding motoring (26)	Theft and handing stolen goods (20)	Violence against the person (19)
Kensington	Theft and handing stolen goods (6)	Drug offences (8)	Summary offences excluding motoring (3) Violence against the person (3)

Table 14 Comparison 1 Lewisham against ComparatorYOT.2

	Lewisham	ComparatorYOT.2	Significance
n	57	52	
Age at arrest Mean(st. dev) Range	 14.41 (1.82) (10, 17)	 15.67 (1.52) (11, 17)	 <0.001[1]
Gender Females (%) Males (%)	 21 (40.4) 31 (59.6)	 21 (40.4) 31 (59.6)	 NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	 23 (44.1) 2 (3.8) 14 (26.9) 12 (23.1) 1 (1.9) 0	 17 (37.0) 4 (8.7) 19 (41.3) 1 (2.2) 0 5 (10.9)	 NA[4]
Reoffending Yes n(%) No (%)	 34 (59.6) 23 (40.4)	 26 (50.0) 26 (50.0)	 NS[2]
Survival time (days) Mean (st.err) Hazard ratio (controlling for age difference)	580.46 (47.01)	334.11 (64.32) 2.23 (1.25, 4.00)[7]	0.002[1]

1. Mann-Whitney U test
2. Chi-squared test
3. NS = Not significant
4. Hypothesis test not applicable due to sparse data in cells
5. Adjusted for difference in age between groups
6. Log-Rank Test
7. Cox regression
8. LS = less serious
9. S serious
10. T0 – Intervention time
11. Fisher's exact test

Table 15 Comparison 2 Peterborough against ComparatorYOT.4

	Peterborough	ComparatorYOT.4	Significance
n	32	37	
Age at arrest Mean (st. dev) (range)	14.81 (1.38) (11, 17)	15.95 (1.10) (13, 17)	0.001[1]
Gender Females (%) Males (%)	14 (43.8) 18 (56.3)	17 (45.9) 20 (54.1)	NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	20 (64.5) 2 (6.5) 2 (6.5) 0 3 (9.7) 4 (12.9)	20 (58.8) 3 (8.8) 1 (2.9) 0 0 10 (29.4)	NA[4]
Reoffending Yes n(%) No (%)	21 (65.5) 11 (34.4)	31 (83.9) 6 (16.1)	NS[2]
Survival time (days) Mean (st. error) Hazard ratio (controlling for age difference)	220.17 (36.86)	84.64 (23.31) 2.53 (1.34, 4.79)[7]	0.002[6]

Table 16 Comparison 3 South Tees against ComparatorYOT.8

	South Tees	ComparatorYOT.8	Significance
n	100	95	
Age at arrest Mean (st. dev) (range)	14.60 (1.59) (10, 17)	15.69 (1.37) (12, 17)	<0.001[1]
Gender Females (%) Males (%)	14 (14.0) 86 (86.0)	15 (15.8) 80 (84.2)	NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	94 (94.0) 2 (2.0) 0 2 (2.0) 2 (2.0) 0	88 (92.6) 2 (2.1) 0 1 (1.1) 0 4 (4.2)	NA[4]
Reoffending Yes(%) No(%)	64 (64.0) 36 (36.0)	52 (54.7) 43 (45.3)	NS[2]
Survival time (days) Mean (st. err) Hazard ratio (controlling for age difference)	240.34 (31.87)	233.52 (27.35) 0.91 (0.58, 1.42)	NS[6]

Table 17 Comparison 4 Wolverhampton against ComparatorYOT.8

	Wolverhampton	ComparatorYOT.8	Significance
n	19	16	
Age at arrest Mean (st. dev) (range)	 14.84 (1.83) (10, 18)	 15.67 (1.40) (12, 17)	 <0.001[1]
Gender Females (%) Males (%)	 12 (63.2) 7 (36.8)	 7 (43.8) 9 (56.3)	 NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	 16 (84.2) 1 (5.3) 1 (5.3) 0 0 1 (5.3)	 13 (81.6) 1 (6.3) 1 (6.3) 0 0 1 (6.3)	 NA[4]
Reoffending Yes(%) No(%)	 11 (57.9) 8 (42.1)	 5 (31.3) 11 (68.8)	 NS[11]
Survival time (days) Mean (st.err) Hazard ratio (controlling for age difference)	 299.53 (67.02)	 150.40 (21.70) 0.48 (0.13, 1.74)	NS[6]

3. First time entrants (FTEs) analysis: additional tables

Table 21 FTE * Reoffending in Lewisham vs. Comparator site*

	Lewisham	ComparatorYOT.2	Significance
n	45	43	
Age at arrest/referral Mean(st. dev) Range	 14.09 (1.87) (10, 17)	 15.60 (1.51) (11, 17)	 <0.001[1]
Gender Females (%) Males (%)	 16 (39.0) 25 (61.0)	 20 (46.5) 23 (53.5)	 NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	 19 (47.5) 1 (2.5) 10 (25.0) 9 (22.5) 1 (2.5) 0	 15 (37.5) 3 (7.5) 18 (45.0) 1 (2.5) 0 3 (7.5)	 NA[4]
Reoffending Yes (%) No (%)	 **28 (62.2)** **17 (37.8)**	 **25 (58.1)** **18 (41.9)**	 **NS[2]**
Survival time (days) Mean (st.err) Hazard ratio (controlling for age difference at index)	 **624.15 (29.20)**	 **425.38 (67.54)** **2.23 (1.12, 4.44)[7]**	**0.02[6]**

*There is a significant difference in age at index date between the two sites. However, there is no significant difference in reoffending rates. When survival times are compared those in the intervention site take a significantly longer time to reoffend. Also when the difference in age at index date are included in the analysis those in the comparator site are just over twice as likely to reoffend.

Table 22 Table x FTE * Reoffending in Peterborough vs. Comparator site*

	Peterborough	ComparatorYOT.5	Significance
n	10	27	
Age at index date Mean(st. dev) Range	 14.67 (1.68) (12, 17)	 15.81 (1.15) (13, 17)	 0.05[1]
Gender Females (%) Males (%)	 4 (40.0) 6 (60.0)	 14 (51.9) 13 (48.1)	 NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	 8 (80.0) 0 1 (10.0) 0 0 1 (10.0)	 16 (59.3) 2 (7.4) 1 (3.7) 0 0 8 (29.6)	 NA[4]
Reoffending Yes n(%) No (%)	 3 (30.0) 7 (70.0)	 4 (14.8) 23 (85.2)	 NS[2]
Survival time (days) Mean (st.err)	 183.64 (50.31)	 99.20 (30.06)	NS[6]

*There are no statistically significant differences in reoffending rate or the time to reoffending. This is probably due to the relatively small number of FTEs at the intervention site.

Table 23 FTE * Reoffending in South Tees vs. Comparator site*

	South Tees	ComparatorYOT.8	Significance
n	21	36	
Age at index date Mean(st. dev) Range	 14.24 (1.84) (10, 17)	 15.71 (2.09) (13, 17)	 0.002[1]
Gender Females (%) Males (%)	 6 (28.6) 15 (71.4)	 9 (25.0) 27 (75.0)	 NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	 20 (95.2) 1 (4.8) 0 0 0 0	 35 (97.2) 0 1 (2.8) 0 0 0	 NA[4]
Reoffending Yes n(%) No (%)	 **16 (76.2)** **5 (23.8)**	 **22 (61.1)** **14 (38.9)**	 **NS[2]**
Survival time (days) Mean (st.err) Hazard ratio (controlling for age difference at index)	 **572.25 (73.62)**	 **280.59 (48.53)** **4.30 (1.53, 12.09)[7]**	**0.003[6]**

*There are statistically significant differences in the age at index date and the time to reoffending. However, reoffending rates are not statistically significantly different between the two sites. When the difference in age at index date is included in the analysis those in the comparator group are over 4 times more likely to reoffend.

Table 24 FTE * Reoffending in Wolverhampton vs. Comparator site*

	Wolverhampton	Comparator	Significance
n	10	0	

*Due to there being no first time offenders at the comparator site no further analysis is possible

4. Desistance from offending (time to first re-offence): additional figures

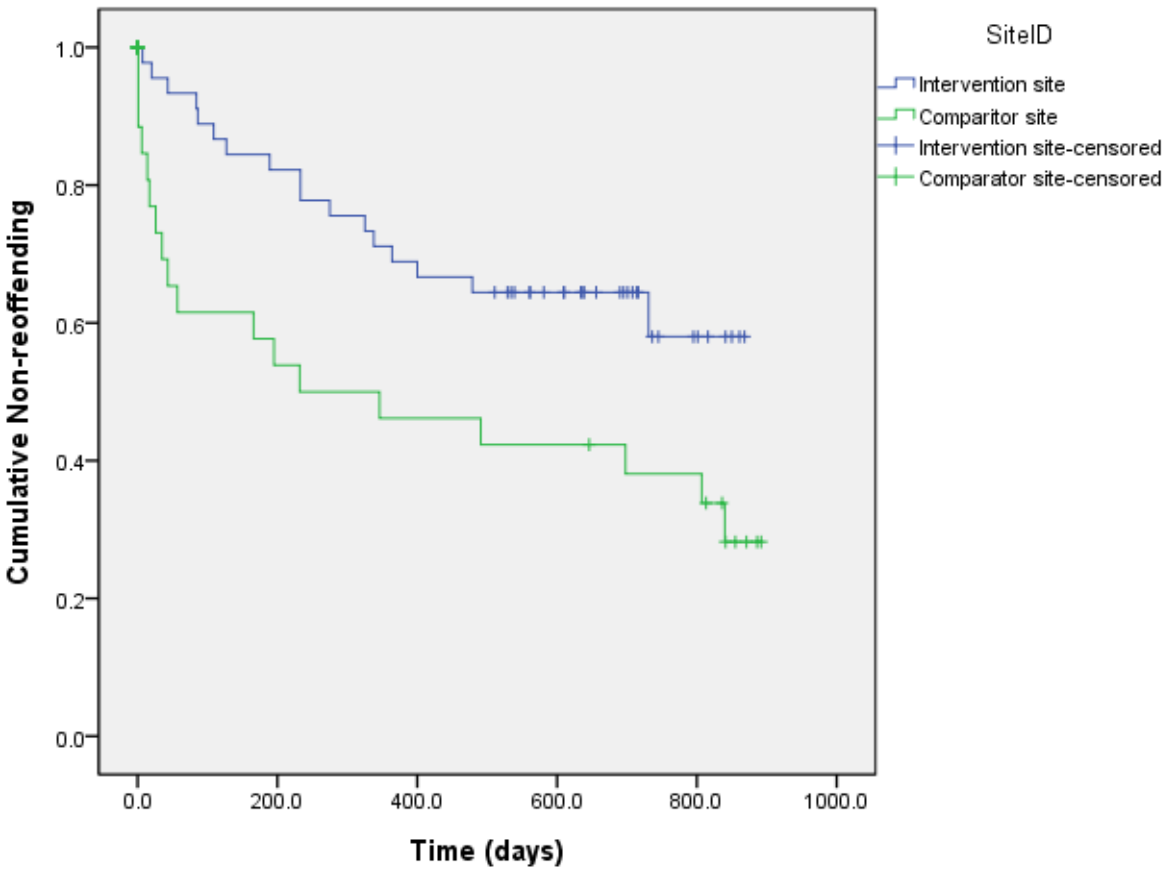

Figure 11: Survival function Lewisham against Comparator site
To be noted that 'censored' implies the last known survival times of individuals who do not experience the event of interest (in this case reoffend).

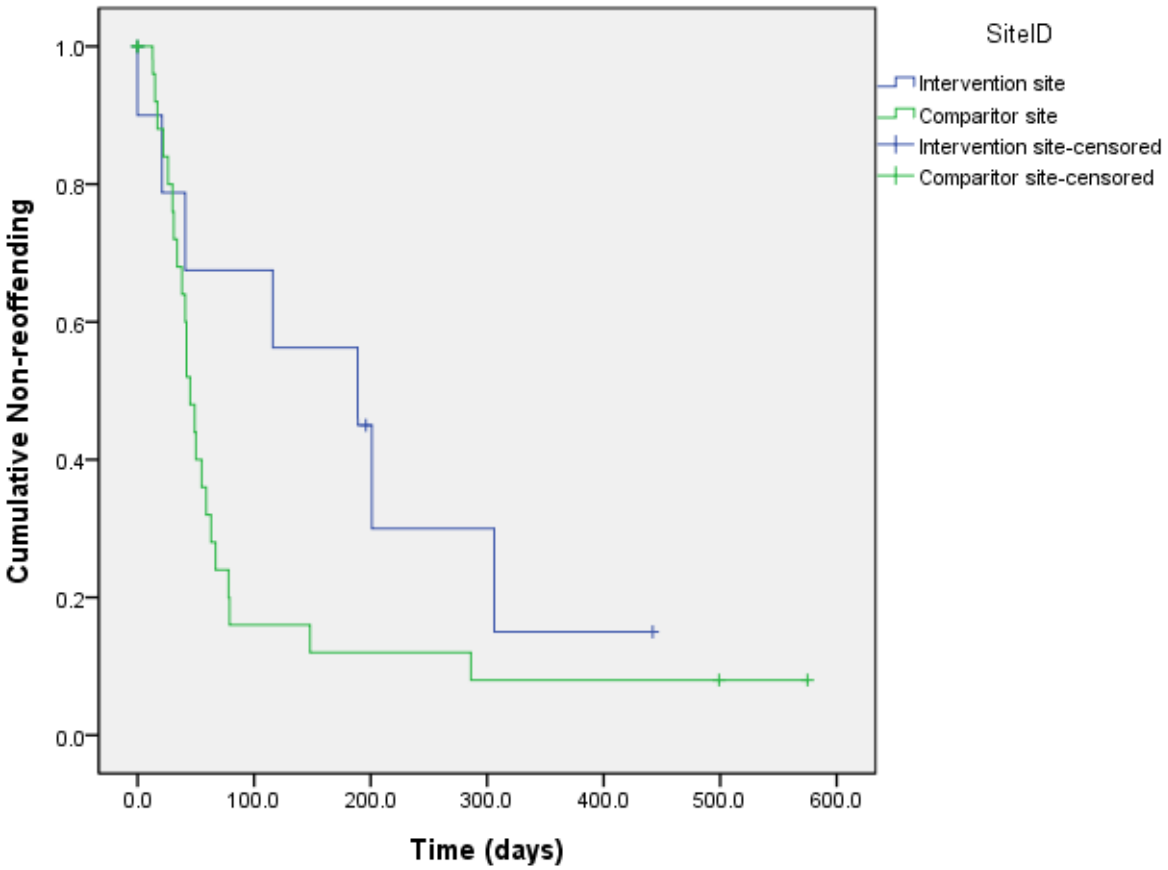

Figure 12: Survival function Peterborough against Comparator site

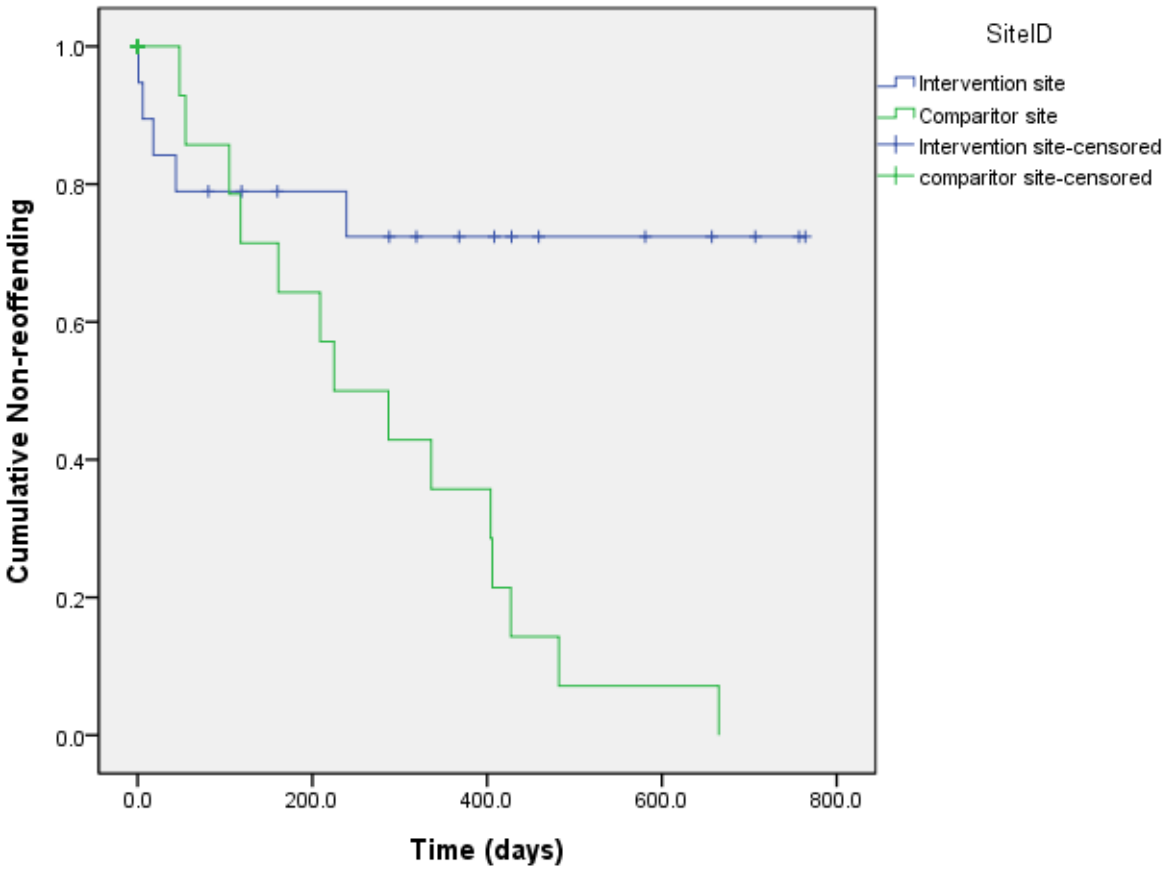

Figure 13: Survival function South Tees against Comparator site

5. Reoffending – aggregate data analysis (not included in the report)

	Intervention	Control	Significance
n	208	200	
Age at arrest Mean(st. dev) Range	 14.60 (1.64) (10, 17)	 15.74 (1.36) (11, 17)	<0.001[1]
Gender Females (%) Males (%)	 56 (40.4) 147 (59.6)	 60 (30.0) 140 (70.0)	 NS[2,3]
Ethnicity White n(%) Asian n(%) Black n(%) Mixed n(%) Other n(%) Other Euro n(%)	 153 (75.7) 7 (3.5) 17 (8.4) 14 (6.9) 6 (3.0) 5 (2.5)	 138 (72.3) 10 (5.2) 21 (11.0) 2 (1.0) 0 20 (10.5)	 NA[4]
Reoffending Yes n(%) No (%)	 119 (57.2) 89 (42.8)	 114 (57.0) 86 (43.0)	 NS[2]
Survival time (days) Mean (st.err) Hazard ratio (controlling for age difference)	369.57 (26.98)	221.65 (24.21) 1.57 (1.18, 2.09)[6]	<0.001[5]

1. Mann-Whitney U test
2. Chi-squared test
3. NS = Not significant
4. Hypothesis test not applicable due to sparse data in cells
5. Log-Rank Test
6. Cox regression

6. Predictors of reoffending: additional tables

Review - predictors of reoffending amongst juveniles (under 18 years old)

Study	Description & comments	Predictors reoffending (strongest)
Loeber and Dishion (1983)	Reviewed studies from 1962 to 1980. Study included variables related to both first time and repeat offending	• ***History of stealing, lying and/or truancy***; • ***Self-reported child problem behaviour (e.g. aggressiveness);*** • ***Prior offending;*** • ***Criminality among family members***
Simourd and Andrews's (1994)	Reviewed 60 studies between 1964 and 1994. The review did not distinguish between first time and repeat offenders, but included both.	• ***Anti-social peers or attitudes*** (most frequent) • ***Temperament or conduct problems*** (e.g. psychopathy, impulsivity and substance use); • ***Educational difficulties*** (e.g. poor grades, dropout status); • ***Poor parent-child relations*** (e.g. problems in attachment or supervision); • ***Minor personality variables*** (e.g. empathy, moral reasoning).
Cottle, Lee and Heilbrun (2001)	Reviewed 23 studies conducted between 1983 and 2000. Focus only on reoffending (repeat offenders) rather than both initial offending and recidivism. All studies included in their meta-analysis focus on identifying factors related to reoffending behaviour in juveniles. Findings presented by Cottle et al (2001) indicate that **age at onset** (i.e. age at first arrest and age at first contact with the law) is an important temporal variable that increases the risk for subsequent offending amongst juveniles.	If risk factors considered separately, the strongest individual predictors of reoffending (for those juveniles who offended at least once): • ***Young age at first commitment;*** • ***Young age at first contact with the law;*** • ***History of non-severe pathology (e.g. stress, anxiety).*** Significant static* predictors of reoffending: • Demographics: ***male gender and lower socio-economic status*** • Offending history: ***earlier age at onset of offending; more arrests and commitments, longer incarcerations and more serious types of offences***; • Family and social factors: ***history of physical or sexual abuse; being raised in a single parent home and having a greater number of out of home placements***; • Educational and testing domains: ***history of being in special education***

		classes and lower standardised achievement test scores, lower full scale IQ scores and lower verbal IQ scores. **Significant dynamic** predictors of reoffending**: • Family and social factors: ***family instability and problematic interactions, association with delinquent peers and poor use of leisure time***; • ***Conduct problems (psychopathy, impulsivity), non severe pathology (stress, anxiety) and substance abuse (not necessarily substance use)***; • Educational performance: ***low achievement test scores***
Jolliffe and Farrington (2009)		Other variables proven to have a statistically significant relationship with *reconviction*: • ***Age;*** • ***Gender;*** • ***Ethnicity;*** • ***The type of current index offence;*** • ***Age at first reconviction;*** • ***Previous criminal history (e.g. number of previous sentencing occasions);*** • ***Number of youth custodial sentences***.

*Static variables = not subject to change through planned intervention
**Dynamic variables = with the potential to change through planned intervention

Table 27 Offending History - Site comparison

	Lewisham	Comparator 2	
History of offences Yes n(%) No n(%)	 12 (21.1) 45 (78.9)	 9 (17.3) 43 (82.7)	NS[3]
Age at first conviction/caution Mean (st. dev) (range)	14.78 (1.80) (11,18)	16.10 (1.84) (11,18)	0.001[6]
	Peterborough	**Comparator 5**	
History of offences Yes No	 22 (68.8) 10 (31.3)	 10 (27.0) 27 (73.0)	0.001[3]
Age at first conviction/caution	14.33 (1.58) (11,17)	15.94 (1.45) (13,18)	<0.001[6]
	South Tees	**Comparator 8**	
History of offences Yes No	 79 (79.0) 21 (21.0)	 59 (62.1) 36 (37.9)	0.01[2]
Age at first conviction/caution	13.12 (1.72) (10,17)	15.22 (1.98) (11, 18)	<0.001[6]
	Wolverhampton	**Comparator 8w**	
History of offences Yes No	 9 (47.4) 10 (52.6)	 0 16 (100.0)	0.001[2]
Age at first conviction/caution	14.54 (2.52) (10, 17)	14.82 (2.21) (10, 18)	NS[6]

[6] Mann-Whitney U test

7. **Reoffending for only those YP who have engaged with YJLD teams (sample too sample, analysis not included in the report)**

Table 28 SiteID * Referral Outcome Crosstabulation

Site	Referral outcome (counts)							
	Missing	Info offered, YP did not engage	Intervention offered, YP engaged	Intervention offered, YP did not engage	Liaison only	Reparation only	Screening, no issues	Total
Lewisham	57	0	0	0	0	0	0	57
ComparatorYOT.2	52	0	0	0	0	0	0	52
Peterborough	9	0	11	8	4	0	0	32
ComparatorYOT.4	37	0	0	0	0	0	0	37
RBKC	22	0	1	2	1	1	0	27
South Tees	1	21	39	1	38	0	0	100
ComparatorYOT.8	111	0	0	0	0	0	0	111
Wolverhampton	0	0	11	4	2	0	2	19
Total	289	21	62	15	45	1	2	435

Appendix B – Additional tables – Webshare study

Table 4 Age and gender crosstabulation

Age		Gender			
		Female	Male	Unknown	Total
9	Count	0	1	0	1
	% within Gender	0%	0%	0%	0%
10	Count	0	12	0	12
	% within Gender	0%	2%	0%	1%
11	Count	5	33	0	38
	% within Gender	2%	5%	0%	4%
12	Count	17	50	0	67
	% within Gender	6%	7%	0%	7%
13	Count	38	77	1	116
	% within Gender	14%	11%	13%	11%
14	Count	52	117	5	174
	% within Gender	19%	16%	63%	17%
15	Count	75	157	0	232
	% within Gender	27%	22%	0%	23%
16	Count	46	155	2	203
	% within Gender	17%	21%	25%	20%
17	Count	43	116	0	159
	% within Gender	16%	16%	0%	16%
18	Count	1	1	0	2
	% within Gender	0%	0%	0%	0%
Incorrect	Count	0	5	0	5
	% within Gender	0%	0%	0%	0%
Total	Count	277	724	8	1009
	% within Gender	100%	100%	100%	100%

Appendix C – Additional information regarding the economic study

Challenges of undertaking an economic analysis of the YJLD scheme, A. Haycox, University of Liverpool

The quality of the underlying evidence represents a fundamental determinant of the robustness and reliability of any economic evaluation. Developing a complex economic model in the face of a paucity of evidence is akin to constructing an ornate castle on flimsy foundations. In evaluating the quality of underlying evidence, clarity is essential in a range of areas if trial based evidence is to be considered reliable. The National Institute of Health and Clinical Excellence (NICE) require unambiguous clarity in five specific elements prior to undertaking any evaluations of Health technology- population, intervention, comparator, outcome and study design (PICOS). With regard to the YJLD pilot project fundamental problems were identified in each of these aspects of trial design.

Firstly with regard to population, there appeared to be a lack of clarity with regard to the target population for YJLD intervention. YJLD will inevitably be most clinically and cost-effective in offenders whose initial offending behaviour is most receptive to therapeutic intervention. This target population extracts two characteristics. Firstly it will consist of early (or ideally first-time) offenders whose offending behaviour is more malleable and open to change. Secondly it is imperative to identify a sub-population of young offenders who are most likely to respond positively to the therapeutic interventions provided by the YJLD. Unfortunately the YJLD pilot sites appeared to include a wide disparity in the interpretation of the YJLD target population. This led to different YJLD pilot sites supporting clients exhibiting disparate characteristics which were likely to be variable in their response to YJLD intervention. Such variations made comparisons between individual pilot sites more difficult but also by incorporating less responsive clients it had the effect of reducing the clinical and cost-effectiveness of YJLD intervention overall. Optimising the cost-effectiveness of YJLD requires targeting the service on clients that are most likely to respond to therapy rather than punishment.

The second crucial area of clarity required in any trial is with regard to the exact nature of the intervention being evaluated. This must be defined not in vague generalities but in exact practical terms which ensure that all participants in the trial know in precise detail the nature of the new intervention being evaluated. Again in the case of YJLD this did not appear to be the case with different pilot sites appearing to interpret the inputs and processes of YJLD in widely differing scenarios. Economic evaluation is a comparative discipline. The concept of the cost-effectiveness of any intervention represents a meaningless concept in itself until a comparator is specified.

The third area requiring clarity relates to defining an appropriate comparator for YJLD intervention. The normal course is to compare the new intervention with ‘standard care’. Clients that are referred to the new service (YJLD) would have previously been supported in some alternative manner with associated costs and outcomes. This represents the appropriate comparator for YJLD clients- the service that they would have received in the absence of YJLD intervention. By definition the YJLD population represents a defined subgroup of offenders with vulnerabilities which act as determinants for their initial offending behaviour and as such they are unlikely to be entirely representative of the mainstream population of offenders. However given that their treatment, in the absence of YJLD, would be likely to be the same as other offenders then this represents the appropriate comparator.

Perhaps the area in which clarity is most fundamental is in the area of outcome- what exactly is the new intervention aiming to achieve? This is fundamental as without clarity in service objectives it is not possible to evaluate the extent to which such objectives have actually been achieved. Multiple outcomes can and frequently are recognised for a new intervention but one must be designated as the primary objective (with multiple possible secondary objectives) for use in the economic evaluation. For the purposes of our economic evaluation we identified a reduction in subsequent offending behaviour as being the primary outcome associated with YJLD intervention. We chose this outcome as such a reduction appears to provide the greatest benefit to both the client and to society as a whole and also to provide the greatest potential future cost savings to both the public sector and to society as a whole. Again it is important to emphasise that this does not preclude a range of valuable secondary outcomes being achieved by the YJLD scheme.

The final characteristic assessed by NICE analyses the extent to which the study design was 'fit for purpose' in addressing the research question. Unfortunately in many cases certain high quality (randomised) research designs may not be possible for ethical or practical reasons. This appears to be the case with YJLD as given that it represented a fundamental change in the nature of service delivery, comparisons had to be undertaken at the level of the individual 'programme'. Thus although extreme care was taken in an attempt to 'match' comparator programmes it is inevitable that such 'matching' may only have met with limited success. The results obtained in this economic evaluation therefore need to be interpreted in relation to the limitations in the evidence base outline above. The YJLD trials were not well controlled and hence the interpretation of the data generated is frequently extremely difficult. A further weakness underlying the organisation of the YJLD trials was their failure to collect resource data. Such data represents an essential element of any economic analysis that aims to evaluate the cost-effectiveness of any new service. Unfortunately the only 'resource' data that was available in each of the YJLD pilot sites related to the budget allocated to fund each service. Although of limited value this represents a mere transfer of funds and would not take account of resources used by YJLD services outside this budget, or services provided outside this budget, or services provided from within this budget to non-YJLD clients. The lack of accurate data relating to resource consumption in YJLD and comparator sites represents a fundamental flaw in the information available to inform this evaluation.

Given these limitations the results obtained in this economic evaluation should be perceived as being indicative rather than definitive.

The re-offences committed by YJLD individuals cost more in the short-term, in terms of court costs, than those committed by the individuals in each of their comparator sites. Although there are a handful of prolific offenders who appear as outliers in the data and so may skew the results, these individuals cannot be ignored as they often carry the largest burden of cost. The differences in re-offences committed between YJLD and comparator sites may lie in the comparative targeting of the individuals in each site, however an accurate justification for the variation in the number and costs of re-offences cannot be established from the current data.

As expected, first time offenders re-offend less than their counterparts with an offending history. The types of offences committed and therefore the associated costs differ significantly between first time and previous offenders. A more detailed analysis of long-term outcomes data would enable recommendations on which group of young people benefit the most from the YJLD to be made.

Initial patterns from the CA-SUS sample, although too small to draw any firm conclusions, suggest that school exclusion may be prevented as part of the scheme, which could have large resource saving implications. Preliminary indications from this sample are also that individuals on the YJLD scheme seem to require more resources from the health sector in particular, than their non-YJLD counterparts. Resource switching of this nature needs to be considered in any future evaluation of this scheme, not only between governmental departments but also from the public sector to private individuals.

The incremental increase in cost per case of the YJLD sites is between £90 and £1,103 than in the comparative YOT sites, using cost and caseloads for the entire period of data collection, to take into account any initial learning curves. It must be reiterated that this has been calculated from budget and caseload information alone therefore does not represent how the budget is spent in practice.

In this case the economic question for decision makers to consider is if the YJLD scheme is a cost-effective use of state resources. Preventing one 'career' criminal (at an estimated cost of £80k, see Nef, 2010) would essentially fund between 72 and 888 additional places for young offenders on the YJLD programme, considering cost-savings to the state alone. When the wider costs to society as a whole are also included (at an estimated cost of £335k (Nef, 2010) the number of individuals who are able to be funded on the YJLD scheme rises to between 303 and 3722.

The ideas underpinning the development of YJLD structures of service provision are theoretically compelling. Given the prevalence of mental health problems amongst the prison population there are undoubtedly significant numbers of young offenders in which mental health problems represent a prime determinant of their initial offending behaviour. Accurately indentifying such offenders and those with other 'vulnerabilities' which trigger offending behaviour, while effectively designing and providing therapeutic interventions tailored to their needs, provides the potential to significantly reduce future offending behaviour.

Given the limited resource data available to the economic evaluation no definitive comparative cost analysis can be undertaken between YJLD and comparator sites. However given the enormous resource implications imposed on both the public sector and society as a whole as a consequence of the failure to provide therapeutic interventions to appropriate clients at an early stage in their offending career then it is inconceivable that an effectively and targeted YJLD scheme could fail achieve acceptable levels of cost-effectiveness. The most unfortunate aspect of the poor design and control of the YJLD pilot sites is the failure to generate such incontrovertible evidence with regard to comparative cost or outcome. The potential value of YJLD schemes to the criminal justice system is such that it is imperative that subsequent evaluations of YJLD must not make similar mistakes.

Appendix D – Glossary

Child and Adolescent Service Use Schedule (CA-SUS) – questionnaire used part of the economic study within the YJLD evaluation to gather information on resource use. The questionnaire is administered by the researcher via either face to face or telephone interviews with the YOT/YJLD worker (case manager) on behalf of the young people who have had access to the service for a minimum of 12 weeks.

Comparator sites – the YOT areas selected in this evaluation to act as comparator for the YJLD sites on the basis of YOT family classifications.

Mental health outcome measures in the YJLD evaluation – the questionnaires and measures that seek to provide measurement of mental health in children and young people (up to 18 years old). Two mental health outcome measures are used: HoNOSCA and SQIfA.

- **HoNOSCA** stands for Health of the Nation Outcome Scales for Children and Adolescents (Gowers et al., 1999). This mental health assessment scale is accepted as a sensitive and valid measure of change amongst people with MH problems (Garralda et al., 2000) and has been previously used as part of YOT work. These scales measure behaviour, impairment, symptoms and social functioning. HoNOSCA is recommended by the National Service Framework (NSF) and the Outcome Reference Group, forming part of the mandatory mental health minimum data set (MHMDS) for England.
- **SQIfA** stands for Screening Interview Questionnaire for Adolescents (Kroll et al., 2002). SQIfA is a short mental health screening questionnaire interview for adolescents attached to ASSET to be completed by all YOT staff. ASSET is the standard assessment tool used by youth offending teams to assess all children and young people in contact with the youth justice system. It seeks to identify risk and protective factors and measures change over time (YJB website, August 2010).

Police National Computer (PNC) – the national database used by the police to record details of offences and offenders who have received an out-of-court or a court disposal. The research team will access the PNC data to track reoffending amongst young people going through intervention and comparator sites.

Re-offending outcome measures in the YJLD evaluation – (1) the actual (yes/no) rate of offending (presented as a percentage of the total number of young offenders in the cohort); (2) the frequency rate of offending (the number of proven offences per 100 offenders in the cohort); (3) the severity rate of offending (the number of proven serious offences per 100 offenders) and (4) time to re-offending (the number of days to first sanctioned offence).

Webshare - a live database used by YJLD practitioners to enter information on every young person going through the YJLD scheme, actions taken by any professional service in response to the young person's needs and criminal justice outcomes. Information from the Webshare was extracted on 24th August 2011.

Youth Crime Action Plan (YCAP) - developed by the previous government, is a cross departmental programme (led by the Home Office, the Department for Children, Schools and Families, and the Ministry of Justice) that seeks to tackle youth crime and anti-social behaviour and to reduce re-offending. It was first published in 2008, followed by the *Youth Crime Action Plan – one year on* in July 2009 (HM Government, 2009a). The YCAP reflects a triple track approach of enforcement where behaviour is unacceptable, nonnegotiable support and challenge to children and families where it is needed, and better and earlier prevention.

(YCAP) Triage – the triage service was implemented through the YCAP funded model. 69 YOTs were given funding to employ triage workers (also called prevention workers) who are typically based in the police custody suite and work with the police to identify vulnerable

young people who are first time entrants, with low gravity offences (1-3) and who have admitted to the offence. For example, Lewisham has implemented a triage service that integrates with the YJLD scheme. Triage workers aim to complete an initial assessment with young people using the SQIfA screening tool, and contribute to the police decision making process to take no further action.

Youth Justice Indicator – one of six justice indicators in the England Youth Justice Indicator set, which YOTs in England must report on to the YJB. The current evaluation is exploring 4 youth justice performance indicators: reoffending rates, first time entrant (FTE) rates, education employment and training (EET) and custody rates.

Youth Justice Liaison and Diversion (YJLD) - The YJLD initiative, funded by the Department of Health, aims to identify and address the needs of vulnerable young people who offend by working with criminal justice and mental health services in the community and in custody. The scheme's objective is to ensure that children and young people with mental health problems, speech and communication difficulties, learning disabilities and other problems get the help they need as soon as they enter the youth justice system. The aims of the scheme are to divert away from the Youth Justice System, where appropriate, as well as to divert towards more robust support *within* that system. Ultimately, the aim is to divert children who offend away from unnecessary custodial placements.

YJLD intervention – the term is used where a young person's identified need (through screening and assessment) is addressed either through referral into appropriate services or direct intervention offered by qualified YJLD staff.

YJLD clients – the term is used to define young people (YP) going through the YJLD scheme. This includes any YP that has a) been offered information, but did not engage; b) been offered information and engaged; c) been offered intervention and engaged; d) been offered intervention but did not engage; d) been screened but no issues identified; e) liaised with existing professionals on his behalf; f) been given reparation.

YJLD sites – the YOT areas where the YJLD scheme has been implemented, i.e. Halton & Warrington, Lewisham, Peterborough, Royal Borough of Kensington and Chelsea (RBKC), South Tees and Wolverhampton.

YJLD workers/practitioners – terms used interchangeably to define staff working on the YJLD scheme.

Youth Justice Management Information System (YJMIS) - a system for the YJB, YOTs, the secure estate and other agencies to collect, share and analyse youth justice management information since 2009. See www.wiringupyouthjustice.info/cms.cgi/site/projects/MIS/index.htm.