



Ministry  
of Justice

# **Local Adult Reoffending 1 April 2012 – 31 March 2013 England and Wales**

Ministry of Justice  
Statistics bulletin

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# Local Adult Re-offending

## Introduction

Following a consultation, in October 2011 the Ministry of Justice (MOJ) introduced a new measure of Proven Re-offending which provides consistent measures of re-offending at national and local levels<sup>1</sup>.

The local adult re-offending measure remains a National Offender Management Service (NOMS) performance indicator for Probation Trusts for the year 2013/14. Therefore, we will continue to publish this legacy measure to support Probation Trusts in assessing their performance.

This bulletin contains re-offending data at the following geographic levels:

- Regions within England and Wales
- Probation Trusts
- Local Authorities<sup>2</sup>

It covers re-offending in the period 1 April 2012 to 31 March 2013.

These statistics are available via the Ministry of Justice website:

[www.gov.uk/government/publications/local-adult-reoffending](http://www.gov.uk/government/publications/local-adult-reoffending)

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<sup>1</sup> For more information on the new measure of proven re-offending see [www.gov.uk/government/publications/proven-re-offending--2](http://www.gov.uk/government/publications/proven-re-offending--2). More information explaining the differences between these two measures is available on request. See contact details at end of bulletin.

<sup>2</sup> “Local authorities” in this report, are unitary authorities in single-tier areas, or upper tier authorities (e.g. county councils) in two-tier areas.

# Local Adult Re-offending

## Key points

All statements on increases or decreases in re-offending rates in this section refer to comparisons with rates that have been adjusted to control for changes in the characteristics of offenders on the probation caseload<sup>3</sup>. The latest re-offending results are compared to the adjusted rate based on 2007/08 which is hereafter referred to as the baseline. The 2007/08 results covered re-offending between 1 April 2007 to 31 March 2008 and are the earliest published data on this measure.

- Five regions had a statistically significant reduction in re-offending (East Midlands, London, North East, West Midlands and Yorkshire & Humberside)<sup>4</sup>.
- Seven Probation Trusts had a statistically significant increase in re-offending, whilst 14 Probation Trusts showed a statistically significant reduction in re-offending.
- Ten local authorities had a statistically significant increase in re-offending, whilst 48<sup>5</sup> local authorities showed a statistically significant reduction in re-offending.

Results for all regions, Probation Trusts and local authorities are available in Appendix A.

## Trends in re-offending by area

The re-offending rates of individual areas over time have been tracked to assess whether any areas have seen clear trends in re-offending rates since the start of the series in the 2007/08 baseline. This analysis focuses on areas where re-offending has been significantly higher or lower than predicted over four or more consecutive periods.

## Reductions in re-offending

At the regional level, London, North East, West Midlands, and Yorkshire & Humberside have had re-offending rates which were consistently lower than predicted over the four most recent periods.

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<sup>3</sup> See Appendix B for more information on the predicted rate, which variables have been controlled for and why it is important to control for changes in offender characteristics.

<sup>4</sup> Changes in re-offending performance are only reported where the changes are statistically significant (i.e. we are 95% confident that the change is a real one, and not due to random volatility in the datasets).

<sup>5</sup> This includes the Isles of Scilly whose re-offending rate is based on a very small cohort size.

Within the London region, Croydon, Havering, Newham, Southwark and Waltham Forest local authorities have had re-offending rates which were consistently lower than predicted.

Within the West Midlands region, Staffordshire and West Midlands, and Warwickshire Probation Trusts and Birmingham, Coventry, Dudley, Sandwell and Warwickshire local authorities have had re-offending rates which were consistently lower than predicted.

For the Yorkshire and Humberside region, South Yorkshire and West Yorkshire Probation Trusts and Bradford, Doncaster, Kirklees, Rotherham, and Sheffield local authorities have had re-offending rates which were consistently lower than predicted.

Nottinghamshire Probation Trust has had a re-offending rate which was consistently lower than predicted.

Gwynedd and The Isles of Scilly<sup>6</sup> local authorities had re-offending rates which were consistently lower than predicted.

### **Increases in re-offending**

Hertfordshire, Norfolk and Suffolk, and Surrey and Sussex Probation Trusts have had re-offending rates which were consistently higher than predicted.

Within Hertfordshire Probation Trust, Hertfordshire local authority has had a re-offending rate which was consistently higher than predicted.

Somerset, Carmarthenshire, City of Kingston upon Hull, and Hammersmith and Fulham local authorities have also had re-offending rates which were consistently higher than predicted.

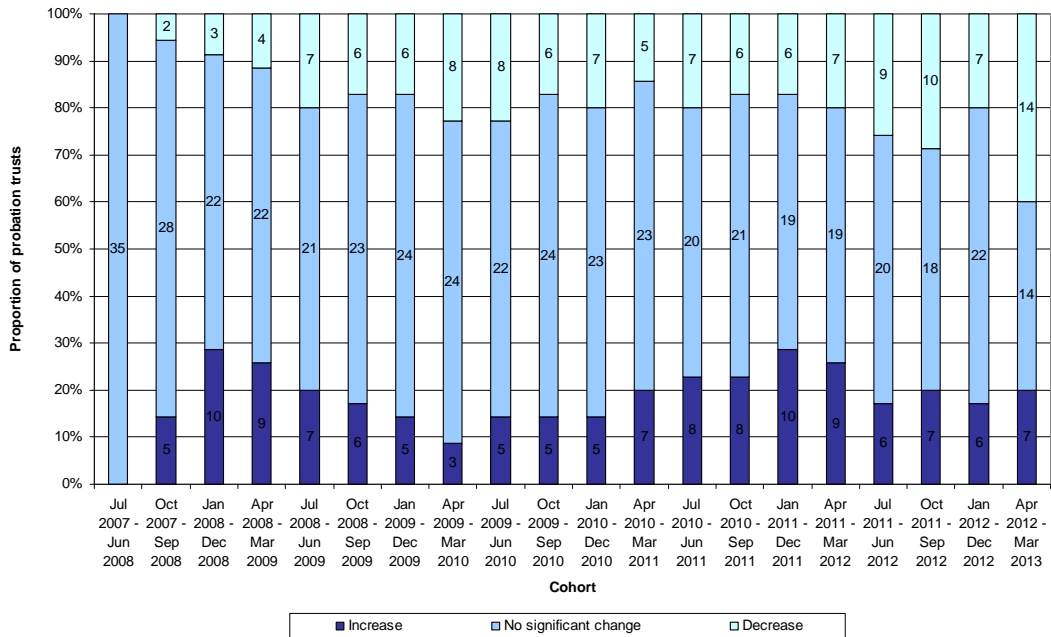
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<sup>6</sup> The re-offending rate for the Isles of Scilly is based on a very small cohort size.

### Trends since 2007/08

Chart 1 shows the proportion of Probation Trusts that have seen increases/decreases/no significant change over each of the 20 quarters since the baseline. For the most recent quarter, 20% of Trusts (7 Trusts) show an increase and 40% (14 Trusts) show a decrease<sup>7</sup>.

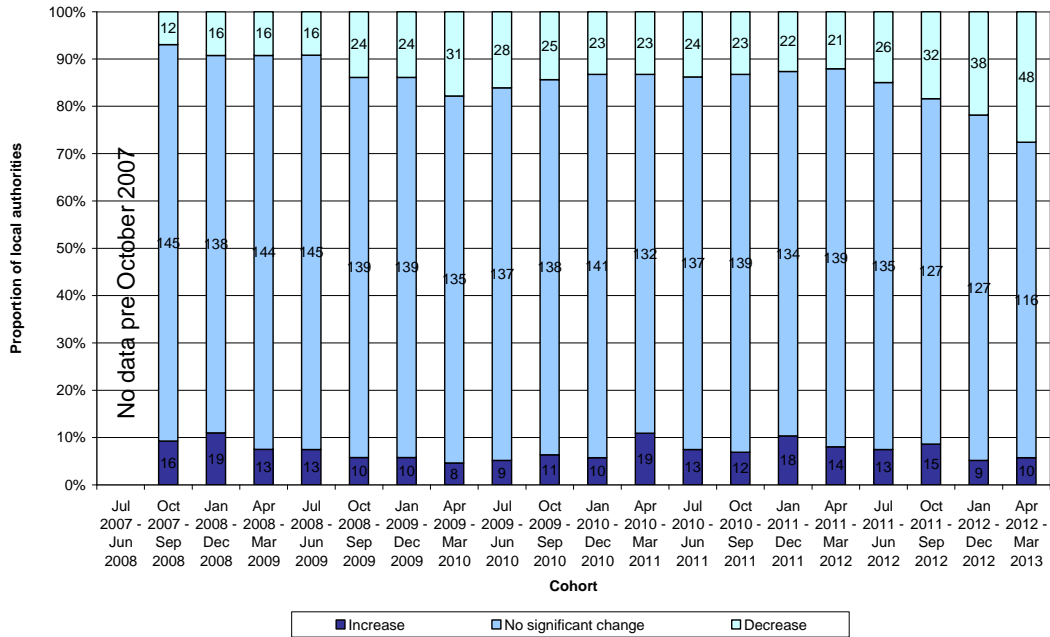
**Chart 1: Proportion of Probation Trusts with increases/decreases/no change in re-offending, July 2007 – March 2013**



<sup>7</sup> Note that these percentages should not be directly compared to those in reports published prior to 16 November 2010 which were based on the former 42 Probation Areas.

Chart 2 presents the same information for local authorities<sup>8</sup>. For the most recent quarter, the proportion showing an increase was 6% (10 local authorities) and the proportion showing a decrease was 28% (48 local authorities).

**Chart 2: Proportion of local authorities with increases/decreases/no change in re-offending, October 2007 – March 2013**



### Comparing re-offending rates between areas

Comparing changes in the actual rates of re-offending between areas does not ensure a like for like comparison as the mix of offenders being dealt with may vary across areas and over time.

In comparing reductions in re-offending between areas, it is important that comparisons are made on the basis of the reduction in re-offending after controlling for changes in the characteristics of offenders on the caseload and taking into account the size of the caseload in each area<sup>9</sup>.

<sup>8</sup> Data for periods prior to October 2007 cannot be broken down to the local authority level.

<sup>9</sup> Column titled '% difference from baseline' in data tables in Appendix A.

## Explanatory notes

### **Which offenders are included in the analysis?**

The local adult re-offending measure takes a snapshot of all offenders, aged 18 or over, who are under probation supervision at the end of a quarter, and combines 4 such snapshots together.

This means that the measure includes offenders who have been under supervision in the community (either on licence after release from custody or on a court order) for a range of time from 1 day to a number of years. However, the measure does not include offenders aged 22 or over who have been released from a custodial sentence of less than 1 year (as they do not receive probation supervision on release).

This also means that some offenders will be included in the sample more than once by combining 4 snapshots, as offenders can remain under probation supervision for a number of quarters.

### **Methodology for measuring re-offending**

The local adult re-offending measure counts the proportion of offenders who re-offend in a 3 month period, and compares this to the proportion expected to re-offend given their characteristics. The results of 4 snapshots are then combined to form a rolling 4 quarter average. Each quarterly update will include the latest available quarter, and remove the oldest quarter.

### **Why are the results being compared to 2007/08 results (the baseline)?**

The 2007/08 results were used to build the predictive rate model, which allow comparisons to be made across time, controlling for changes in the mix of offenders in the caseload. The 2007/08 results are also the first available for this measure. For more information on the predictive rate model please see Appendix B.

### **What counts as a re-offence?**

The local measure allows 3 months from each snapshot for re-offending to occur (with a further 3 months for offences to be proven by court conviction or caution). Analysis has shown that re-offending over 3 months is representative of re-offending over 12 months for most offences, but is not representative for more serious offences which take longer to work through the criminal justice system.

The measure includes recordable offences, as entered on the Police National Computer (PNC), which are proven by either court convictions or cautions.

## **The predicted rate**

The predicted rate is the proportion of offenders we would expect to re-offend given the known characteristics of the offenders in the snapshot and re-offending rates in the baseline period. More detail on the predicted rate, and the statistical model used to calculate it, is provided in Appendix B.

## **Assigning offenders to Probation Trusts and local authorities**

Offenders are assigned to a Probation Trust based on where they are recorded on each Trust's Caseload Management System. In a small number of cases (less than 1%), offenders cannot be assigned to a single Probation Trust as they are recorded under more than one Probation Trust at the end of a quarter. They are therefore classified as having an unknown Probation Trust, and only counted towards the England and Wales level data.

Offenders' postcode information is used to assign them to a local authority (98% to 99% of offenders can be assigned to a local authority). Those offenders that do not have any relevant address information are not matched to a local authority and are included under the heading of unknown local authority (shown at the end of Table 4).

A small proportion of offenders (roughly 1%) have a postcode that is in a local authority area outside the Probation Trust which supervises them.

## **Probation Trusts**

On 1 April 2010, 27 new Probation Trusts were established following a rigorous formal application process, resulting in all 42 former Probation Boards having been replaced by 35 Probation Trusts<sup>10</sup>.

As part of these changes, a number of former Probation Boards were involved in mergers to become Probation Trusts. This publication covers a reporting period (1 April 2012 to 31 March 2013) which was after the mergers came into effect.

For more information on the move from Probation Boards to Probation Trusts please see [www.opsi.gov.uk/si/si2010/uksi\\_20100195\\_en\\_1](http://www.opsi.gov.uk/si/si2010/uksi_20100195_en_1).

## **Data sources and quality**

The data presented in this bulletin are drawn from Probation Caseload Management systems and the Ministry of Justice extract of the PNC. Although care is taken when processing and analysing the returns, the detail collected is subject to the inaccuracies inherent in any large-scale recording system. While the figures shown have been checked as far as practicable, they should be regarded as approximate and, therefore, have been rounded to 2 decimal places.

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<sup>10</sup> The first 6 Probation Trusts were established from 1 April 2008 and a further 2 were established from 1 April 2009 under powers of the Offender Management Act 2007.



This bulletin covers all offenders who are on the probation caseload and are at risk of re-offending. Offenders who are recorded as being in custody at the end of each quarter are excluded from the analysis. However, offenders who have entered custody during this 3 month follow up period cannot be identified in the dataset and are, therefore, included in these figures.

### **Revisions policy**

The local adult re-offending results are not subject to routine revisions.

Whilst the PNC is a live system and the Ministry of Justice extract is updated on a weekly basis, the local adult re-offending results are produced using snapshots of this database at the end of each quarter. We do not, therefore, update the results to reflect later updates to the database.

Revisions will only be made in the case of methodological change (on which we would consult in advance) or errors in the dataset (which will be corrected at the first available opportunity). In both cases, any revisions would be clearly explained in the report and accompanying tables showing the old and revised data would be included.

## Contact points for further information

Current and previous editions of this publication are available for download at [www.gov.uk/government/publications/local-adult-reoffending](http://www.gov.uk/government/publications/local-adult-reoffending). Spreadsheet files of the tables contained in this document are also available for download from this address.

Reports are published on a quarterly basis. The next report will cover reoffending in the period 1 July 2012 to 30 June 2013.

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

Tel: 020 3334 3536

Email: [newsdesk@justice.gsi.gov.uk](mailto:newsdesk@justice.gsi.gov.uk)

Other enquiries about these statistics should be directed to:

Re-offending Statistics  
Ministry of Justice 7/B  
102 Petty France  
London SW1H 9AJ

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

General information about the official statistics system of the UK is available from [www.statistics.gov.uk](http://www.statistics.gov.uk).

## Appendix A – Main results

**Table 1: Local Adult Re-offending rates, all offenders on the probation caseload in England and Wales<sup>11,12</sup>**

Re-offending period covered	Cohort size (combining four quarters of probation caseload data)	Actual rate of re-offending	Predicted rate of re- offending	% difference from baseline
April 1 2007 to March 31 2008 ( <i>baseline period</i> )	685,873	9.82%	9.82%	0.00%
July 1 2007 to June 30 2008	690,049	9.84%	9.81%	0.31%
October 1 2007 to September 30 2008	692,330	9.88%	9.83%	0.56%
January 1 2008 to December 31 2008	691,588	9.95%	9.86%	<b>0.91%</b>
April 1 2008 to March 31 2009	691,638	9.98%	9.92%	0.57%
July 1 2008 to June 30 2009	691,517	9.93%	9.98%	-0.52%
October 1 2008 to September 30 2009	690,994	9.87%	10.02%	<b>-1.46%</b>
January 1 2009 to December 31 2009	691,261	9.82%	10.02%	<b>-2.03%</b>
April 1 2009 to March 31 2010	688,616	9.71%	10.00%	<b>-2.88%</b>
July 1 2009 to June 30 2010	683,540	9.70%	9.96%	<b>-2.60%</b>
October 1 2009 to September 30 2010	677,654	9.77%	9.91%	<b>-1.47%</b>
January 1 2010 to December 31 2010	671,716	9.75%	9.89%	<b>-1.34%</b>
April 1 2010 to March 31 2011	667,469	9.82%	9.86%	-0.39%
July 1 2010 to June 30 2011	663,340	9.81%	9.85%	-0.45%
October 1 2010 to September 30 2011	658,596	9.77%	9.84%	-0.70%
January 1 2011 to December 31 2011	652,735	9.84%	9.84%	-0.01%
April 1 2011 to March 31 2012	645,384	9.83%	9.82%	0.03%
July 1 2011 to June 30 2012	639,429	9.66%	9.81%	<b>-1.55%</b>
October 1 2011 to September 30 2012	632,396	9.54%	9.78%	<b>-2.48%</b>
January 1 2012 to December 31 2012	624,970	9.35%	9.72%	<b>-3.79%</b>
April 1 2012 to March 31 2013	616,252	9.18%	9.67%	<b>-5.05%</b>

<sup>11</sup> The number of offenders is the sum of the number of offenders from the 4 snapshots who could be matched to the PNC. Therefore, many offenders will be included more than once. For the purposes of measuring re-offending they are considered separately for each snapshot in which they are included. This number is not the number of offenders on the probation caseload at a point in time, as it reflects the aggregation of 4 quarters of data.

<sup>12</sup> Data in bold illustrate that the change in re-offending from the baseline is statistically significant.

**Table 2: Local Adult Re-offending rates, all offenders on licence under probation supervision, England and Wales**<sup>13,14</sup>

Re-offending period covered	Cohort size (combining four quarters of probation caseload data)	Actual rate of re-offending	Predicted rate of re- offending	% difference from baseline
April 1 2007 to March 31 2008 ( <i>baseline period</i> )	102,721	8.22%	8.22%	0.00%
July 1 2007 to June 30 2008	106,840	8.37%	8.24%	1.51%
October 1 2007 to September 30 2008	111,402	8.63%	8.28%	<b>4.24%</b>
January 1 2008 to December 31 2008	114,614	8.69%	8.24%	<b>5.45%</b>
April 1 2008 to March 31 2009	118,112	8.78%	8.24%	<b>6.50%</b>
July 1 2008 to June 30 2009	120,290	8.67%	8.16%	<b>6.18%</b>
October 1 2008 to September 30 2009	122,255	8.44%	8.06%	<b>4.71%</b>
January 1 2009 to December 31 2009	125,000	8.31%	7.95%	<b>4.60%</b>
April 1 2009 to March 31 2010	127,724	8.15%	7.84%	<b>4.07%</b>
July 1 2009 to June 30 2010	130,074	8.01%	7.72%	<b>3.75%</b>
October 1 2009 to September 30 2010	132,180	7.93%	7.61%	<b>4.19%</b>
January 1 2010 to December 31 2010	134,168	7.81%	7.52%	<b>3.82%</b>
April 1 2010 to March 31 2011	136,532	7.72%	7.47%	<b>3.29%</b>
July 1 2010 to June 30 2011	139,235	7.66%	7.42%	<b>3.23%</b>
October 1 2010 to September 30 2011	142,090	7.61%	7.36%	<b>3.43%</b>
January 1 2011 to December 31 2011	145,233	7.64%	7.34%	<b>4.06%</b>
April 1 2011 to March 31 2012	147,880	7.60%	7.26%	<b>4.66%</b>
July 1 2011 to June 30 2012	150,985	7.47%	7.23%	<b>3.36%</b>
October 1 2011 to September 30 2012	153,850	7.35%	7.20%	<b>2.08%</b>
January 1 2012 to December 31 2012	156,148	7.23%	7.14%	1.26%
April 1 2012 to March 31 2013	158,225	7.01%	7.06%	-0.73%

<sup>13</sup> The number of offenders is the sum of the number of offenders from the 4 snapshots who could be matched to the PNC. Therefore, many offenders will be included more than once. For the purposes of measuring re-offending they are considered separately for each snapshot in which they are included. This number is not the number of offenders on the probation caseload at a point in time, as it reflects the aggregation of 4 quarters of data.

<sup>14</sup> Data in bold illustrate that the change in re-offending from the baseline is statistically significant.

**Table 3: Local Adult Re-offending rates, all offenders on court orders under probation supervision, England and Wales<sup>15,16</sup>**

Re-offending period covered	Cohort size (combining four quarters of probation caseload data)	Actual rate of re-offending	Predicted rate of re- offending	% difference from baseline
April 1 2007 to March 31 2008 (baseline period)	583,152	10.10%	10.10%	0.00%
July 1 2007 to June 30 2008	583,209	10.11%	10.10%	0.14%
October 1 2007 to September 30 2008	580,928	10.12%	10.12%	-0.02%
January 1 2008 to December 31 2008	576,974	10.20%	10.18%	0.18%
April 1 2008 to March 31 2009	573,526	10.23%	10.27%	-0.41%
July 1 2008 to June 30 2009	571,227	10.19%	10.36%	<b>-1.64%</b>
October 1 2008 to September 30 2009	568,739	10.18%	10.44%	<b>-2.49%</b>
January 1 2009 to December 31 2009	566,261	10.15%	10.48%	<b>-3.14%</b>
April 1 2009 to March 31 2010	560,892	10.07%	10.50%	<b>-4.07%</b>
July 1 2009 to June 30 2010	553,466	10.10%	10.49%	<b>-3.70%</b>
October 1 2009 to September 30 2010	545,474	10.21%	10.47%	<b>-2.47%</b>
January 1 2010 to December 31 2010	537,548	10.24%	10.48%	<b>-2.27%</b>
April 1 2010 to March 31 2011	530,937	10.37%	10.48%	<b>-1.07%</b>
July 1 2010 to June 30 2011	524,105	10.38%	10.50%	<b>-1.15%</b>
October 1 2010 to September 30 2011	516,506	10.36%	10.52%	<b>-1.49%</b>
January 1 2011 to December 31 2011	507,502	10.47%	10.55%	-0.82%
April 1 2011 to March 31 2012	497,504	10.49%	10.59%	<b>-0.92%</b>
July 1 2011 to June 30 2012	488,444	10.34%	10.61%	<b>-2.58%</b>
October 1 2011 to September 30 2012	478,546	10.24%	10.61%	<b>-3.47%</b>
January 1 2012 to December 31 2012	468,822	10.06%	10.59%	<b>-4.93%</b>
April 1 2012 to March 31 2013	458,027	9.93%	10.57%	<b>-6.05%</b>

<sup>15</sup> The number of offenders is the sum of the number of offenders from the 4 snapshots who could be matched to the PNC. Therefore, many offenders will be included more than once. For the purposes of measuring re-offending they are considered separately for each snapshot in which they are included. This number is not the number of offenders on the probation caseload at a point in time, as it reflects the aggregation of 4 quarters of data.

<sup>16</sup> Data in bold illustrate that the change in re-offending from the baseline is statistically significant.

## Detailed tables

### **Hypothetical examples to illustrate how re-offending rates relate to numbers of re-offenders**

For an area with a caseload of 10,000 offenders:

A 10% re-offending rate means that 1,000 offenders (out of the 10,000) re-offended.

An 11% re-offending rate means that 1,100 offenders (out of the 10,000) re-offended.

An increase from the baseline of 10% (assuming predicted rate of 10%, and actual rate of 11%) for a caseload of 10,000 would mean that there were 100 re-offenders more than was predicted.

For an area with a caseload of 5,000 offenders:

A 10% re-offending rate means that 500 offenders (out of the 5,000) re-offended.

A 9.5% re-offending rate means that 475 offenders (out of the 5,000) re-offended.

A decrease from the baseline of five% (assuming predicted rate of 10%, and actual rate of 9.5%) for a caseload of 5,000 would mean that there were 25 re-offenders fewer than predicted.

**Table 4: Local Adult Re-offending rates for 1 April 2012 to 31 March 2013, at the Regional, Probation Trust and local authority level of disaggregation**

Where data in the ‘% difference from baseline’ column is in bold, this indicates that the change is statistically significant at the 95% level.

Data in this table have been formatted so that regional data are left aligned, Probation Trust data centre aligned, and local authority data right aligned in each cell to assist users in viewing the data (this data is also available in Excel format and is available from [www.gov.uk/government/publications/local-adult-reoffending](http://www.gov.uk/government/publications/local-adult-reoffending)).

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
East Midlands			49,035	8.28%	8.96%	<b>-7.54%</b>
	Derbyshire		10,282	7.21%	7.59%	-5.08%
		Derby	3,618	7.38%	7.81%	-5.51%
		Derbyshire	6,592	7.02%	7.52%	-6.66%
	Leicestershire		10,310	8.05%	8.00%	0.69%
		Leicester	5,393	8.47%	8.31%	1.93%
		Leicestershire	4,709	7.37%	7.69%	-4.24%
		Rutland	144	11.81%	5.31%	<b>122.18%</b>
	Lincolnshire		5,996	8.79%	9.17%	-4.11%

Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Lincolnshire	6,005	8.73%	9.14%	-4.58%
	Northamptonshire		8,058	7.27%	7.47%	-2.69%
		Northamptonshire	7,964	7.36%	7.51%	-1.99%
	Nottinghamshire		14,389	9.58%	11.37%	<b>-15.80%</b>
		Nottingham	6,592	9.44%	11.48%	<b>-17.81%</b>
		Nottinghamshire	7,678	9.56%	11.25%	<b>-15.05%</b>
East of England			52,532	9.24%	9.19%	0.59%
	Bedfordshire		6,042	7.99%	8.29%	-3.57%
		Bedford <sup>19</sup>	1,930	8.65%	8.66%	-0.03%
		Central <sup>19</sup> Bedfordshire	1,556	7.07%	7.57%	-6.62%
		Luton	2,573	8.05%	8.45%	-4.81%
	Cambridgeshire and Peterborough		8,037	8.91%	9.91%	<b>-10.14%</b>
		Cambridgeshire	4,489	8.62%	9.66%	<b>-10.73%</b>
		Peterborough	3,345	9.33%	10.19%	-8.50%



Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
	Essex		16,173	8.66%	9.22%	<b>-6.09%</b>
		Essex	11,871	8.58%	9.03%	-5.08%
		Southend-on-Sea	2,358	9.67%	10.32%	-6.27%
		Thurrock	1,907	7.76%	9.20%	<b>-15.60%</b>
	Hertfordshire		9,807	8.85%	7.88%	<b>12.35%</b>
		Hertfordshire	9,539	8.90%	7.91%	<b>12.47%</b>
	Norfolk and Suffolk		12,473	11.14%	10.15%	<b>9.68%</b>
		Norfolk	6,549	11.47%	10.77%	6.43%
		Suffolk	5,663	10.56%	9.46%	<b>11.61%</b>
London			94,263	7.74%	8.64%	<b>-10.40%</b>
		Barking and Dagenham	2,832	6.21%	8.84%	<b>-29.70%</b>
		Barnet	2,305	6.64%	7.33%	-9.51%
		Bexley	2,107	6.98%	7.81%	-10.68%

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Brent	3,668	8.78%	8.11%	8.22%
		Bromley	2,704	6.95%	8.07%	<b>-13.87%</b>
		Camden	2,113	9.23%	9.91%	-6.86%
		City of London	39	10.26%	7.69%	33.29%
		Croydon	4,869	7.80%	9.33%	<b>-16.35%</b>
		Ealing	3,733	8.49%	8.52%	-0.34%
		Enfield	3,281	6.92%	7.66%	-9.67%
		Greenwich	3,496	7.09%	8.49%	<b>-16.48%</b>
		Hackney	3,817	7.52%	8.48%	<b>-11.36%</b>
		Hammersmith and Fulham	2,173	12.75%	11.17%	<b>14.09%</b>
		Haringey	3,895	6.88%	8.44%	<b>-18.47%</b>
		Harrow	1,663	7.64%	7.75%	-1.49%
		Havering	1,978	6.72%	8.28%	<b>-18.76%</b>
		Hillingdon	2,798	7.86%	8.22%	-4.31%
		Hounslow	3,178	8.18%	9.26%	<b>-11.69%</b>

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Islington	2,840	10.00%	9.63%	3.81%
		Kensington and Chelsea	1,310	10.92%	10.18%	7.20%
		Kingston upon Thames	947	9.29%	9.48%	-2.00%
		Lambeth	4,861	7.32%	8.76%	<b>-16.38%</b>
		Lewisham	4,497	7.92%	8.81%	<b>-10.12%</b>
		Merton	1,838	8.60%	8.16%	5.33%
		Newham	5,109	6.83%	8.06%	<b>-15.26%</b>
		Redbridge	2,963	6.41%	8.01%	<b>-19.99%</b>
		Richmond upon Thames	992	7.56%	7.96%	-5.06%
		Southwark	4,013	6.13%	8.32%	<b>-26.34%</b>
		Sutton	1,650	7.88%	8.83%	-10.77%
		Tower Hamlets	3,490	8.34%	9.46%	<b>-11.87%</b>
		Waltham Forest	3,395	5.98%	7.60%	<b>-21.29%</b>
		Wandsworth	2,701	8.48%	8.71%	-2.62%

Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Westminster	1,718	8.67%	10.14%	<b>-14.48%</b>
North East			38,207	13.85%	14.75%	<b>-6.11%</b>
	Durham Tees Valley		18,534	14.18%	14.73%	-3.72%
		Darlington	1,676	12.71%	13.38%	-5.05%
		Durham	5,989	12.69%	12.69%	-0.03%
		Hartlepool	1,805	16.29%	17.05%	-4.45%
		Middlesbrough	3,740	17.43%	17.67%	-1.37%
		Redcar and Cleveland	2,317	13.42%	14.86%	-9.65%
		Stockton-on-Tees	2,937	12.97%	14.18%	-8.55%
	Northumbria		19,673	13.53%	14.76%	<b>-8.35%</b>
		Gateshead	2,764	13.06%	13.82%	-5.52%
		Newcastle-upon- Tyne	4,695	15.97%	16.62%	-3.91%

Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		North Tyneside	2,451	13.42%	13.76%	-2.42%
		Northumberland	2,990	10.64%	12.80%	<b>-16.92%</b>
		South Tyneside	2,122	12.72%	14.23%	-10.56%
		Sunderland	4,599	13.39%	15.37%	<b>-12.85%</b>
North West			96,390	9.26%	9.38%	-1.29%
	Cheshire		9,376	9.16%	8.45%	<b>8.38%</b>
		Cheshire East	2,654	8.93%	8.12%	9.92%
		Cheshire West and Chester	3,019	9.74%	8.82%	10.38%
		Halton	1,475	8.00%	7.66%	4.46%
		Warrington	2,164	9.01%	8.96%	0.57%
	Cumbria		5,322	10.54%	11.49%	<b>-8.25%</b>
		Cumbria	5,308	10.64%	11.52%	-7.63%
	Greater Manchester		40,643	9.04%	9.26%	-2.36%

Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Bolton	3,774	9.75%	9.46%	3.09%
		Bury	2,450	8.69%	8.83%	-1.50%
		Manchester	11,283	9.08%	9.63%	-5.63%
		Oldham	3,302	8.54%	9.08%	-5.94%
		Rochdale	3,282	7.98%	8.98%	-11.14%
		Salford	4,550	9.05%	9.13%	-0.85%
		Stockport	3,033	8.14%	8.36%	-2.54%
		Tameside	2,842	11.05%	10.13%	9.09%
		Trafford	2,352	7.99%	8.59%	-6.98%
		Wigan	3,434	9.41%	9.04%	3.99%
	Lancashire		20,654	10.68%	10.42%	2.50%
		Blackburn with Darwen	2,996	9.61%	9.72%	-1.08%
		Blackpool	3,808	11.24%	10.80%	4.08%
		Lancashire	13,945	10.74%	10.48%	2.47%

Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
	Merseyside		20,395	7.97%	8.45%	<b>-5.67%</b>
		Knowsley	2,284	5.95%	7.36%	<b>-19.08%</b>
		Liverpool	9,336	8.34%	8.69%	-4.03%
		St Helens	2,017	8.03%	8.64%	-6.99%
		Sefton	2,869	6.94%	7.54%	-8.02%
		Wirral	3,871	8.94%	9.04%	-1.09%
South East			67,990	9.29%	9.24%	0.53%
	Hampshire		16,340	9.99%	10.49%	<b>-4.83%</b>
		Hampshire	8,531	9.24%	9.89%	-6.58%
		Isle of Wight	1,401	12.06%	11.07%	9.01%
		Portsmouth	2,388	12.23%	12.20%	0.21%
		Southampton	3,747	9.05%	10.40%	<b>-13.03%</b>
	Kent		16,304	9.27%	8.61%	<b>7.70%</b>
		Kent	13,202	9.10%	8.51%	<b>6.98%</b>
		Medway	3,098	9.39%	9.06%	3.70%

Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
	Surrey and Sussex		17,929	9.31%	8.81%	<b>5.69%</b>
		Brighton and Hove	2,919	10.00%	9.50%	5.35%
		East Sussex	4,089	8.56%	8.35%	2.56%
		Surrey	6,122	8.71%	8.61%	1.08%
		West Sussex	4,909	9.96%	8.81%	<b>13.06%</b>
	Thames Valley		17,417	8.63%	9.10%	<b>-5.17%</b>
		Bracknell Forest	849	7.89%	8.55%	-7.73%
		Buckinghamshire	2,896	6.91%	8.04%	<b>-14.10%</b>
		Milton Keynes	2,431	9.87%	9.73%	1.50%
		Oxfordshire	3,619	9.12%	9.81%	-7.08%
		Reading	2,244	8.78%	9.71%	-9.59%
		Slough	2,432	8.63%	8.42%	2.54%
		West Berkshire	1,000	9.30%	10.08%	-7.75%
		Windsor and Maidenhead	1,103	7.80%	8.27%	-5.70%



Local Adult Reoffending – 1 April 2012 – 31 March 2013

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Wokingham	762	7.35%	7.59%	-3.16%
South West			41,000	9.36%	9.40%	-0.38%
	Avon and Somerset		16,696	10.35%	10.08%	2.64%
		Bath and N.E. Somerset	1,373	7.65%	9.64%	<b>-20.67%</b>
		City of Bristol	7,644	10.78%	10.59%	1.82%
		North Somerset	1,623	9.55%	9.65%	-1.03%
		Somerset	3,973	11.73%	10.51%	<b>11.57%</b>
		South Gloucestershire	1,874	8.43%	8.01%	5.23%
	Devon and Cornwall		10,618	7.94%	8.67%	<b>-8.45%</b>
		Cornwall	2,810	6.51%	7.80%	<b>-16.48%</b>
		Devon	3,552	7.46%	8.45%	<b>-11.66%</b>
		<i>Isles of Scilly</i> <sup>20</sup>	2	*	*	*
		Plymouth	2,733	9.92%	9.46%	4.87%

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Torbay	1,522	8.02%	9.52%	-15.80%
	Dorset		4,699	8.24%	8.71%	-5.47%
		Bournemouth	2,026	8.69%	9.09%	-4.48%
		Dorset	1,845	7.32%	7.73%	-5.31%
		Poole	882	8.84%	9.80%	-9.75%
	Gloucestershire		4,520	8.98%	9.56%	-6.02%
		Gloucestershire	4,473	8.94%	9.55%	-6.39%
	Wiltshire		4,467	10.63%	9.13%	<b>16.47%</b>
		Swindon	1,826	11.94%	10.06%	<b>18.67%</b>
		Wiltshire	2,512	9.71%	8.51%	14.10%
Wales			40,808	10.49%	10.58%	-0.85%
		Blaenau Gwent	1,071	10.55%	10.95%	-3.67%
		Bridgend	2,244	9.71%	9.57%	1.48%
		Caerphilly	1,866	9.70%	9.83%	-1.34%
		Cardiff	6,622	11.05%	11.39%	-2.91%

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Carmarthenshire	2,014	13.11%	11.45%	<b>14.48%</b>
		Ceredigion	498	9.64%	9.15%	5.35%
		Conwy	1,247	8.66%	10.23%	-15.31%
		Denbighshire	1,143	7.79%	9.58%	<b>-18.70%</b>
		Flintshire	1,453	8.81%	9.28%	-5.07%
		Gwynedd	1,402	9.13%	11.23%	<b>-18.70%</b>
		Isle of Anglesey	737	10.58%	9.95%	6.41%
		Merthyr Tydfil	1,125	10.22%	10.34%	-1.09%
		Monmouthshire	593	13.32%	10.84%	22.92%
		Neath Port Talbot	1,709	6.55%	8.62%	<b>-24.01%</b>
		Newport	2,620	13.51%	12.82%	5.35%
		Pembrokeshire	1,025	10.73%	10.42%	3.02%
		Powys	1,105	9.23%	9.91%	-6.88%
		Rhondda, Cynon, Taff	3,849	9.90%	9.47%	4.51%
		Swansea	3,445	9.84%	10.30%	-4.42%

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
		Torfaen	970	12.58%	10.82%	16.24%
		The Vale of Glamorgan	1,593	11.11%	10.85%	2.36%
		Wrexham	2,225	11.69%	11.60%	0.73%
West Midlands			67,760	7.40%	8.53%	<b>-13.17%</b>
	Staffordshire and West Midlands		53,216	6.96%	8.27%	<b>-15.76%</b>
		Birmingham	18,799	6.63%	8.01%	<b>-17.17%</b>
		Coventry	4,871	6.92%	8.86%	<b>-21.88%</b>
		Dudley	3,081	5.39%	7.35%	<b>-26.70%</b>
		Sandwell	4,721	5.30%	7.34%	<b>-27.82%</b>
		Solihull	1,792	6.92%	8.00%	-13.53%
		Staffordshire	7,530	7.34%	7.69%	-4.47%
		Stoke-on-Trent	4,328	9.94%	10.08%	-1.40%
		Walsall	3,715	7.35%	9.02%	<b>-18.56%</b>
		Wolverhampton	3,798	6.58%	8.59%	<b>-23.39%</b>

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
	Warwickshire		4,505	7.66%	9.32%	<b>-17.85%</b>
		Warwickshire	4,507	7.81%	9.29%	<b>-15.93%</b>
	West Mercia		10,039	9.61%	9.54%	0.79%
		Herefordshire	1,442	11.37%	10.54%	7.85%
		Shropshire	1,738	7.48%	8.93%	<b>-16.24%</b>
		Telford and Wrekin	1,496	7.62%	8.87%	-14.06%
		Worcestershire	5,437	10.04%	9.51%	5.60%
Yorkshire and Humberside			65,113	9.83%	10.69%	<b>-8.05%</b>
	Humberside		11,580	11.45%	10.78%	<b>6.25%</b>
		East Riding of Yorkshire	2,170	8.71%	8.77%	-0.71%
		City of Kingston upon Hull	4,644	12.94%	11.55%	<b>12.05%</b>
		North East Lincolnshire	2,530	12.89%	12.23%	5.36%
		North Lincolnshire	2,210	9.59%	9.65%	-0.57%

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
	York and North Yorkshire		6,434	10.04%	10.74%	-6.52%
		North Yorkshire	4,545	8.93%	10.03%	<b>-10.95%</b>
		York	1,881	12.60%	12.38%	1.77%
	South Yorkshire		16,916	9.94%	11.39%	<b>-12.77%</b>
		Barnsley	3,004	10.49%	10.69%	-1.88%
		Doncaster	4,420	10.66%	12.27%	<b>-13.14%</b>
		Rotherham	2,915	8.75%	10.46%	<b>-16.38%</b>
		Sheffield	6,330	9.59%	11.47%	<b>-16.38%</b>
	West Yorkshire		30,183	9.11%	10.26%	<b>-11.23%</b>
		Bradford	7,531	8.42%	9.88%	<b>-14.81%</b>
		Calderdale	2,390	8.70%	10.34%	<b>-15.84%</b>
		Kirklees	4,755	7.91%	9.65%	<b>-18.09%</b>
		Leeds	11,620	9.91%	10.69%	<b>-7.26%</b>
		Wakefield	3,829	9.66%	10.40%	-7.10%

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>17</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>18</sup>
	Unknown Probation Trust		3,154	8.69%	10.56%	<b>-17.75%</b>
		Unknown local authority	7,674	11.78%	10.94%	<b>7.65%</b>

<sup>17</sup> Note that data will not exactly aggregate from the local authority level to the Probation Trust level, as there are a small (roughly 1%) number of offenders who could not be assigned to a local authority as they have no postcode data. There are also a small (again roughly 1%) number of offenders whose postcode is in a local authority which is not in the probation trust where they are on the caseload.

<sup>18</sup> Data in bold illustrate that the change in re-offending from the baseline is statistically significant.

<sup>19</sup> Formerly Bedford and Central Bedfordshire were both part of Bedfordshire Local Authority.

<sup>20</sup> Data for the Isles of Scilly are based on only 2 offenders and have only been included for completeness in covering all Local Area Agreements. The actual and predicted rates have been removed as they are unreliable for interpretation due to the small number of offenders.

## Appendix B – Explanation of the Predicted Rate and Statistical Significance

### Introduction to the predicted rate

The characteristics of offenders are likely to be systematically different over time, and the Criminal Justice System aims to target particular sentences to offenders with the greatest likelihood to benefit most from that type. It is, therefore, important to note that one can neither reach firm conclusions about changes in rates over time, nor about the relative effectiveness of different sentence types, from actual re-offending rates.

The Ministry of Justice has used as a basis for this local re-offending predicted model, the work done for the National Statistics on re-offending.

Predicted or expected (yes/no) rates (see Lloyd et al., 1994, for a discussion) are used to take account of some of the differences in characteristics of offenders. Accordingly they can give a more meaningful measure of the change that has occurred in the rate of re-offending than can be obtained using the actual (yes/no) rates. If the composition of the groups of offenders being compared differs significantly over a time period, so that the type of offenders in one rolling 4 quarter dataset is inherently more (or less) likely to re-offend, this may result in a spurious rise or fall in the actual (yes/no) rates even when there may be no 'real' difference for similar offenders over that time. Hence the actual (yes/no) rates should be compared with the expected rates using a model based on data from an earlier period (baseline). Changes in re-offending rates should be measured by comparing the actual rate with the rate that would be expected given this group of offenders.

### Statistical model

The local adult re-offending statistical model is an adaption of the 2005 logistic regression model as outlined above and includes a range of offender characteristics available on the PNC, such as age, gender, offence group and criminal history. However, research has shown that other factors, for which data on these samples are not available, such as drug and alcohol use, employment, accommodation and marital background are likely to be significantly related to re-offending (see, for example, May, C. 1999).

The logistic regression model behind the local adult re-offending predicted rate provides a probability of re-offending for each offender and identifies the statistically significant set of variables that are related to re-offending. Aggregated predicted (yes/no) rates are also only valid for terms included in the final model. Any predicted rates for groups of offenders that have a common characteristic that is not in the final model (e.g. employment status or substance misuse) can suffer from statistical biases and are, therefore, unreliable.

For the local adult re-offending model additional developments were included to ensure that the predicted rate model was more robust against changes in the number of offenders, and that interaction terms and non-



linear terms were included where appropriate. The final decision for inclusion or exclusion of particular variables was heavily influenced by their statistical significance (typically  $p < 0.01$ ). The model coefficients, their exponents and significance values can be found in Table 5.

The model has been peer reviewed by an academic statistician.

**Table 5: List of variables in the logistic regression model applied to the 2007/08 data and their respective coefficients**

Variables	Logistic coefficient	Exponent of coefficient	Significance
<b>Constant</b>	-1.340	0.085	<0.001
<b>Age band</b>			
18 - 20		<i>Reference category</i>	
21 - 24	-0.555	0.574	<0.001
25 - 29	-0.883	0.414	<0.001
30 - 34	-1.065	0.345	<0.001
35 - 39	-1.079	0.340	<0.001
40 - 49	-1.267	0.282	<0.001
50+	-1.429	0.239	<0.001
<b>Gender</b>			
Male		<i>Reference category</i>	
Female	-0.068	0.935	<0.001
<b>General criminal career variables</b>			
Time on caseload (days)	0.000	1.000	0.380
Time on caseload (inverse)	0.143	1.154	<0.001
Copas rate	0.854	2.349	<0.001
Copas rate (exponential)	-0.543	0.581	<0.001
Previous offences (linear)	-0.004	0.996	<0.001
Previous offences (log)	0.147	1.159	<0.001
Previous custodial sentences (linear)	0.019	1.019	<0.001
Previous custodial sentences (log)	0.198	1.219	<0.001
One or more previous serious offences	-0.082	0.922	<0.001
<b>Length of criminal career</b>			
Less than 1 year		<i>Reference category</i>	
1 year	0.109	1.115	0.001
2 years	0.105	1.111	0.011
3 years	0.082	1.086	0.013
4 years	0.080	1.084	0.314
5 years	0.033	1.033	0.283
6-10 years	0.032	1.033	0.998
11-15 years	0.000	1.000	0.156
16-20 years	-0.053	0.948	0.002
21-25 years	-0.128	0.880	0.001
26-30 years	-0.147	0.863	<0.001
30+ years	-0.298	0.742	<0.001
<b>Index offence</b>			
Violence (non serious)		<i>Reference category</i>	
Violence (serious)	-0.464	0.629	0.004
Robbery	-0.113	0.893	<0.001
Public Order	0.131	1.140	<0.001
Sexual	-0.206	0.814	<0.001
Sexual Child	-0.608	0.545	<0.001
Domestic Burglary	0.185	1.204	<0.001
Other Burglary	0.278	1.320	<0.001
Theft	0.508	1.661	<0.001
Handling	0.193	1.213	<0.001
Fraud/Forgery	-0.116	0.890	<0.001
Absconding Bail Offence	0.258	1.294	<0.001
Taking and Driving Away	0.187	1.206	<0.001
Theft from Vehicles	0.369	1.446	0.042
Motoring Offence	0.040	1.041	<0.001
Drink Driving	-0.141	0.868	<0.001
Criminal Malicious Damage	0.172	1.188	<0.001
Drugs Import/Export/Supply	-0.237	0.789	0.305
Drugs possession/Small Scale Supply	0.022	1.022	<0.001
Other	0.166	1.181	<0.001
Breach	0.244	1.277	<0.001
<b>Ethnicity</b>			
White		<i>Reference category</i>	
Not Recorded	-0.329	0.720	<0.001
Black	0.060	1.061	0.874
Asian	0.004	1.004	0.531
Other	0.038	1.038	<0.001
<b>Appearances in previous cohorts</b>			
No previous appearances		<i>Reference category</i>	
One previous appearance	-0.026	0.974	<0.001
Two previous appearances	-0.154	0.858	<0.001
Three previous appearances	-0.224	0.799	<0.001
<b>Reoffences in previous cohorts</b>			
No reoffences		<i>Reference category</i>	
One reoffence	0.448	1.566	<0.001
Two reoffences	0.736	2.088	<0.001
Three reoffences	0.973	2.647	<0.001
<b>Reoffended in most recent cohort</b>	0.225	1.253	0.001

Variables	Logistic coefficient	Exponent of coefficient	Significance
<b>Previous offences</b>			
Total number of previous violence offences	-0.006	0.994	<0.001
Total number of previous public order offences	0.033	1.033	<0.001
Total number of previous theft offences	0.011	1.011	<0.001
Total number of previous handling offences	-0.012	0.988	<0.001
Total number of previous absconding offences	0.016	1.016	0.015
Total number of previous theft from vehicle offences	0.007	1.007	0.039
Total number of previous drink driving offences	0.026	1.026	<0.001
Total number of previous criminal damage offences	0.009	1.009	<0.001
Total number of previous drugs (possession/small-scale supply) offences	0.010	1.010	<0.001
One or more previous sexual offences	0.121	1.129	<0.001
<b>Area</b>			
London		<i>Reference category</i>	
Avon and Somerset	-0.092	0.912	0.006
Bedfordshire	-0.144	0.866	0.439
Cambridgeshire	-0.030	0.970	0.010
Cheshire	-0.097	0.908	<0.001
Teesside	0.191	1.211	0.098
Cumbria	0.070	1.072	<0.001
Derbyshire	-0.233	0.792	<0.001
Devon and Cornwall	-0.153	0.858	0.006
Dorset	-0.132	0.877	0.135
Durham	0.055	1.057	0.007
Essex	-0.080	0.923	0.104
Gloucestershire	-0.080	0.923	0.166
Hampshire	-0.040	0.961	0.005
West Mercia	-0.100	0.904	<0.001
Hertfordshire	-0.163	0.849	0.079
Humberside	-0.061	0.941	<0.001
Kent	-0.151	0.860	0.378
Lancashire	-0.023	0.977	<0.001
Leicestershire	-0.242	0.785	0.019
Lincolnshire	-0.111	0.895	<0.001
Greater Manchester	-0.175	0.840	<0.001
Merseyside	-0.163	0.849	0.618
Norfolk	-0.021	0.979	0.007
Northamptonshire	-0.125	0.882	<0.001
Northumbria	0.120	1.128	0.021
Nottinghamshire	0.069	1.071	0.007
Thames Valley	-0.077	0.926	0.001
Staffordshire	-0.112	0.894	0.019
Suffolk	-0.116	0.891	0.004
Surrey	-0.146	0.864	<0.001
Sussex	-0.165	0.848	0.469
Warwickshire	-0.037	0.964	<0.001
West Midlands	-0.095	0.909	<0.001
Wiltshire	-0.217	0.805	0.162
North Yorkshire	-0.060	0.942	0.165
South Yorkshire	0.038	1.039	0.016
West Yorkshire	-0.056	0.946	0.154
Dyfed-Powys	-0.074	0.929	0.323
Gwent	-0.038	0.962	0.359
North Wales	0.036	1.037	0.590
South Wales	-0.015	0.985	0.439
Unknown area	0.037	1.037	<0.001
<b>Type of sentence</b>			
Licence		<i>Reference category</i>	
Community order	0.273	1.314	<0.001
<b>Interactions between sentence type and age</b>			
Community order and aged 18-20		<i>Reference category</i>	
Community order and aged 21 - 24	0.279	1.322	<0.001
Community order and aged 25 - 29	0.488	1.630	<0.001
Community order and aged 30 - 34	0.649	1.913	<0.001
Community order and aged 35 - 39	0.621	1.861	<0.001
Community order and aged 40 - 49	0.795	2.214	<0.001
Community order and aged 50+	0.835	2.306	0.002
<b>Interactions between sentence type and criminal career variables</b>			
Community order * Time on caseload (inverse)	0.603	1.827	<0.001
Community order * previous drink driving offences	-0.053	0.949	<0.001
Community order * previous custodial sentences (log)	-0.159	0.853	<0.001
<b>Interactions between sentence type and appearances in previous cohorts</b>			
Community order and one previous appearance	-0.213	0.809	<0.001
Community order and two previous appearances	-0.281	0.755	<0.001
Community order and three previous appearances	-0.327	0.721	<0.001
Community order and reoffended in most recent cohort	0.188	1.207	<0.001

### **Statistical significance**

Testing for statistical significance allows us to determine whether a change between 2 datasets is likely to be due to a real change in performance, or is just due to random volatility in the data.

For the local re-offending measure we test for statistical significance such that we are 95% confident that any change we observe that meets our test for statistical significance is 'real'.

## References

**Hosmer, D. and Lemeshow S. (2000)** Applied Logistic Regression (2<sup>nd</sup> Ed). John Wiley & Sons: New York

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