



Ministry of  
**JUSTICE**

# **Local Adult Reoffending 1 January 2010 – 31 December 2010 England and Wales**

Ministry of Justice  
Statistics bulletin

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# Local Adult Re-offending

## Introduction

Local adult re-offending data has been developed to provide more timely performance data on trends in re-offending, and to provide insight into re-offending at the regional and local levels.

The key uses of this data are to help local practitioners understand progress in reducing re-offending and to provide key outcome data to assist in assessing probation trust performance.

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

- England and Wales as a whole
- Regions within England and Wales
- Probation Trusts
- Local Authorities<sup>1</sup>.

It covers re-offending in the period 1 January 2010 to 31 December 2010.

These statistics are published on a quarterly basis, and are available via the Ministry of Justice website:

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

The re-offending data in this bulletin are based on a different methodology and timescale to the annual National Statistics on adult re-offending:

[www.justice.gov.uk/publications/reoffendingofadults.htm](http://www.justice.gov.uk/publications/reoffendingofadults.htm)

Appendix B gives details and reasons for the main differences in the measures.

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<sup>1</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>2</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.

- The three month re-offending rate of all offenders on the probation caseload in England and Wales who were at risk of re-offending during the period 1 January 2010 to 31 December 2010 was 9.75 per cent. This was a statistically significant decrease of 1.34 per cent compared to the 2007/08 baseline.
- The North West and South West Regions had a statistically significant increase in re-offending compared to the baseline. Three Regions had a statistically significant reduction in re-offending (London, West Midlands and Yorkshire & Humberside)<sup>3</sup>.
- Five Probation Trusts<sup>4</sup> had a statistically significant increase in re-offending, whilst seven Probation Trusts showed a statistically significant reduction in re-offending.
- Ten local authorities had a statistically significant increase in re-offending, whilst twenty three<sup>5</sup> local authorities showed a statistically significant reduction in re-offending.
- Re-offending by offenders serving a court order showed a statistically significant reduction of 2.27 per cent compared to the baseline.
- Re-offending by offenders on licence following a custodial sentence showed a statistically significant increase of 3.82 per cent compared

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<sup>2</sup> See Appendix C for more information on the predicted rate, what variables we control for and why it is important to control for changes in offender characteristics.

<sup>3</sup> Changes in re-offending performance are only reported where the changes are statistically significant (i.e. we are 95 per cent confident that the change is a real one, and not due to random volatility in the datasets).

<sup>4</sup> This report includes re-offending for the 9 month period since Probation Trusts were created in April 2010. Most Trusts are equivalent to the old Probation Areas, however some Areas have merged, resulting in a total of 35 Trusts (previously there were 42 Probation Areas). This publication and all future local re-offending publications will no longer report on the old Probation Areas.

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

to the baseline. The actual rate of re-offending by offenders on license remained lower than for offenders on court orders under probation supervision (7.81 per cent compared to 10.24 per cent).

- The unadjusted rate of re-offending for offenders on the probation caseload in the period 1 January 2010 to 31 December 2010 was 0.07<sup>6</sup> percentage points lower than re-offending in the baseline period 1 April 2007 to 31 March 2008, and 0.01<sup>6</sup> percentage points lower than re-offending in the previous quarter (1 October 2009 to 30 September 2010).

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

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<sup>6</sup> This may not match with the difference that can be calculated from Table 1 in Appendix A because the numbers in Table 1 are rounded to two decimal points.

## **Trends in re-offending by area**

The re-offending rates of individual areas over time has 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, West Midlands, and Yorkshire & Humberside have had re-offending rates which were consistently lower than predicted over the four most recent periods.

Within the West Midlands region, Staffordshire and West Midlands Probation Trust and Birmingham, Sandwell, Solihull, and Staffordshire 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 the Barnsley, Bradford, Rotherham, and Sheffield local authorities have experienced re-offending rates which are also consistently lower than predicted.

Nottinghamshire Probation Trust has had four consecutive quarters of consistently lower than predicted re-offending rates, and, within Nottinghamshire Probation Trust, Nottingham local authority has had consistently lower than predicted rates.

The Isles of Scilly<sup>7</sup>, Rochdale, and Northumberland local authorities have seen consistently lower than predicted rates.

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

Hertfordshire, Merseyside and Kent Probation Trusts have had re-offending rates which are consistently higher than predicted.

Within Hertfordshire Probation Trust, Hertfordshire local authority has experienced re-offending rates which are also consistently higher than predicted.

Within Merseyside Probation Trust, Wirral local authority has had re-offending rates consistently higher than predicted.

Within Kent Probation Trust, Kent and Medway local authorities have had consistently higher than predicted re-offending rates.

Wrexham local authority has also had re-offending rates consistently higher than predicted.

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<sup>7</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 ten quarters since the baseline. For the most recent quarter fourteen per cent of Trusts (five Trusts) show an increase and twenty per cent (seven Trusts) show a decrease. 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 forty two Probation Areas.

**Chart 1: Proportion of Probation Trusts with increases/decreases/no change in re-offending, July 2007 – December 2010**

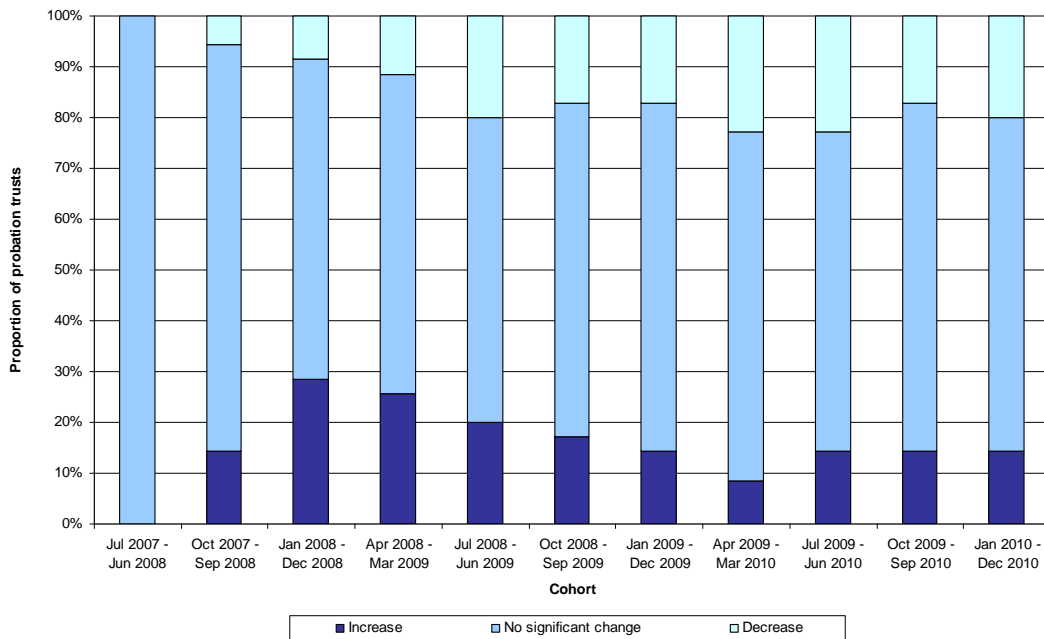
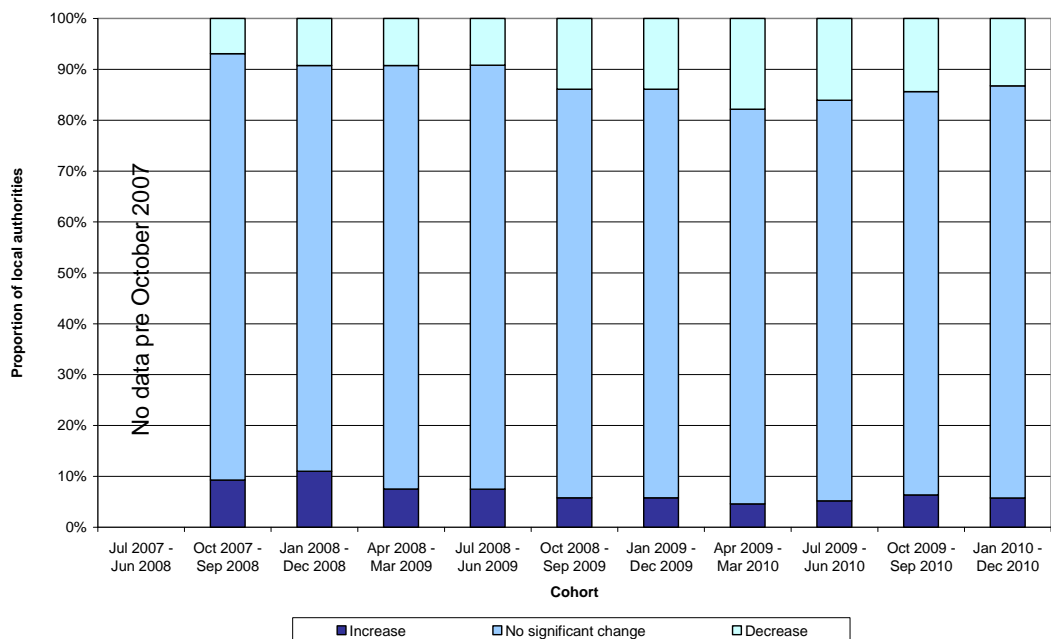


Chart 2 presents the same information for local authorities<sup>8</sup>. For the most recent quarter the proportion showing an increase was six per cent (ten local authorities) and the proportion showing a decrease thirteen per cent (twenty three local authorities).

**Chart 2: Proportion of local authorities with increases/decreases/no change in re-offending, October 2007 – December 2010**



### 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.

### **Future reports**

This is the tenth of a series of quarterly reports which monitors local adult re-offending. The previous report was published on 22 February 2011.

This measure is based on combining four quarters of data to give a rolling four quarter report. Each quarter, the latest quarter of data is added, and the oldest removed.

This report covers re-offending in the period 1 January 2010 to 31 December 2010. These results are compared to the baseline which covered re-offending in the period 1 April 2007 to 31 March 2008.

The next report will be published on 16 August 2011 and will cover re-offending in the period 1 April 2010 to 31 March 2011.



## 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 four 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 one 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 one 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 four snapshots, as offenders can remain under probation supervision for a number of quarters.

### **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 C.

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

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

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

The local measure allows three months from each snapshot for re-offending to occur (with a further three months for offences to be proven by court conviction or caution).

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 C.

### **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 per cent), offenders cannot be assigned to a 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 (98-99 per cent 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 per cent) have a postcode that is in a local authority area outside the Probation Trust which supervises them.

### **Probation Trusts**

On 1 April 2010, 29 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 October 2009 to 30 September 2010) 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)

### **Differences from the National Statistics on adult re-offending, and other local measures of offending**

This measure of local adult re-offending has been developed primarily as a more timely source of data on re-offending, and to provide information at the regional and local level.

As such, this measure is substantially different from the National Statistics approach. This reflects changes needed for more rapid reporting and to enable statistically robust analysis at the lower levels of disaggregation.

These differences, and differences to other local measures of offending are covered in detail in Appendix B.

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

### **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 two decimal places.

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 three 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 Police National Computer 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.justice.gov.uk/publications//local-adult-reoffending.htm](http://www.justice.gov.uk/publications//local-adult-reoffending.htm). 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 April 2010 to 31 March 2011 and will be published on 16 August 2011.

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: 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 (baseline period)	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>

<sup>11</sup> The number of offenders is the sum of the number of offenders from the four snapshots who could be matched to PNC. Therefore many offenders will be included more than once. For the purposes of measuring reoffending 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 four quarters of data.

<sup>12</sup> Data in bold illustrates that the change in reoffending from the baseline is statistically significant.

**Table 2: 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 (baseline period)	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>

<sup>13</sup> The number of offenders is the sum of the number of offenders from the four snapshots who could be matched to 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 four quarters of data.

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

**Table 3: 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 <i>(baseline period)</i>	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>

<sup>15</sup> The number of offenders is the sum of the number of offenders from the four snapshots who could be matched to 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 four quarters of data.

<sup>16</sup> Data in bold illustrates 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 per cent re-offending rate means that 1,000 offenders (out of the 10,000) re-offended.

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

An increase from the baseline of 10 per cent (assuming predicted rate of 10 per cent, and actual rate of 11 per cent) 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 5000 offenders:

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

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

A decrease from the baseline of 5 per cent (assuming predicted rate of 10 per cent, and actual rate of 9.5 per cent) for a caseload of 5000 would mean that there were 25 re-offenders fewer than predicted.



**Table 4: Local adult re-offending rates for 1 January 2010 to 31 December 2010, 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 per cent level.

Data in this table has been formatted so that regional data is 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 <http://www.justice.gov.uk/publications/local-adult-reoffending.htm>).

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
East Midlands			49,788	9.16%	9.26%	-1.08%
	Derbyshire		10,871	8.41%	7.81%	<b>7.60%</b>
		Derby	3,647	8.47%	7.98%	6.14%
		Derbyshire	7,118	8.37%	7.71%	8.66%
	Leicestershire		10,343	7.94%	8.01%	-0.86%
		Leicester	5,483	8.19%	8.20%	-0.18%
		Leicestershire	4,688	7.74%	7.83%	-1.10%
		Rutland	169	5.33%	5.72%	-6.84%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
	Lincolnshire		6,186	9.34%	9.27%	0.74%
		Lincolnshire	6,168	9.29%	9.26%	0.36%
	Northamptonshire		7,651	8.14%	8.19%	-0.56%
		Northamptonshire	7,648	8.09%	8.19%	-1.14%
	Nottinghamshire		14,737	11.03%	11.76%	<b>-6.24%</b>
		Nottingham	6,541	10.98%	12.11%	<b>-9.38%</b>
		Nottinghamshire	8,060	10.89%	11.43%	-4.68%
East of England			60,402	9.10%	8.91%	2.10%
	Bedfordshire		6,236	7.79%	7.82%	-0.37%
		Bedford <sup>17</sup>	1,982	8.12%	8.12%	0.06%
		Central <sup>20</sup> Bedfordshire	1,551	7.03%	7.20%	-2.45%
		Luton	2,777	8.17%	8.13%	0.56%

<sup>17</sup> Formerly Bedford and Central Bedfordshire were both part of Bedfordshire Local Authority.

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
	Cambridgeshire and Peterborough		8,618	10.27%	9.78%	5.02%
		Cambridgeshire	5,360	9.37%	9.29%	0.80%
		Peterborough	3,176	11.08%	10.39%	6.64%
	Essex		20,742	8.57%	8.67%	-1.17%
		Essex	15,174	8.59%	8.61%	-0.14%
		Southend-on-Sea	2,745	9.47%	9.34%	1.41%
		Thurrock	2,522	7.65%	8.49%	-9.91%
	Hertfordshire		10,854	8.69%	7.93%	<b>9.51%</b>
		Hertfordshire	10,434	8.74%	7.99%	<b>9.35%</b>
	Norfolk and Suffolk		13,952	10.07%	9.99%	0.85%
		Norfolk	7,592	10.12%	10.36%	-2.33%
		Suffolk	6,288	10.18%	9.63%	5.72%
London			106,675	8.52%	8.74%	<b>-2.57%</b>

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Barking and Dagenham	3,063	8.03%	9.24%	<b>-13.06%</b>
		Barnet	2,999	7.80%	7.72%	1.12%
		Bexley	2,360	8.94%	8.18%	9.31%
		Brent	3,979	9.12%	8.34%	9.45%
		Bromley	3,256	7.62%	8.20%	-7.07%
		Camden	2,424	11.06%	10.61%	4.24%
		<i>City of London</i> <sup>18</sup>	36	*	*	*
		Croydon	5,508	8.93%	8.91%	0.21%
		Ealing	4,236	8.45%	7.82%	8.14%
		Enfield	3,753	7.11%	7.93%	-10.25%
		Greenwich	4,367	8.29%	9.00%	-7.90%

<sup>18</sup> Data for the City of London is based on only 36 offenders and has 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.

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Hackney	4,311	8.58%	9.14%	-6.07%
		Hammersmith and Fulham	2,748	10.63%	9.86%	7.73%
		Haringey	4,414	7.41%	8.45%	<b>-12.36%</b>
		Harrow	1,662	7.04%	7.65%	-7.94%
		Havering	2,157	6.82%	8.33%	<b>-18.18%</b>
		Hillingdon	2,870	7.98%	8.00%	-0.29%
		Hounslow	3,470	9.51%	9.06%	5.01%
		Islington	3,206	10.85%	9.92%	9.46%
		Kensington and Chelsea	1,429	9.87%	9.61%	2.67%
		Kingston upon Thames	1,136	8.80%	9.22%	-4.50%
		Lambeth	5,414	8.44%	8.88%	-4.99%
		Lewisham	5,246	8.54%	8.98%	-4.92%
		Merton	1,894	7.97%	8.58%	-7.04%
		Newham	5,394	8.66%	8.79%	-1.50%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Redbridge	2,932	7.44%	8.04%	-7.56%
		Richmond upon Thames	1,154	8.32%	8.29%	0.35%
		Southwark	4,973	7.68%	8.44%	-8.99%
		Sutton	1,996	8.62%	9.14%	-5.74%
		Tower Hamlets	4,009	8.71%	9.43%	-7.69%
		Waltham Forest	3,579	7.57%	8.23%	-7.97%
		Wandsworth	3,123	9.25%	9.41%	-1.63%
		Westminster	1,950	9.49%	9.52%	-0.32%
North East			42,197	14.77%	14.97%	-1.33%
	Durham Tees Valley		20,552	14.65%	14.80%	-1.02%
		Darlington	1,977	15.43%	14.33%	7.66%
		Durham	6,569	12.54%	12.72%	-1.40%
		Hartlepool	2,217	18.31%	17.81%	2.80%
		Middlesbrough	3,776	16.87%	16.89%	-0.13%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Redcar and Cleveland	2,684	14.31%	14.94%	-4.21%
		Stockton-on-Tees	3,274	13.35%	14.60%	-8.57%
	Northumbria		21,645	14.89%	15.13%	-1.61%
		Gateshead	3,308	13.85%	13.98%	-0.94%
		Newcastle-upon- Tyne	5,281	17.06%	16.86%	1.18%
		North Tyneside	2,781	16.11%	15.44%	4.33%
		Northumberland	3,335	10.58%	12.14%	<b>-12.83%</b>
		South Tyneside	2,187	13.90%	14.93%	-6.87%
		Sunderland	4,703	15.97%	15.93%	0.21%
North West			103,827	10.14%	9.88%	<b>2.63%</b>
	Cheshire		11,003	8.72%	8.81%	-1.11%
		Cheshire East	3,117	7.28%	8.31%	<b>-12.32%</b>

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Cheshire West and Chester	3,689	9.92%	9.24%	7.34%
		Halton	1,912	9.41%	8.58%	9.70%
		Warrington	2,359	8.27%	9.07%	-8.90%
	Cumbria		5,727	11.42%	12.22%	-6.54%
		Cumbria	5,694	11.36%	12.21%	-6.93%
	Greater Manchester		42,899	9.69%	9.67%	0.23%
		Bolton	3,927	10.82%	10.28%	5.28%
		Bury	2,718	7.69%	8.48%	-9.31%
		Manchester	11,537	10.06%	9.97%	0.90%
		Oldham	3,446	9.20%	9.75%	-5.66%
		Rochdale	3,808	8.43%	9.59%	<b>-12.13%</b>
		Salford	4,679	9.81%	9.67%	1.40%
		Stockport	3,144	9.99%	9.64%	3.60%



Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Tameside	3,070	10.65%	10.33%	3.09%
		Trafford	2,353	9.26%	8.92%	3.87%
		Wigan	3,970	9.52%	8.82%	7.98%
	Lancashire		21,436	11.37%	10.96%	3.73%
		Blackburn with Darwen	3,039	10.76%	10.34%	4.10%
		Blackpool	3,865	11.38%	10.79%	5.53%
		Lancashire	14,604	11.47%	11.15%	2.87%
	Merseyside		22,762	10.17%	9.16%	<b>10.98%</b>
		Knowsley	2,647	9.26%	8.59%	7.71%
		Liverpool	10,125	9.94%	9.24%	<b>7.48%</b>
		St Helens	2,507	10.85%	9.53%	<b>13.81%</b>
		Sefton	2,837	8.78%	8.64%	1.61%
		Wirral	4,567	11.60%	9.43%	<b>23.02%</b>
South East			72,889	9.51%	9.34%	1.85%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
	Hampshire		18,902	10.62%	10.61%	0.11%
		Hampshire	10,283	10.06%	10.12%	-0.65%
		Isle of Wight	1,466	11.05%	10.66%	3.68%
		Portsmouth	2,805	13.33%	12.46%	7.03%
		Southampton	4,172	10.55%	10.62%	-0.73%
	Kent		15,914	9.47%	8.65%	<b>9.50%</b>
		Kent	13,042	9.12%	8.55%	<b>6.68%</b>
		Medway	2,849	10.95%	9.21%	<b>18.88%</b>
	Surrey and Sussex		19,684	8.87%	8.70%	2.01%
		Brighton and Hove	3,216	8.74%	8.85%	-1.23%
		East Sussex	4,424	8.86%	8.27%	7.18%
		Surrey	6,139	9.01%	8.98%	0.34%
		West Sussex	6,035	8.67%	8.58%	1.06%
	Thames Valley		18,389	9.10%	9.33%	-2.42%
		Bracknell Forest	922	7.81%	9.35%	-16.44%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Buckinghamshire	3,231	8.17%	8.47%	-3.50%
		Milton Keynes	2,531	11.18%	10.07%	11.07%
		Oxfordshire	4,255	9.02%	9.97%	<b>-9.52%</b>
		Reading	2,054	8.81%	9.29%	-5.15%
		Slough	2,587	8.74%	9.01%	-3.00%
		West Berkshire	1,073	10.53%	9.92%	6.19%
		Windsor and Maidenhead	1,064	7.61%	8.47%	-10.07%
		Wokingham	690	8.41%	8.15%	3.15%
South West			43,052	9.76%	9.46%	<b>3.21%</b>
	Avon and Somerset		16,487	10.12%	9.85%	2.79%
		Bath and N.E. Somerset	1,463	10.18%	9.44%	7.84%
		City of Bristol	7,131	11.12%	10.70%	3.95%
		North Somerset	1,901	9.57%	9.68%	-1.08%
		Somerset	3,884	9.81%	9.45%	3.85%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		South Gloucestershire	1,930	8.13%	7.99%	1.82%
	Devon and Cornwall		11,045	9.33%	8.78%	6.18%
		Cornwall	2,064	7.51%	7.32%	2.55%
		Devon	3,601	9.64%	9.03%	6.72%
		<i>Isles of Scilly</i> <sup>19</sup>	4	*	*	*
		Plymouth	3,824	9.94%	9.28%	7.05%
		Torbay	1,312	9.83%	9.11%	7.93%
	Dorset		5,646	9.30%	9.55%	-2.66%
		Bournemouth	2,532	10.31%	10.40%	-0.93%
		Dorset	2,014	7.80%	8.54%	-8.74%
		Poole	1,174	9.71%	9.54%	1.81%
	Gloucestershire		5,073	9.13%	10.12%	<b>-9.80%</b>

19 Data for the Isles of Scilly is based on only 4 offenders and has 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.

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Gloucestershire	5,103	9.05%	10.06%	<b>-10.01%</b>
	Wiltshire		4,801	10.75%	8.87%	<b>21.17%</b>
		Swindon	1,695	11.27%	9.12%	<b>23.58%</b>
		Wiltshire	2,976	10.18%	8.63%	<b>17.99%</b>
Wales			42,995	10.98%	10.84%	1.25%
		Blaenau Gwent	1,049	8.87%	10.16%	-12.70%
		Bridgend	2,067	10.55%	10.44%	1.06%
		Caerphilly	2,271	8.41%	9.59%	-12.31%
		Cardiff	6,370	11.24%	12.04%	-6.62%
		Carmarthenshire	2,047	14.46%	11.05%	<b>30.83%</b>
		Ceredigion	577	8.84%	8.25%	7.10%
		Conwy	1,313	9.60%	10.72%	-10.49%
		Denbighshire	1,367	10.10%	10.00%	0.91%
		Flintshire	1,967	7.68%	8.70%	-11.81%
		Gwynedd	1,581	9.61%	11.03%	-12.81%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Isle of Anglesey	797	11.29%	10.75%	5.06%
		Merthyr Tydfil	1,120	11.43%	11.76%	-2.81%
		Monmouthshire	639	11.58%	10.56%	9.70%
		Neath Port Talbot	1,987	10.57%	9.47%	11.63%
		Newport	2,770	12.27%	12.61%	-2.62%
		Pembrokeshire	1,204	12.38%	11.28%	9.67%
		Powys	1,056	9.66%	9.81%	-1.58%
		Rhondda, Cynon, Taff	3,905	10.32%	9.65%	6.99%
		Swansea	3,685	12.51%	11.39%	9.80%
		Torfaen	1,050	9.52%	10.74%	-11.31%
		The Vale of Glamorgan	1,756	11.62%	11.61%	0.03%
		Wrexham	2,242	13.51%	11.91%	<b>13.48%</b>
West Midlands			74,594	7.87%	8.89%	<b>-11.46%</b>
	Staffordshire and West Midlands		58,032	7.40%	8.62%	<b>-14.09%</b>

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Birmingham	21,783	6.80%	8.41%	<b>-19.18%</b>
		Coventry	5,468	8.28%	8.98%	-7.72%
		Dudley	3,321	7.53%	8.84%	<b>-14.81%</b>
		Sandwell	5,066	7.20%	8.23%	<b>-12.43%</b>
		Solihull	2,153	6.08%	7.80%	<b>-22.00%</b>
		Staffordshire	7,643	6.41%	7.81%	<b>-17.90%</b>
		Stoke-on-Trent	4,510	9.84%	10.02%	-1.79%
		Walsall	3,624	8.69%	9.88%	<b>-12.03%</b>
		Wolverhampton	4,011	7.75%	8.67%	<b>-10.53%</b>
	Warwickshire		5,283	8.97%	10.00%	<b>-10.29%</b>
		Warwickshire	5,229	9.12%	9.97%	-8.55%
	West Mercia		11,279	9.77%	9.78%	-0.09%
		Herefordshire	1,606	11.52%	11.06%	4.15%
		Shropshire	2,053	9.69%	9.47%	2.32%
		Telford and Wrekin	1,867	9.21%	9.33%	-1.26%

Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Worcestershire	5,770	9.45%	9.63%	-1.90%
Yorkshire and Humberside			72,252	10.49%	11.07%	<b>-5.28%</b>
	Humberside		11,684	10.42%	10.50%	-0.80%
		East Riding of Yorkshire	1,942	8.55%	8.58%	-0.43%
		City of Kingston upon Hull	4,868	11.40%	10.78%	5.75%
		North East Lincolnshire	2,570	11.44%	12.01%	-4.76%
		North Lincolnshire	2,309	8.71%	9.84%	-11.49%
	York and North Yorkshire		6,884	11.84%	11.20%	5.75%
		North Yorkshire	4,780	11.36%	10.73%	5.85%
		York	2,042	12.93%	12.50%	3.42%
	South Yorkshire		18,536	10.50%	11.77%	<b>-10.78%</b>
		Barnsley	3,238	10.35%	11.83%	<b>-12.58%</b>



Local Adult Reoffending – 1 January 2010 – 31 December 2010

Region	Probation Trust	Local Authority	Cohort size (combining four quarters of probation caseload data) <sup>25</sup>	Actual rate of re- offending	Predicted rate of re-offending	% difference from baseline (2007/08 results) <sup>26</sup>
		Doncaster	4,548	11.41%	12.31%	-7.32%
		Rotherham	3,478	9.55%	11.35%	<b>-15.87%</b>
		Sheffield	7,008	10.25%	11.44%	<b>-10.47%</b>
	West Yorkshire		35,148	10.24%	10.87%	<b>-5.81%</b>
		Bradford	9,124	9.25%	10.27%	<b>-9.92%</b>
		Calderdale	2,951	9.56%	10.52%	-9.19%
		Kirklees	5,367	9.60%	10.60%	<b>-9.43%</b>
		Leeds	13,060	11.00%	11.41%	-3.64%
		Wakefield	4,499	11.31%	10.94%	3.38%
	Unknown Probation Trust		3,045	10.02%	11.10%	-9.76%
		Unknown local authority	7,685	10.76%	10.18%	5.75%

<sup>25</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 per cent) 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 per cent) number of offenders whose postcode is in a local authority which is not in the probation trust where they are on the caseload.

<sup>26</sup> Data in bold illustrates that the change in re-offending from the baseline is statistically significant.

## Appendix B – Differences between the Local Adult re-offending rate and the annual National Statistics

There are a number of differences between the local adult re-offending measure and the annual National Statistics:

- The sample of offenders
- The measure of re-offending
- The time allowed for re-offending
- The types of sentences which mean an offence is counted.

These differences reflect the different purposes of the outputs. The National Statistics on re-offending are the headline measure of re-offending in England and Wales. The local adult measure has been developed as a more timely source of information on trends in re-offending, and to improve understanding of how progress in reducing re-offending is being made at the local level.

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

The local measure takes a snapshot of every offender under probation supervision at the end of each quarter, and combines four such snapshots together. Each quarter, the dataset moves on, with one new quarter added, and the oldest removed.

This means that the local measure considers offenders who may have been under supervision in the community (either on licence from custody or on a court order) for a range of time from one day to a number of years. However, the local measure will not include offenders aged 22 and over who have been released from a short custodial sentence (as they do not receive probation supervision).

The national measure includes every offender discharged from prison or commencing a court order under probation supervision in January to March of a year.

The national measure considers offenders from the first day of their at risk period in the community, and does include offenders released from short custodial sentences.

Main reason for difference – using the national approach would not provide large enough numbers of offenders to enable measurement at the local level.

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

The local measure counts the proportion of offenders from each snapshot that is proven to re-offend in a three month period, and compares this to the proportion expected to re-offend when their characteristics are compared to the characteristics of the baseline cohort in 2007/08.

The headline national measure (frequency of re-offending) counts the number of offences (per 100 offenders) committed in a one year period, with no comparison to expected rates. It also presents the proportion of offenders that re-offend and produces expected rates – however, these are not the headline measure.

Main reason for difference – using the national approach would not allow for fair comparisons between areas or across time (given the small numbers of offenders being measured in an area, and the lack of a predicted rate for the frequency of re-offending).

## **Time allowed for re-offending**

The local measure allows three months (with a further three months for offences to be proved by court conviction or caution)

The national measure allows twelve months (with a further six months for offences to be proved by court conviction)

Analysis has shown that re-offending over three months is representative of re-offending over twelve months for most offences, but is not representative for more serious offences which take longer to work through the criminal justice system.

Main reason for difference – using the local measure allows for more timely data than is possible using the national method.

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

The local measure considers offences proved by both court convictions and cautions when counting whether an offender re-offended.

The national measure considers only court convictions.

Main reason for difference – adding in cautions to the local measure allows for slightly more offences to be included. Having a higher number of re-offenders allows for more robust expected rates of re-offending – smaller numbers make this prediction more difficult.

## **Other local measures of offending**

Drug offending – The local measure of the offending of drug-misusing offenders includes the offending of individuals identified through their contact with the criminal justice system as Class A drug misusers between 1 January and 31 March each year. These data are reported at Drug Action Team level (or Community Safety Partnership level in Wales). This indicator

provides the volume of offending for the offenders in a 12 month offending period; this is compared to the predicted volume of offending.

For more information see: [www.homeoffice.gov.uk/rds/pdfs10/misc0210.pdf](http://www.homeoffice.gov.uk/rds/pdfs10/misc0210.pdf)

Prolific and Priority Offenders – The local measure on the offending of Prolific and Priority Offenders (PPO's) measures the offending of all offenders identified as PPO's at the start of a financial year. These data are reported at national, regional, police force and local authority level. This indicator provides the change in the level of offending for the specified cohort in a 12 month period.

For more information see: [www.homeoffice.gov.uk/rds/pdfs10/misc0110.pdf](http://www.homeoffice.gov.uk/rds/pdfs10/misc0110.pdf)

## Appendix C – Explanation of the Predicted Rate, Statistical Significance, and Funnel Plots

### 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 (see Appendix E in the latest adult re-offending report - [www.justice.gov.uk/publications/reoffendingofadults.htm](http://www.justice.gov.uk/publications/reoffendingofadults.htm)).

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 four 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 in the Police National Computer (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, 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 7.

The model has been peer reviewed by an academic statistician.

### Model assessment

The model is assessed by calculating the level of discrimination between the offenders that reoffended and offenders that did not. The adult logistic regression model achieved a 68.6 per cent overall discrimination level on the latest dataset (Table 6). A level of discrimination of around 70 per cent was deemed to be acceptable and the model should predict results accurately enough for the predicted rate to be used. The discrimination can also be evaluated by calculating the Area Under Curve (AUC) for the Receiver Operating Characteristic curve. Again, the value for the model was 0.78, which means a good to excellent level of discrimination (Hosmer and Lemeshow, 2000, p.162).

**Table 5: Classification table for the logistic regression model comparing latest dataset prediction with observed values**

		Predicted to reoffend within one year?		%
		No	Yes	
Reoffended within one year?	No	413,197	193,009	68.2%
	Yes	18,009	47,501	72.5%

Table 6 shows the assessment for the logistic regression model for the available datasets. All cohorts show a discriminative power of 68-69 per cent and an AUC for the Receiver Operating Characteristic curve of around 0.77. This means that we can be confident of the predictive power of the logistic regression model over the time period measured.

**Table 6: Classification table for the logistic regression model comparing prediction with observed values, all cohorts to date**

	<b>Number of Offenders</b>	<b>Area Under the Curve for the ROC</b>	<b>Classification Table</b>
<b>April 1 2007 to March 31 2008</b>	685,873	0.76	68.1%
<b>July 1 2007 to June 30 2008</b>	690,049	0.77	68.4%
<b>October 1 2007 to September 30 2008</b>	692,330	0.77	68.7%
<b>January 1 2008 to December 31 2008</b>	691,588	0.77	68.9%
<b>April 1 2008 to March 31 2009</b>	691,638	0.77	68.9%
<b>July 1 2008 to June 30 2009</b>	691,517	0.77	68.6%
<b>October 1 2008 to September 30 2009</b>	690,994	0.77	68.3%
<b>January 1 2009 to December 31 2009</b>	691,261	0.77	68.1%
<b>April 1 2009 to March 31 2010</b>	688,616	0.77	67.8%
<b>July 1 2009 to June 30 2010</b>	683,540	0.77	68.0%
<b>October 1 2009 to September 30 2010</b>	677,654	0.77	68.5%
<b>January 1 2010 to December 31 2010</b>	671,716	0.78	68.6%

**Table 7: 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



Local Adult Reoffending – 1 January 2010 – 31 December 2010

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 two 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 per cent confident that any change we observe that meets our test for statistical significance is 'real'.

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