

Offender Group Reoffending Scale

Version 3

APPENDIX

Information on the development of OGRS

The history of the Offender Group Reconviction/Reoffending Scale (OGRS)

In the 1990s, there was a demand for a risk assessment tool which could be used by all probation services in England and Wales. A number of probation forces had developed their own scales in an attempt to quantify the risk of reconviction, but these tended to be based on small local samples, to have somewhat informal statistical methods and used a wide range of risk factors. The development of the Offender Group Reconviction Scale (OGRS) was an attempt to establish a uniform national score. It was based on a more careful statistical analysis, with data on a much larger and more representative sample of offenders.

The score was intended to provide probation officers with guidance in writing Pre Sentence Reports (PSRs) by estimating, from a limited amount of information, the probability that a convicted offender would be reconvicted at least once within two years of their release from custody or from the start of their community sentence for any type of offence. It was emphasised that the score was only an aid to judgement. Probation officers were advised to use OGRS, but to use their judgement to take account of all the special circumstances connected with a case. The score did not play any formal part in the judicial process.

November 1996 saw the launch of the first version of OGRS. It was to be scored by probation officers using pencil, paper and calculator. It contained six simple demographic and criminal history factors. While it was generally a good predictor of reconviction, it was less accurate for offenders aged 13-17 and over 50. As it was developed using the limited data available in the Home Office's Offenders Index (OI), both criminal history and the prediction of recidivism were limited to convictions for 'standard list' offences – this excludes some summary convictions and all non-conviction sanctions.

In 2000, a revised version (OGRS 2) was launched. In an effort to improve prediction further, the factors included rose to ten. A computerised version was adopted, and OGRS was also included in the then-new Offender Assessment System (OASys). A separate predictor of violent and sexual reconviction was launched.

The new version, OGRS 3, was developed between 2005 and 2007. The data source was now the Police National Computer (PNC), which includes all summary offences and non-conviction sanctions for recordable offences. (Only very minor offences such as parking and speeding offences are not recordable.) This makes OGRS 3 more comprehensive, especially for young offenders, who are more likely to receive the non-conviction sanctions of reprimand and final warning. OGRS 3 is therefore described as a predictor of "proven reoffending" rather than "reconviction for 'standard list' offences", and its title refers to Reoffending rather than Reconviction.

The violent and sexual reconviction predictor was not updated: OGRS 3 is a good predictor of proven violent reoffending, while the specialist predictor Risk Matrix 2000/S should be used to estimate the likelihood of sexual reoffending for those with a history of such offending.

In developing OGRS 3, a stronger emphasis was placed on reducing data coding and entry burdens. The number of factors included was reduced to seven, while still improving the validity of predictions. As well as the existing 2 year predictor, OGRS 3 includes a predictor of proven reoffending within 1 year of discharge or start of community order. In order to focus more on offending than the functioning of the criminal justice system, the 1 or 2 year followup period is now based on the date of first proven reoffending rather than the date of reconviction.

The sample included a large number of offenders released from custody and predicted reoffending well for these offenders. HM Prison Service have therefore agreed that OGRS 3 will eventually replace the Sentence Planning Predictor, allowing the use of a single NOMS-wide predictor.

Comparison of the three versions of OGRS

Table 1 summarises the factors included in each version of OASys, and outlines the samples used. Most are self-explanatory, but three need some explanation.

The 'Copas rate' is explained in the 'Statistical details' section below. The offending history status is one of the following: first conviction; other conviction; first caution/reprimand/final warning (CRFW); second CRFW, or other CRFW. The distinction between age at sentence and age at release or start of order has only been clarified during the development of OGRS 3. It was recognised that where an offender has served a sentence in custody for a non-trivial length of time, the choice of age can make a considerable difference to the prediction. As the Copas rate looks at past behaviour whereas age is based on the offender's current status, it is appropriate to base the Copas rate on their past offending (i.e. until they were last sentenced) but to base the age/gender risk factor on the age they will be when released.

Table 1
Sample details and risk factors included in each version of OGRS

	OGRS 1	OGRS 2	OGRS 3
Research sample			
Year offenders were sentenced/released	1990	1995	2002
Number of cases	14,000	30,000	79,000
Factors included in the model: entered by assessor			
Gender	√	√	(AG)
Age at release or start of order			(AG)
Age at time of sentence	√	√	(C)
Age at first conviction	(C)	√, (C)	(C)
Number of previous convictions	(C)	(C)	
Number of previous sanctions (convictions, cautions, reprimands & final warnings)			(C)
Type of offence (number of categories)	√ (9)	√ (27)	√ (20)
Is current sanction a conviction or an other sanction?			(O)
Current or previous breach		√	
Current or previous burglary		√	
Number of previous youth custodial sentences	√	√	
Factors included in the model: calculated by hand (OGRS 1) or automatically (OGRS 2 and 3)			
Combination of age and gender			√
'Copas rate'	√	√	√
Offending history status			√

Key: √ Included in its own right
 (AG) Part of age/gender
 (C) Part of 'Copas rate'
 (O) Part of offending history status.

The use of OGRS in practice and research

OGRS was originally intended to be used to aid PSR writing. While this is still one of its most important applications, it is now used in several other ways.

As well as being used at PSR stage, OGRS can be used for offenders at the start of community orders or placement with a Youth Offending Team who, for whatever reason, did not receive an OGRS score before sentence. It can also be used at any stage in the prison discharge process – whether as input into parole or other release decision making procedures, or for probation staff who will be supervising the offender.

The 'What Works' risk classification principle states that more intensive programmes should be targeted at high and medium risk offenders. Therefore, OGRS is used as part of NOMS' programme targeting criteria to ensure that low risk offenders are not placed on interventions which may be unnecessary and even counterproductive. On a similar basis, OGRS scores may be used in Offender Management tiering guidelines, especially where OASys is not available. OGRS scores are also used in management information reports to identify subgroups of offenders with high expected reoffending rates.

OGRS has been widely used as a research tool to evaluate the effectiveness of offender treatment programmes. Offenders' OGRS scores provide an expected reconviction rate, allowing comparisons between actual and expected reconviction rates to be made for treated offenders and those in the control group. Where the treatment group's actual-expected comparison is significantly better than that of the control group, it is possible that there is a treatment effect, although careful study design is needed to take account of dynamic risk factors not captured by OGRS, such as motivation to tackle offending behaviour.

Future need for recalibration

As Table 1 showed, OGRS has been revised every few years. As well as providing an opportunity to address any technical, statistical or ease-of-use concerns, revision is necessary in order to keep the tool up to date with patterns of reoffending behaviour. As real patterns of offending and CJS responses to offending change over time, the accuracy of predictions will gradually weaken. This is a slow process – for example, research in 2006-07 shows that OGRS 2 was still a strong predictor for offenders sentenced in 2004 – but it should eventually be halted by recalibrating ('resetting') OGRS with a new, more recent, sample of offenders.

The OGRS statistical model

All three versions of OGRS have been based on large samples of offenders convicted in the recent past. Offenders receiving community orders or discharged from custody within a certain timeframe were included. These offenders were traced on the OI or PNC (see above) to determine their reconviction or proven reoffending status.

Each version of OGRS is based on a statistical model which uses logistic regression. Logistic regression is a technique which estimates the independent effects of a number of covariates (i.e. the demographic and criminal history factors) on a categorical outcome (i.e. whether reconviction or proven reoffending occurred), and produces percentage predictions for each record (i.e. offender).

For OGRS 1 and OGRS 2, a binary logistic regression model was used (i.e. there were two possible outcomes: reconviction or no reconviction). For OGRS 3, an ordinal logistic regression model was used (i.e. there were more than two outcomes and the outcomes have a natural order – in this case, no proven reoffending within 2 years, proven reoffending after 1 year but within 2 years, then proven reoffending within 1 year). This type of model ensures that the 1 year and 2 year predictors have a fixed relationship: when reoffending is unlikely, the 1 year prediction is often just over half the 2 year prediction, but the gap narrows as the 2 year prediction approach 100%. In all versions of OGRS, 'validation' samples - cases which were not used to build the model – were used (successfully) to confirm that the model would predict accurately for new offenders and not just those on whom the model was based.

The Copas rate, and unusual changes in OGRS score

The 'Copas rate' is the most complex part of each OGRS model. It is named after Professor John Copas, co-author of OGRS 1, although the formula in OGRS 3 is rather different.

In all versions of OGRS, the Copas rate is based on just two factors: the length in years of the offender's known criminal career (i.e. from their first conviction (OGRS 1 and 2) or sanction (OGRS 3) to the current conviction), and their total number of convictions or sanctions. Rates are at their highest when the criminal career is 'quick' – that is, the length in years is short but the number of sanctions is high. Offenders receiving their first conviction or sanction have very low Copas rates, but it is possible for older offenders with very 'slow' careers to have even lower rates (unlike the first-time offender, who may be at the start of a prolific criminal career, these offenders are a 'known quantity').

Occasionally, OGRS scores fall when an offender receives a new conviction. There can be two reasons for this. Firstly, the Copas rate balances number of sanctions and length of the criminal career. It almost always rises as the number of sanctions in a criminal career increases, but can decrease in those rare cases where the increasing length of the career has a greater effect than the extra conviction. Secondly, offenders are placed in eleven age bands (four juvenile and seven adult), and moving up an age band will reduce the contribution of age to the predicted rate of reoffending for all but the youngest offenders. A few of these reductions are quite large (of these, the most frequently encountered in OGRS 3 will be males moving from '18 to under 21' to '21 to under 25'), and so the predicted rate of reoffending may fall despite the new conviction. While these falls in OGRS score appear odd, they reflect the overall effect of reoffending with aging and previous long breaks in offending – and as with all OGRS scores, they should be interpreted in the context of the behaviour and circumstances of the individual offender.