**Detailed points on the methodology and data used to measure re-offending outcomes for the PbR element of the Transforming Rehabilitation payment mechanism**

**Introduction**

This note sets out the assumptions and rules used by MoJ Analytical Services for the regular measurement of re-offending outcomes (meaning both the binary and frequency measures) for the PbR element of the TR payment mechanism.

The aim of this note is to clarify the detailed aspects of the data and methodology that are to be used to calculate the re-offending outcomes so the measure can be fully understood by providers as they prepare their bids.

This note also briefly outlines the configuration of the baselines against which the re-offending outcomes of all subsequent TR PbR cohorts will be compared for the purpose of calculating PbR payments. More detailed information on the production of these baselines can be found in the document *Methodology for the PbR re-offending baselines*. This is available in the TR data room.

**Measuring re-offending outcomes for TR cohorts**

***Re-offending outcomes***

The final re-offending outcomes calculated as described below are definitive for PbR purposes. Any discrepancies seen in data from other sources (for example management information or interim re-offending figures) shall have no bearing on re-offending outcomes or PbR payments.

Re-offending outcomes (meaning both the binary and frequency measures) will be rounded and used to 2 decimal places. For example:

* Quarterly binary rate of 45.67%
* Annual frequency rate of 4.23 re-offences per re-offender

***Data sources***

The measurement of re-offending outcomes relies on operational data systems, in particular the Police National Computer (PNC) and National Delius (nDelius). Data from such systems are subject to possible errors in data entry and processing, and in a minority of cases necessary data items may be missing or incorrect. In order to produce statistics that are robust and consistent a set of pragmatic assumptions and rules must be incorporated into the methodology.

Subject to these, data held on the PNC and nDelius will be treated as authoritative and final for the purposes of measuring re-offending outcomes for PbR.

Key points to bear in mind in relation to the PNC are:

* The data are the same as those used to produce MoJ’s existing Proven Re-offending Statistics, which are accredited by the UK Statistics Authority as meeting National Statistics standards. You can find more information on these statistics at the following link.

<https://www.gov.uk/government/collections/proven-reoffending-statistics>

* The PNC and the data it contains are owned by the Home Office and police forces, not by MoJ.
* The data are collected primarily for operational and administrative purposes; while they provide a rich source of data on offenders and offending that can be used to produce detailed statistics on re-offending, this is not the primary purpose of the PNC. Data are recorded by police forces and are subject to recording practices and errors, like any large operational data recording system.
* MOJ does not undertake validation of individual data items recorded on the PNC.

Key points to bear in mind in relation to nDelius are:

* Information relating to allocated offender starts held on nDelius will include the data needed to match each start to offending data on the PNC. While these may be subject to recording practices and errors, validation is built into processes and systems to minimise any such problems. For more details on the matching of allocated offender starts to PNC data see the sections of this note on matching below.

***Formation of cohorts***

Each quarterly cohort will comprise a list of offender starts. Each allocated offender start has associated with it an offender and an *index offence*. The index offence is the most serious offence associated with the sentence which led to the offender being eligible to join a TR cohort.

For PbR purposes each offender start will be allocated by the National Probation Service (NPS) to a quarterly cohort, with each cohort comprising all offender starts allocated between the cohort start date and the cohort end date (inclusive) within a given CPA.

For example, if cohort A relates to the first quarter of 2015 in CPA XYZ then it will comprise all offenders allocated to CPA XYZ from 1st January 2015 to 31st March 2015 inclusive. Each individual offender should be allocated to each quarterly cohort only once, based on their first entry in a given quarter. Annual cohorts will be formed simply by combining the 4 quarterly cohorts of the relevant year; therefore an individual offender may have up to 4 starts within a single annual cohort (one from each quarter).

Once the list of offender starts included in each PbR cohort is finalised this cohort is definitive and any subsequent transfers of offenders between CRCs, or to or from the NPS, are not taken into account in the PbR cohorts. The definitive list of offender starts included in a PbR cohort will be generated by nDelius and used to carry out the measurement of re-offending for PbR purposes.

***Matching of allocated persons to the PNC***

On receiving the cohort list from nDelius, MoJ will attempt to match each of the offenders on the cohort list to an offender record on the PNC using a range of personal data. This will include the ‘PNCID’ which is assigned to each offender by police forces when they enter their details onto the PNC.

Although the vast majority of offenders are successfully matched to the PNC, a small minority are not. Any offender who cannot be matched to an offender record on the PNC will be excluded from the measurement of re-offending outcomes.

***Matching of allocated persons’ index offences to the PNC***

MoJ will then attempt to match each of the index offences associated with each offender start on the cohort list to an offence record on the PNC.

To perform the matching MoJ will use the *sentence date* or the *conviction date* attached to the nDelius record and compare it with the *court-caution date* or the *subsequent appearance date* (*SAP date* - this is the latest available court appearance for a specific offence) attached to PNC offences.

In instances where more than one PNC offence is matched to an nDelius index offence, the PNC offence with the most serious sentence will be selected

Again, not all offences are successfully matched to the PNC. If an index offence cannot be matched to a PNC offence record then its associated offender start will be excluded from the measurement of re-offending outcomes.

For the purposes of calculating PbR outcome payments it will be assumed that the re-offending outcomes of the portion of offender starts in a PbR cohort that are not successfully matched and measured are identical to re-offending outcomes for those that are measured.

***Measurement periods***

Re-offending among offenders who join a cohort on release from a custodial sentence will be monitored for 12 months from the day of their first release (releases from subsequent recalls are not relevant), inclusive. Re-offending among offenders who join a cohort on being sentenced to a Community Order or Suspended Sentence Order (CO/SSO) will be monitored for 12 months from the date on which they are sentenced, inclusive. For both groups, this date on which monitoring begins is known as the *index date*. Note that the index date is not necessarily the point at which the offender start is allocated to the cohort.

Offences will be included as re-offences in the PbR outcome measurement if, according to the PNC, they are committed within 12 months of the index date and the offender receives a court conviction or a caution corresponding to the offence within 18 months of the index date. In line with the existing National Statistics methodology, the date of an offence is taken to be the earliest of five dates recorded against it on the PNC: *offence start date; offence end date; court-caution date; process date;* and *subsequent appearance date*.

In order to determine re-offending outcomes for a given cohort, MoJ will use the most recent snapshot of the PNC available as at 20 months following the end of that cohort build-up period (the 21 months comprise: 12 months to monitor re-offending, a further 6 months to allow time for cases to be processed in the courts, and 2 months for the PNC to be updated).

Where data on the PNC relating to a cohort offender is subsequently changed or updated the re-offending outcomes for that cohort are not subject to revision and therefore this will have no bearing on the PbR payment for that cohort.

***Adjusting binary re-offending rates by OGRS4/G***

As described in the payment mechanism design overview, all binary re-offending rates will be adjusted to take account of the influence that differences in offender mix can have on binary re-offending rates before being used to determine PbR outcomes. This adjustment will be based on the 1-year OGRS4/G (Offender Group Reconviction Scale) system. OGRS4/G is based on a well-established, peer-reviewed methodology for assessing and representing re-offending risk.

OGRS4/G uses age, gender and criminal history to assess the general re-offending risk of a given group of offenders by producing a score between 0 and 1. These scores can be used to compare the relative likelihood of re-offending either over time or between different groups of offenders, with a higher/lower rate meaning a group of offenders who are more/less likely to re-offend. For example if offender group A have an average OGRS4/G score of 0.44, and offender group B have an average OGRS 4/G score of 0.58, this means that offender group A are less likely to re-offend.

The OGRS4/G-adjusted re-offending rate for a given cohort will be calculated as the observed re-offending rate for that quarterly/annual cohort plus any difference between the OGRS4/G score between that cohort and the 2011 cohort (see formula below). This calculation effectively standardises the mix of offenders in each cohort of a given CPA to the 2011 mix for that same CPA.

*Formula for producing the OGRS4/G-adjusted binary re-offending rate for determining PbR outcomes.*



Where

is the adjusted re-offending rate in year *x (or quarter x)*

 is the unadjusted re-offending rate in year *x (or quarter x)*

 is the OGRS in year *x (or quarter x)*

*G* is the OGRS in the baseline year (2011)

***Re-offending baselines***

In order to determine PbR outcome payments, the re-offending outcomes produced as described above will be compared against a set of baseline re-offending outcomes calculated from 2011 data. The difference between the re-offending outcomes for a given PbR cohort in a given CPA and the 2011 baseline re-offending outcomes for the same CPA will determine the PbR outcome payment. These baselines are final and definitive.

While they are based on observed data, some aspects had to be modelled using the best available evidence. For more detailed information on how these baselines were calculated please see the document *Methodology for the PbR re-offending baselines*. This is available in the TR data room.