# Analysis on the impact of absconding incident history as a predictor of future absconding incidents

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This analytical summary presents findings on the relationship between prisoners' previous absconding history and absconding incidents committed during a two year period up to 30 May 2014.

The analysis assesses the impact of previous absconding incidents (including all absconds, temporary release failures, escapes and attempted escapes) on predicting the likelihood of future absconding incidents of 23,701 prisoners during the two years up to 30 May 2014, 1.5 per cent of whom (347) had an absconding incident during this period. To make this assessment, adjustments were made to take account of offender, offence and prison level characteristics including gender, age, ethnicity, the qualifying offence, criminal history and type of prison. Absconding incident history was available from 2004 for temporary release failures and absconds, and from 1997 for escapes and attempted escapes.

## Key findings

The key findings are:

- Having a previous absconding incident was, on its own, a statistically significant predictor of having a future absconding incident, but was not significant after controlling for gender, age, ethnicity, the type of qualifying offence, the numbers of previous offences resulting in a caution and conviction, and type of prison.

- Having a previous temporary release failure was found to be a stronger predictor of having a future absconding incident (of all types, not just temporary release failures) than having a previous incident (of all types). It was a statistically significant predictor both on its own and after controlling for gender, age, ethnicity, the type of qualifying offence, the numbers of previous offences resulting in a caution and conviction, and type of prison.

While a range of offender, offence and prison level characteristics were utilised in this analysis, it is possible that characteristics that have not been included could have an influence on the likelihood of future absconding incidents.

## Background

The Ministry of Justice (MoJ) works to protect the public and provide a more effective, transparent and responsive criminal justice system. Following a fundamental review of release on temporary licence (ROTL) policy and practice (for more information about ROTL see Annex B) MoJ, in March 2014, announced a package of measures to ensure that the public was better protected. MoJ has introduced some key measures including a new restricted ROTL regime for more serious offenders and a requirement to link all resettlement ROTL activity clearly to sentence planning objectives.

MoJ recently made major changes to tighten the eligibility for the transfer of prisoners to open prisons. Prisoners may no longer be transferred to open conditions or be allowed out on temporary release if they have, during their current sentence, absconded, escaped, attempted to escape, failed to return to custody or have re-offended whilst released on temporary licence, unless there are exceptional circumstances. Definitions of these, and other key terms, can be found in Annex B.

The change in policy for eligibility for open conditions was not applied retrospectively. Those offenders with a previous 'absconding incident' and already in open conditions were assessed by the National Offender Management Service (NOMS) and the majority were allowed to remain in open conditions because of their current compliance with the regime and favourable risk assessment. However, any prisoners who were assessed to present an unacceptable risk in such conditions, in light of their previous non-compliance, were returned to closed prisons.

The analysis in this paper was undertaken to assess whether prisoners with a history of absconding incidents are more likely to have an absconding incident in the future.

## Approach

Data from the prison case management system, Prisons-NOMIS, on 24,056 prisoners in custody in each month over the two years up to 30 May 2014 were merged with data from the NOMS Incident Reporting System (IRS), which provides information about incidents of escapes or attempted escapes between 1997 and May 2014, and absconds or temporary release failures between April 2004 and May 2014 that occurred during prisoners' current sentence. The combined dataset was then merged with the Police National Computer (PNC) to obtain information on criminal history with a match rate of 98.5 per cent. The PNC only holds the full criminal history of offenders cautioned or sentenced after 2000, so those cautioned or sentenced only before 2000 will not be recorded[1]. The final dataset of 23,701 prisoners contained the following offender, offence, absconding incident and prison level characteristics:

- Age at 30 May 2014

- Gender

- Ethnicity, in four categories; white, black, asian and 'other'

- The main offence that led to the custodial sentence, in six categories: burglary, drug offences, robbery, sexual offences, violence against the person and 'other'

- Whether or not there was an absconding incident during the two-year period up to 30 May 2014

- Number of previous absconding incidents with breakdown by: abscond, escape (or attempted escape) from escort, escape (or attempted escape) from prison, temporary release failure

- Number of months over the two years spent in each of the following: closed prisons, open prisons (dual site), open prisons (hold Category C) and open prisons (fully open). Definitions of these terms can be found in Annex B.

- Number of previous offences (prior to the main offence that led to the custodial sentence), by whether they resulted in a court conviction or a caution

- Number of previous prison sentences

- Number of previous court convictions

- Number of previous court conviction events

The term 'absconding incident' in this study includes escapes (or attempted escapes) from escort or establishment, and temporary release failures as

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[1] In the merged dataset only seven per cent of those in the dataset were sentenced before 2000.

well as absconds (see Annex B for definitions of these terms). The dataset included temporary release failures and absconds that occurred from 2004 onwards and other absconding incidents from 1997 onwards.

To assess the impact of previous absconding incidents on predicting whether a future absconding incident took place during the two year period, a logistic regression model was used. The simplest form of model involved a measure of absconding incident history as the only predictor variable. In order to ascertain the impact of absconding incident history after controlling (or adjusting) for other variables, these were then added as predictors one by one with the fit of the model evaluated with each addition.

Three considerations were made when a predictor variable was added to the model:

1. Whether the variable added was a statistically significant predictor[2] of future incidents

2. Whether the predictor variables already in the model remain statistically significant predictors

3. Whether the overall fit of the model has improved, based on the Akaike information criterion[3]

Where a predictor variable was added to the model but not found to be statistically significant, or the fit of the model was not improved by the addition of it, it was discarded.

## Findings

Of the 23,701 prisoners shown to be in custody in each and every month over the two years up to 30 May 2014 and that could be matched to the Police National Computer, 347 (1.5 per cent) had absconding incidents. The dataset used for analysis only includes around half of absconding incidents over the two year period, and is representative of the prison population with indeterminate sentences or determinate sentences of at least 4 years rather than the full prison population.

Table 1 shows that the proportion of prisoners with future absconding incidents was higher for those with previous absconding incidents; 3.1 per cent compared to 1.4 per cent without a previous absconding incident.[4] However, there was substantial variation according to the type of previous absconding incident with the rate for those with a previous temporary release failure (7 per cent) being five times higher than for those without (1.4 per cent).[5] There were no statistically significant differences in the rate according to whether the prisoners previously absconded or escaped, whether from escort or establishment.

**Table 1: Whether a prisoner has a future absconding incident with breakdown by absconding incident history**

| | Number of prisoners | Proportion with an absconding incident over two year period |
|---|---|---|
| Previous absconding incident | | |
| No | 22,966 | 1.4% |
| Yes | 735 | 3.1% |
| | | |
| Previous Abscond | | |
| No | 23,406 | 1.5% |
| Yes | 295 | 1.7% |
| | | |
| Previous escape from escort | | |
| No | 23,564 | 1.5% |
| Yes | 137 | 0.7% |
| | | |
| Previous escape from establishment | | |
| No | 23,620 | 1.5% |
| Yes | 81 | 1.3% |
| | | |
| Temporary release failure | | |
| No | 23,459 | 1.4% |
| Yes | 242 | 7.0% |

The two statistically significant predictors of whether a prisoner commits a future absconding incident (whether the prisoner had a previous incident and whether the prisoner had a previous temporary release failure) were then assessed to see whether they remained so after controlling (or adjusting) for other characteristics. Details of the final models are provided in Annex A, and show that having a previous absconding incident more generally did not remain a statistically significant predictor. Having a previous temporary release failure did however

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[2] At the 5% significance level
[3] The Akaike information criterion is a measure of the relative quality of a statistical model for a given set of data.

[4] This difference was statistically significant with a p value of less than 0.001
[5] This difference was statistically significant with a p value of less than 0.001

remain a statistically significant predictor,[6] with prisoners with a previous temporary release failure almost twice[7] as likely to have a future absconding incident.

After adjusting for other characteristics, future absconding incidents were also shown to be more likely to occur at open prisons and for prisoners with more previous offences, both relating to court convictions and cautions. They were less likely to occur for females, for older prisoners, for prisoners that were black and asian rather than white, and where sentences were either drugs or sex related rather than for burglary.

## Conclusions

The findings show that having a previous absconding incident (including all absconds, temporary release failures, escapes and attempted escapes) was on its own a statistically significant predictor of having a future absconding incident in the two years to 30 May 2014, but was insignificant after adjusting for offender, offence and prison level characteristics. This means that previous absconding incidents are not predictors of future absconding incidents, once all factors are taken into account.

Having a previous temporary release failure was a much stronger predictor of a future absconding incident and remained statistically significant after adjusting for offender, offence and prison level characteristics. Prisoners with previous temporary release failures were more likely to have a future absconding incident in the two years to 30 May 2014 than prisoners without previous temporary release failures.

A previous abscond, escape from escort or escape from establishment were on their own found not to be statistically significant predictors of a future absconding incident in the two years to 30 May 2014.

While a range of data has been utilised in this analysis, it is acknowledged that there may still be predictor variables not taken account of that could impact the future absconding incident rate.

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[6] At the 5% significance level
[7] With odds ratio 1.87

## Annex A: Final models predicting whether prisoners have an absconding incident in the two years to 30 May 2014.

**Model 1: Using previous absconding incident as a predictor**.

|  | Estimate | Std. Error | z value | Significance | | Odds Ratio |
|---|---|---|---|---|---|---|
| (Intercept) | -3.998 | 0.352 | -11.37 | <.001 | *** | |
| Previous absconding incident | -0.058 | 0.231 | -0.25 | 0.802 | | 0.94 |
| | | | | | | |
| *Type of prison (reference category: Closed)* | | | | | | |
| Open Dual Site | 0.109 | 0.016 | 6.69 | <.001 | *** | 1.11 |
| Open Hold Category C | 0.080 | 0.019 | 4.17 | <.001 | *** | 1.08 |
| Open Fully Open | 0.135 | 0.008 | 16.85 | <.001 | *** | 1.14 |
| | | | | | | |
| *Criminal history* | | | | | | |
| Previous offences resulting in cautions | 0.148 | 0.045 | 3.26 | 0.001 | ** | 1.16 |
| Previous offences resulting in cautions squared | -0.003 | 0.002 | -1.23 | 0.220 | | 1.00 |
| Previous offences resulting in convictions | 0.025 | 0.004 | 6.46 | <.001 | *** | 1.03 |
| Previous offences resulting in convictions squared | -0.000 | 0.000 | -2.98 | 0.003 | ** | 1.00 |
| | | | | | | |
| *Qualifying offence (reference category: Burglary)* | | | | | | |
| Drug related | -0.707 | 0.325 | -2.18 | 0.029 | * | 0.49 |
| Robbery | 0.282 | 0.265 | 1.06 | 0.287 | | 1.33 |
| Sexual | -2.057 | 0.398 | -5.17 | <.001 | *** | 0.13 |
| Violence against the person | -0.303 | 0.263 | -1.15 | 0.250 | | 0.74 |
| Other | -0.308 | 0.301 | -1.02 | 0.306 | | 0.73 |
| | | | | | | |
| Age | -0.027 | 0.006 | -4.31 | <.001 | *** | 0.97 |
| | | | | | | |
| *Gender (reference category: Male)* | | | | | | |
| Female | -1.965 | 0.502 | -3.92 | <.001 | *** | 0.14 |
| | | | | | | |
| *Ethnicity (reference category: White)* | | | | | | |
| Asian | -0.927 | 0.348 | -2.67 | 0.008 | ** | 0.40 |
| Black | -0.886 | 0.219 | -4.05 | <.001 | *** | 0.41 |
| Other | -0.529 | 0.281 | -1.88 | 0.060 | | 0.59 |

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Null deviance: 3620.3 on 23700 degrees of freedom

Residual deviance: 3037.6 on 23682 degrees of freedom

Notes:

Significance codes: *** = significant at 0.001 level, ** = significant at 0.01 level, * = significant at 0.05 level

Where greater than one the odds ratio indicates increased odds of a future absconding incident occurring; where less than one decreased odds of a future absconding incident occurring.

**Model 2: Using previous temporary release failure as a predictor**

| | Estimate | Std. Error | z value | Signifcance | | Odds Ratio |
|---|---|---|---|---|---|---|
| (Intercept) | -3.991 | 0.352 | -11.34 | <.001 | *** | |
| Previous temporary release failure | 0.627 | 0.278 | 2.26 | 0.024 | * | 1.87 |
| | | | | | | |
| *Type of prison (reference category: Closed)* | | | | | | |
| Open Dual Site | 0.107 | 0.016 | 6.61 | <.001 | *** | 1.11 |
| Open Hold Category C | 0.079 | 0.019 | 4.10 | <.001 | *** | 1.08 |
| Open Fully Open | 0.134 | 0.008 | 16.59 | <.001 | *** | 1.14 |
| | | | | | | |
| *Criminal history* | | | | | | |
| Previous offences resulting in cautions | 0.144 | 0.046 | 3.17 | 0.002 | ** | 1.16 |
| Previous offences resulting in cautions squared | -0.003 | 0.002 | -1.19 | 0.236 | | 1.00 |
| Previous offences resulting in convictions | 0.025 | 0.004 | 6.47 | <.001 | *** | 1.03 |
| Previous offences resulting in convictions squared | 0.000 | 0.000 | -3.11 | 0.002 | ** | 1.00 |
| | | | | | | |
| *Qualifying offence (reference category: Burglary)* | | | | | | |
| Drug related | -0.684 | 0.325 | -2.10 | 0.036 | * | 0.50 |
| Robbery | 0.284 | 0.265 | 1.07 | 0.284 | | 1.33 |
| Sexual | -2.023 | 0.398 | -5.08 | <.001 | *** | 0.13 |
| Violence against the person | -0.297 | 0.264 | -1.13 | 0.259 | | 0.74 |
| Other | -0.288 | 0.302 | -0.95 | 0.340 | | 0.75 |
| | | | | | | |
| Age | -0.028 | 0.006 | -4.38 | <.001 | *** | 0.97 |
| | | | | | | |
| *Gender (reference category: Male)* | | | | | | |
| Female | -1.938 | 0.502 | -3.86 | <.001 | *** | 0.14 |
| | | | | | | |
| *Ethnicity (reference category: White)* | | | | | | |
| Asian | -0.918 | 0.348 | -2.64 | 0.008 | ** | 0.40 |
| Black | -0.880 | 0.219 | -4.02 | <.001 | *** | 0.41 |
| Other | -0.517 | 0.281 | -1.84 | 0.066 | | 0.60 |

Null deviance: 3620.3  on 23700  degrees of freedom

Residual deviance: 3033.2  on 23682  degrees of freedom

Notes:

Significance codes:  *** = significant at 0.001 level, ** = significant at 0.01 level, * = significant at 0.05 level

Where greater than one the odds ratio indicates increased odds of a future absconding incident occurring; where less than one decreased odds of a future absconding incident occurring.

## Annex B: Definitions of key terms

**Absconding incident:** For the purpose of this analysis, an absconding incident is an incident in which a prisoner: a) absconds from prison; b) escapes from prison or escort; c) attempts to escape from prison or escort; or d) fails a temporary release licence.

**Release on Temporary Licence (ROTL):** Release on temporary licence is the mechanism that enables prisoners to participate in necessary activities, outside of the prison establishment, that directly contribute to their resettlement into the community and their development of a purposeful, law-abiding life.  The decision to allow temporary release must always be balanced by an active consideration, by means of rigorous risk assessment for maintaining public safety and the public's confidence in the judicial system.

**Abscond:** A prisoner absconds when he/she gains liberty without the need to overcome physical security restraints, or evade direct staff supervision. In most cases unlawfully at large incidents from open prisons would be recorded as 'absconds'.

**Escape from Establishment and Escort:**

A prisoner escapes from a prison if they unlawfully gain their liberty by breaching the secure perimeter of a closed prison, i.e. the outside wall or boundary of the prison. Prisoners, who deliberately deceive staff to engineer a release, by for example impersonating another prisoner, are also classified as escapes.

A prisoner escapes from escort when they are able to pass beyond the control of escorting staff and leave the escort, the van or the building (court, hospital, etc).  This may involve overcoming physical security restraints such as a wall or fence; locks, bolts or bars; a secure vehicle; handcuffs; or the direct supervision of escorting staff.

Escapes are further distinguished by their seriousness, duration and circumstances:

- An incident is deemed to be a Key Performance Indicator escape and included in the annual total if (i) the prisoner is at liberty for 15 minutes or more before recapture or (ii) an offence is committed during an escape lasting less than 15 minutes.

- An incident is deemed to be a non-Key Performance Indicator escape if the prisoner is recaptured in less than 15 minutes and does not commit any other offence whilst he or she is briefly at liberty.

**Attempted escape:**

In an attempted escape the prisoner does not breach a secure perimeter or supervision but an incident has occurred which was directed towards that purpose either within the prison or on escort.  This may involve active escape attempts, finds of escape equipment, including home made ropes, ladders and dummies or significant intelligence.

An escape from escort within a building such as a hospital or court, where the prisoner breaks free but does not gain access to the outside and does not commit another offence, will be recorded as an attempted escape from escort.

**Temporary release failure:** Release on temporary licence is the mechanism that enables prisoners to participate in necessary activities, outside of the prison establishment, that directly contribute to their resettlement into the community and their development of a purposeful, law-abiding life.  A person who fails

to return from temporary release is guilty of an offence in accordance with Section 1 of the Prisoners (Return to Custody) Act 1995.

**Closed condition / prison:** Category A, B and C prisons are called closed prisons. Category A prisons are used for those whose escape would be highly dangerous to the public or national security. Category B prisons are used for those who do not require maximum security, but for whom escape still needs to be very difficult, and Category C prisons are for those who cannot be trusted in open conditions but who are unlikely to try to escape.

**Open condition / prison:** These are Category D prisons, and are used for those who can be reasonably trusted not to try to escape, and are given the privilege of an open prison. Prisoners at such prisons are, subject to approval, given ROTL (Release On Temporary Licence) to work in the community or to go on 'home leave'.

**Dual function prison:** Some prisons are not solely open or closed but instead perform an open function in part or have an open wing, Open prisons described as "dual function" or "holding category C" prisoners fall into this category.