

DRUG & ALCOHOL FINDINGS *Review analysis*

This entry is our analysis of a review or synthesis of research findings considered particularly relevant to improving outcomes from drug or alcohol interventions in the UK. The original review was not published by Findings; click [Title](#) to order a copy. Free reprints may be available from the authors – click [prepared e-mail](#). The summary conveys the findings and views expressed in the review. Below is a commentary from Drug and Alcohol Findings.

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► [The effectiveness and cost-effectiveness of diversion and aftercare programmes for offenders using class A drugs: a systematic review and economic evaluation.](#)

Hayhurst K.P., Leitner M., Davies L. et al.

Health Technology Assessment: 2015, 19(6).

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Although diversionary schemes continue to be a strategic focus for policy in relation to tackling drug-related problems, UK review finds that the evidence base for the effectiveness of these schemes is lacking.

SUMMARY Half of recorded acquisitive crime in the UK is drug-related (1 2). Yet, the relationship between drug use and acquisitive offending seems to be complex (3 4 5). For example, the Drug Treatment Outcomes Research Study (DTORS) [found that](#) behavioural and demographic factors were stronger predictors of involvement in acquisitive crime than spending on drug use, suggesting that the need to finance drug use is not necessarily the main factor driving acquisitive offending by drug users.

The [Drug Interventions Programme](#) was introduced in England and Wales in 2003 providing a model for working with drug-using offenders at each stage of their contact with the criminal justice system. One of the [main aims](#) was to divert people from the criminal justice system and into treatment with voluntary and coercive elements – an approach referred to as ‘diversion’.

The featured review asked whether diversion programmes in conjunction with aftercare improve outcomes or reduce costs compared with not offering them. Key terms were defined in the following way:

- **Diversion:** schemes that are voluntary, court-mandated, or monitored by probation/drug services, and which seek to identify and divert problem drug users to treatment at any point within the criminal justice system.
- **Aftercare:** care following diversion and treatment, excluding care following prison.

This involved a review of effectiveness and cost-effectiveness, broken down into a narrative synthesis, exploring and outlining the extent, nature and quality of the available evidence in this area, and a [meta-analysis](#), combining data from similar studies to produce single estimates of outcomes. Sixteen studies met inclusion criteria – ten were US-based, four were set in the UK, one in Canada, and one in Australia. The US evaluations were dominated by drug court diversion interventions, and led to an over-representation of American (specifically Californian) methamphetamine users (over 99% of participants) and a focus on the impact of the Californian Substance Abuse and Crime Prevention Act referral.

The authors also developed a simulation model for the UK to estimate the costs and benefits of diversion using data from national databases, published studies, and a sample of English heroin and/or crack cocaine users who had been arrested. The main sources of data were the [UK Drug Data Warehouse](#), the [Drug Treatment Outcomes Research Study](#), and published government statistics and reports. The model enabled the authors to compare diversion with no formal identification and assessment process to refer substance-using offenders into treatment and aftercare. However, it was assumed that even without diversion schemes, some in both groups



Key points From summary and commentary

The featured review asked whether diverting people away from the criminal justice system and into treatment improves outcomes and/or reduces costs.

A review of international evidence, dominated by US-based research, indicated that diversion may reduce drug use, though its effect on offending is unclear. Results from a simulation of the UK approach to working with drug-using offenders were similarly unequivocal; due to uncertainty about the relevance and quality of data it proved difficult to conclude that diversion is or isn't cost-effective or clinically effective.

Displaying many of the characteristics of a complex intervention, diversion and aftercare programmes contain multiple components, with each one potentially having an independent effect on outcomes and for one or more components to mediate or modify the impact of other components on outcomes.

would already be in contact with treatment services at the time of arrest or would engage with treatment and aftercare services by informal referral or advice.

Main findings

The review was only partially successful in its aim to understand the effectiveness of diversion schemes, and unsuccessful in its aim to understand cost-effectiveness. All potentially relevant *economic* evaluations were excluded from the review, for example because they did not undertake a full economic evaluation, had no usable outcomes data, and/or did not study diversion.

Taken overall, although a substantive number of individual statistical analyses were available for consideration, outcomes which suggest an unambiguous reduction in key behaviours (drug use and offending) as a result of treatment intervention are few and far between. A potential but small impact of interventions on drug use outcomes was derived from an analysis of just three or four studies whose results could be amalgamated. Expressed using 'odds ratios', for reduced primary drug use the calculation was 1.7 and for reduced use of other drugs, 2.6. In other words, the chances that someone would reduce their drug use were around twice as great if they had been allocated to a diversion scheme than if they had not.

The use of conceptually different measures to evaluate the outcome of reductions in offending behaviour prevented composite outcome scores being produced. The results of individual studies pointed to minimal impact of interventions on offending, but one of three studies reporting outcomes relating to general arrest found a small but **statistically significant** reduction in re-arrest as a result of the intervention.

Few studies addressed health-related outcomes – noticeably absent were physical or mental health, or longer-term impacts, such as hospital admission or mortality. Other outcomes neglected were employment, training, and family support/conflict. The outcome measures used were also too diverse to draw any substantive conclusions regarding the wider impact of treatment.

The simulation model indicated that the UK Drug Interventions Programme was associated with net savings in terms of costs imposed on criminal justice, health and social services, and a small benefit for people diverted to these programmes in terms of quality-adjusted years of life (QALYs). However, there was a high level of variance around the net costs, outcomes and net benefits and consequently a high level of uncertainty around the estimates. Any differences could not be deemed statistically significant and therefore could be due to chance.

The average costs of subsequent offences were estimated at £8,807 for the Drug Interventions Programme and £9,902 without the Drug Interventions Programme.

In the UK there is no universally agreed monetary value for the types of outcome measures used in cost-effectiveness analyses, though an approach used in healthcare is to ask the question: What is the maximum amount decision-makers are willing to pay to gain one unit of outcome? The answer is usually between £15,000 and £30,000 to gain one QALY. Analyses suggested that the Drug Interventions Programme may be cost-effective in around 50% of cases, meaning that if decision-makers were willing to pay £30,000 to gain one additional QALY for arrested drug users, it would be as likely as not that the Drug Interventions Programme would prove cost-effective according to this criterion. However, this result should be treated with caution as other analyses indicated that there is no evidence of a significant difference in costs or QALYs between the Drug Interventions Programme and no Drug Interventions Programme.

Evidence about the relative long-term benefits of diversion and aftercare (ie, beyond the 12 month-period considered in the primary analyses after first contact with the criminal justice system) was limited and uncertain due to the type and effectiveness of treatment and aftercare interventions used.

The authors' conclusions

The review, drawn mostly from US-based research, found evidence from its amalgamations of findings that diversion schemes can reduce drug use; for methodological reasons, effects on offending could not be calculated.

Studies were generally of poor methodological quality and characterised by modest sample size, a high attrition rate, retrospective data collection, limited follow-up, and no random allocation of participants. There was also evidence of publication bias in the available literature, few studies used the same outcome measures, and only half of the included studies reported outcomes for non-drug-related offences. No studies were able to answer the question of whether diversion schemes can save money.

The simulation model, which focused on the UK Drug Interventions Programme, indicated that diversion may be cost-effective. However, there was uncertainty about the relevance and quality of data, which rendered it difficult to conclude whether diversion is cost-effective or clinically effective.

Diversion and aftercare programmes display many of the characteristics of a complex intervention, featuring multiple components with each one potentially having an independent effect on outcomes and potentially mediating or modifying the impact of other components on outcomes.


FINDINGS COMMENTARY The featured systematic review and economic evaluation found that despite diversionary schemes continuing to be a policy focus, the evidence base for their (cost-)effectiveness remains limited, restricting conclusions about whether they improve outcomes compared to no diversion, and whether their potential success is matched by potential cost-savings.

In terms of applicability of findings to the UK context, nearly 100% of participants were methamphetamine users – only a minor issue in British diversion schemes, which tend to focus on heroin and crack cocaine. Studies were also, according to the authors, generally of poor quality. The chief methodological weakness of the review was the absence of studies that randomly selected or randomly allocated participants to treatment or non-treatment groups. Instead, studies retrospectively compared people who engaged with/completed diversion programmes versus those allocated to these programmes but who did not complete/engage. This design therefore couldn't address whether diversion schemes are effective, but whether the kind of people who engage with or complete do better than those who do not, or better than people not selected for engagement or completion.

Another factor that affected the quality of studies was the limited use or reporting of 'intention-to-treat' analyses, which include every participant who was originally included in the studies, regardless of whether they were able or willing to continue with the type of treatment or non-treatment they were originally assigned to. This type of analysis tends to produce a more conservative estimate of treatment effect, as it prevents focus on the 'successful' cohorts "who fully engaged with, and completed, both the intervention and its evaluation".

The [Drug Treatment Outcomes Research Study](#) (DTORS) was a major source in the review, and indeed the *main* contemporary study enabling an assessment of how well the English drug treatment system is performing (making it all the more important to understand its [strengths and limitations](#)). Rather than setting up treatments to be tested on patients allocated by researchers, DTORS simply tracked what happened after patients presented in the normal way to usual drug treatment services. As discussed in the [Effectiveness Bank](#), for this reason it was unable to compare the effectiveness of one treatment with another (caseload differences could invalidate such a comparison), but was able to shed light on the progress typically achieved during and after typical treatments. The scorecard included substantial reductions in drug use, crime, and risk to health, but only small gains in employment and housing. Patients' health improved, but too little for this in itself to justify the cost of treatment. There were however cost savings for society as a whole. While these financial estimates shed light on the costs and benefits of making treatment available, substantial uncertainty over their magnitude made them less reliable than outcomes 'nearer the ground' such as drug use, crime and risk to health.

The [Drug Interventions Programme](#), the focus of the simulation model in the featured paper, was introduced in England and Wales in 2003, providing an approach for working with drug-using offenders at each stage of their contact with the criminal justice system. From 2006, under the banner of the [Tough Choices](#) project, the point at which a drug test (for heroin, cocaine or crack cocaine) was carried out in the custody suite was moved from post-charge to post-arrest, and a new power was introduced for the police to require adults who had tested positive to attend an initial assessment of their drug use, rather than assessments being voluntary. Research conducted on behalf of the Home Office [supported](#) "the role of the criminal justice system in tandem with other agencies channelling drug misusers into treatment". It found that rates of entry into treatment were higher for referrals from the Drug Interventions Programme than previous arrest-referral programmes, and levels of retention in treatment for people referred from the Drug Interventions Programme equalled those of non-criminal justice routes. From a birds-eye view of the Drug Interventions Programme several years later, criminal justice and substance use expert Russell Webster [acknowledged](#) its "very positive impact" – reassuring given the project's heavy resourcing – but also identified ways in which it was "no longer fit for purpose".

A [national programme](#) for "liaison and diversion" ([unfold](#)  [supplementary text](#) to read how the two concepts differ) was established in England in 2010 after the publication of [Lord Bradley's review](#) of people with mental health problems or learning disabilities in the criminal justice system. Prior to this, diversion schemes were 'patchy' – developing "at different rates, or not at all, with many pilot schemes being set up with insecure funding arrangements that are not embedded into the health service or criminal justice infrastructure". One of the [justifications](#) for diversion was its reported cost-effectiveness, at least when it comes to people with mental health problems. The Sainsbury Centre for Mental Health [found that](#) "the case for diversion is particularly strong when it means diverting offenders away from short sentences in prison. Prison is a high-cost intervention which is ineffective in reducing subsequent offending and inappropriate as a setting for effective mental health care". The featured paper was more equivocal; the review found evidence from its amalgamations of findings that diversion schemes can reduce drug use; for methodological reasons, effects on offending could not be calculated,

and the economic model indicated that diversion may be cost-effective though the relevance and quality of data undermined the strength of this conclusion.

The Centre for Justice Innovation, which champions practice innovation and evidence-led policy reform in the UK's justice systems, published a [briefing](#) in 2019 on 'pre-court' diversion for adults. Two routes of diversion were defined: (1) people who are arrested and likely to receive a formal out-of-court resolution are diverted into either a less serious out-of-court resolution or an informal resolution; (2) people who are arrested and likely to be prosecuted in court are diverted into either a formal out-of-court resolution or an informal resolution (this diversion from court is sometimes called 'deferred prosecution'). The briefing acknowledged that interest in pre-court diversion has been "re-awakened" in the UK, for example following [MP David Lammy's review](#) into the treatment of, and outcomes for, Black, Asian and Minority Ethnic (BAME) people in the criminal justice system, which recommended the Government roll out deferred prosecution, pioneered in [Operation Turning Point](#), to both adult and youth offenders across England and Wales.

Diversion is the principle of ushering people away from the criminal justice system and into drug treatment. This can be facilitated by a range of voluntary, court-mandated, and monitored services. In the featured paper the review was based overwhelmingly on programmes in the United States which tend to be court-mandated, whereas the economic model was based on the Drug Interventions Programme, [which identifies](#) two possible pathways that service users can follow: (1) enforced participation via the criminal justice system; and (2) identification by proactive engagement.

Court-ordered treatment is a type of enforcement. [However](#), "offenders often have a *choice* – whether to face penal sanctions or comply with treatment requirements", and it doesn't rule out the possibility that offenders had been wishing or willing to go to treatment before or irrespective of the court's ruling. It also may not matter in terms of treatment success how a person gets there.

Routes into treatment from the criminal justice system were examined by [Professor Philip Bean](#) in a 1999 Effectiveness Bank [article](#), and he found that "How an addict is exposed to treatment seems irrelevant. What's important is that they are brought into an environment where intervention occurs; the more routes into this environment the better." More important it seems is that people are retained in treatment – more time in treatment leading to better outcomes. However, a [research synthesis](#) provided a contrary understanding, tending to support common-sense understandings that what one freely chooses to commit to is more likely to engage one and have the desired effects. An Effectiveness Bank drug treatment [matrix bite](#) delves further into whether coercion is a good thing, specifically addressing whether the system should be set up to maximise the degree and extent of coercion, or focus on making treatment so accessible, welcoming and non-stigmatised, that formal criminal justice coercion is the exception.

National responses to crime and substance use are shaped by various strategies, including the following appraised in the Effectiveness Bank:

- [UK Government Modern Crime Prevention Strategy \(2016\)](#): The Justice Secretary and Lord Chief Justice have set up a joint working group to investigate the problem-solving court model, which can include diversion from the mainstream criminal justice system where the offender opts into the problem-solving court – often as an alternative to a prison sentence – and agrees to undergo appropriate treatment and behaviour-change interventions. Progress is overseen by the judiciary who hear reviews at court and support the offender through rehabilitation.
- [UK Government drug strategy \(2017\)](#): The strategy cites strong evidence to link drug treatment to reductions in offending and supporting people to address their dependence, and therefore regards treatment as critical to tackling the risk of reoffending. Alongside punitive sanctions, the criminal justice system should consider use of health-based, rehabilitative interventions to address the drivers of crime and help prevent further substance use and offending. Liaison and diversion services, for example, enable offenders with mental health, substance use and other complex needs to be directed towards appropriate health interventions from police stations or courts.
- [Scottish Government's strategy to improve health by preventing and reducing alcohol and drug use, harm and related deaths \(2018\)](#): Scotland has pledged to take a public health approach to justice, aiming for vulnerable people to be diverted from the criminal justice system wherever possible. "Diverting those with problematic alcohol and drug use away from the justice system and into treatment support, and other interventions that reduce harm and preserve life, is essential. This approach needs to run through how the police lead the work to control the supply of drugs, sentencing, the provision of treatment and support in prison setting, as well as supporting continuity of care on release."

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