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# Measuring the harm from illegal drugs using the Drug Harm Index – an update

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Home Office Online Report 08/06

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# Measuring the harm from illegal drugs using the Drug Harm Index – an update

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## Summary

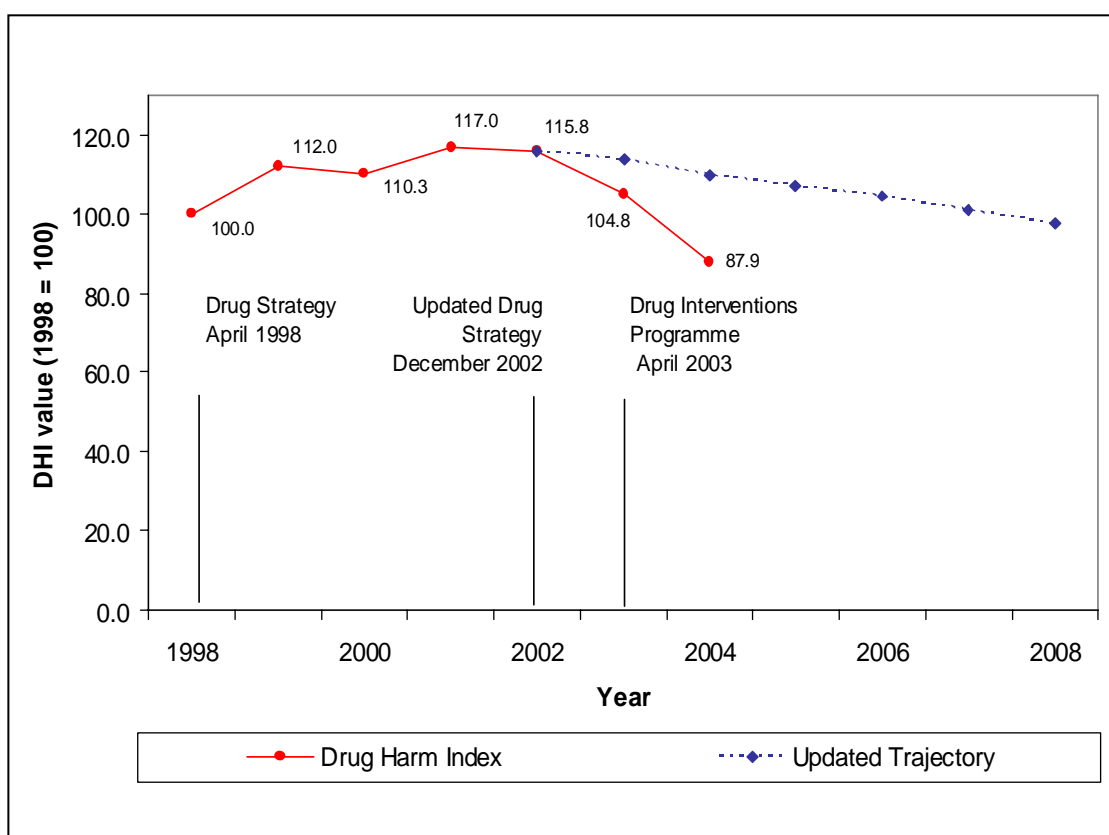
The Government's Drug Strategy is underpinned by a Public Service Agreement (PSA) target, which over the Spending Review Period 2005/06 to 2007/08 requires it to:

*“reduce the harm caused by illegal drugs, encompassing the availability of Class A drugs and drug-related crime, including substantially increasing the number of drug misusing offenders entering treatment through the criminal justice system.”*

The Drug Harm Index (DHI) was developed as the overarching measure for this PSA target. A technical account was published in March 2005 for data up to and including 2003 along with a full description of data sources and methodology (the report is available at [www.homeoffice.gov.uk/rds/pdfs05/rdsolr2405.pdf](http://www.homeoffice.gov.uk/rds/pdfs05/rdsolr2405.pdf))

The latest version of the DHI, which includes data for 2004, is presented in Figure S.1. This also shows the forward-look trajectory for the DHI (which has a 2002 baseline). Unfortunately the updated DHI is not complete, as the Health Protection Agency Centre for Infections currently has an embargo on their Hepatitis B surveillance data. To accommodate this, for 2004 the volume of new cases of drug-related Hepatitis B has been assumed to have remained constant at the 2003 level. However, the impact of holding this harm constant at its 2003 value should be minimal, as Hepatitis B has a relatively low weight in the DHI. A summary of performance against the drugs PSA target and the main drivers of change are given in Box S.1.

**Figure S.1: The Drug Harm Index and updated trajectory**



**Box S.1: Key points**

- Between 2003 and 2004 the DHI has fallen in value from 104.8 to 87.9, a drop of 16.9 points or 16.1 per cent. This compares to a nine per cent drop between 2002 and 2003.
- The previously reported fall in the DHI between 2002 and 2003 was primarily driven by reductions in the number of drug deaths, Hepatitis C episodes, commercial and domestic burglaries, BCS perceptions of drug nuisance and thefts of (domestic) vehicles. Taken together these accounted for 75 per cent of the change in DHI value between 2002 and 2003.
- The 16.9 point change in the DHI value between 2003 and 2004 is mostly due to substantial falls in a number of drug-related crime types (e.g. burglary, shoplifting, robbery and vehicle theft). The only significant health-related driver is drug-related deaths, but between 2003 and 2004 these increased from 1,255 to 1,427.
- Since the DHI technical paper was published in March 2005 there have been some minor improvements made to the methodology and some of the published data have been retrospectively updated by the data providers. This has had very little impact on the DHI except to increase slightly its value year-on-year but this makes little or no difference to the trend.

# 1. Background

## Drug harm and the Drug Strategy

The overarching aim of the Drug Strategy is to 'reduce the harm that drugs cause to society, including communities, individuals and their families'. To achieve this aim the Strategy has four supporting delivery strands centred on Young People, Treatment, Drug-Related Crime and Supply. Progress against delivery of the Drug Strategy is published regularly in a booklet titled "*Tackling Drugs. Changing Lives: Turning strategy into reality*". The latest version is available on the Drug Strategy website (at <http://www.drugs.gov.uk/publication-search/drug-strategy/strategy-facts-booklet?view=Binary>). The Home Office has also published "*Tackling Drugs. Changing Lives: Delivering the difference*", which provides a range of case studies showing how the Drug Strategy is making a difference to the lives of drug-misusing offenders, their communities and their families (available at <http://www.drugs.gov.uk/publication-search/drug-strategy/delivering-difference.pdf?view=Binary>).

## Measuring harm: responding to SR2004

The Government's success in delivering the aims of the Drug Strategy is measured by a set of Public Service Agreement (PSA) targets, established through the Spending Review process. The 2004 Spending Review settlement established three PSA targets for the Drug Strategy:

- reduce the harm caused by illegal drugs, encompassing measures of the availability of Class A drugs and drug-related crime, including substantially increasing the number of drug-misusing offenders entering treatment through the criminal justice system;
- reduce the use of Class A drugs and the frequent use of any illicit drug by all young people under the age of 25, especially the most vulnerable; and
- increase the numbers of problematic drug users in treatment by 100 per cent by 2008, and increase year-on-year the proportion of users successfully sustaining or completing treatment.

The Drug Harm Index (DHI) was developed in order to measure the first overarching target to reduce the harm from illegal drugs. It combines robust national indicators of the harms generated by illegal drugs into a single-figure time-series index. The harms include drug-related crime, community perceptions of drug problems, drug nuisance, and the various health consequences that arise from drug abuse (e.g. HIV, overdoses, deaths etc.). To enable a single index to be constructed, the harms are measured consistently according to their relative cost to individuals and society. Full details of all the harms captured in the DHI and the methodology used in its construction can be found in the DHI technical paper published in March 2005 ([www.homeoffice.gov.uk/rds/pdfs05/rdsolr2405.pdf](http://www.homeoffice.gov.uk/rds/pdfs05/rdsolr2405.pdf)).

## Constructing the trajectory

In order to monitor performance against expectations a forward-look trajectory was produced for the DHI and published in the technical paper. It was constructed by considering how the volumes and costs of each of the indicators might be expected to change between now and 2008 in response to policy interventions.

For example, evidence from the National Treatment Outcomes Research Study indicates that the offending rates of problematic drug users decrease while they are in treatment, and that

this is maintained for several years post-treatment.<sup>1</sup> Based on this, and a number of other simplifying assumptions, a model was created to estimate the impact that increasing the number of people in treatment would have on drug-related crime and that estimated reduction was then applied to the volumes of crimes captured in the DHI.

It was also possible to include the impact of treatment on future death rates in the trajectory model. However, there is not enough available evidence to model the impact of the Drug Strategy on all the other harms in the DHI. Therefore average growth rates in the last three years have been applied to all other harms in the DHI trajectory. Also, for simplicity, the unit costs for all the harms were estimated to increase by three per cent every year (although see Section 3 for information on new crime unit costs). These estimated costs and harm volumes were then used to determine the future value of the DHI.

This model and the underlying assumptions are continually being revised as more evidence becomes available, so it is most likely that each time the DHI is updated so will the trajectory be updated.

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<sup>1</sup> Gossop, M., Marsden, J. and Stewart, D. (2001), *NTORS after five years (National Treatment Outcome Research Study): Changes in substance use, health and criminal behaviour in the five years after intake*. London: Department of Health.

## 2. Results for 2004

The latest DHI is shown in Figure S.1. This shows that the value of the DHI has fallen from 104.8 to 87.9 between 2003 and 2004, a 16.1 per cent (or 16.9 points) drop, compared to a 9 per cent reduction between 2002 and 2003. Figure S.1 also shows that the DHI is currently well below its trajectory. This is primarily the result of greater than expected reductions in drug-related acquisitive crimes.

### Changes between 2003 and 2004

From year to year, the change in the value of the DHI is due to the weighted growth in the volume of harms (e.g. the number of new HIV cases or the number of drug-related burglaries), where the weights are constructed using information on unit economic or social cost of the harms (e.g. the expected cost per new HIV case or the average victim cost of a domestic burglary).

Between 2002 and 2003 the DHI fell by 10.25 points (as published in 2005). The primary drivers of this change were reductions in drug deaths, Hepatitis C, commercial and domestic burglary, BCS perceptions of drug nuisance and theft of (domestic) vehicles. Taken together these account for 75 per cent of the change in DHI value between 2002 and 2003. The main drivers of the 16.9 point reduction in the DHI value between 2003 and 2004 are summarised in Table 2.1. This time the dominant drivers of the change in the value of the DHI are mostly drug-related crime types. The only dominant health-related driver is drug-related deaths, but between 2003 and 2004 these increased (by 172), whereas they fell between 2002 and 2003.

Table 2.1 also provides a useful illustration of the importance of the weights and how these dampen the effect of large percentage changes in volumes. For example, Table 2.1 shows that the reduction in thefts of (commercial) vehicles is almost double the reduction in robberies. However, once these changes are weighted then the impact of robbery (2.19 points) is considerably higher than that of thefts of (commercial) vehicles (0.33 points).

**Table 2.1: Main drivers of change in harm (2003-2004)**

Indicator	Growth rate <sup>2</sup>	Weight (%)	Impact on DHI (points)
Drug Deaths	0.13	21.1%	2.71
Domestic Burglary	-0.38	16.5%	-6.24
Commercial Burglary	-0.31	15.6%	-4.77
Shoplifting	-0.23	9.6%	-2.22
Robbery	-0.18	12.4%	-2.19
Other theft	-0.26	7.1%	-1.82
Theft from vehicle (domestic)	-0.27	5.4%	-1.53
Theft of vehicle (domestic)	-0.28	2.9%	-0.81
Theft of vehicle (commercial)	-0.34	1.0%	-0.33
HIV (incl. indirect causes)	-0.13	1.8%	-0.23
Hepatitis C	-0.12	1.8%	-0.22

<sup>2</sup> Growth rates are expressed as differences in natural logs in keeping with the methodology used to construct the DHI. Further details can be found in the technical paper.

### 3. Methodological and data updates

Since the DHI technical paper was published in March 2005 some minor improvements have been made to the methodology. In addition, some of the published data used in the DHI have been retrospectively updated by the data providers (according to National Statistics protocols, where appropriate). This means that the DHI figures up to 2003 (shown in Figure S.1) are slightly different to those published in March 2005 but the overall impact is negligible. The extent of these changes and their impact on the DHI value are summarised below.

#### Methodological changes

The main methodological improvement has been to the measurement of unit cost estimates for the health harms, a necessary improvement flagged up in the March 2005 DHI paper. For infectious diseases, the unit cost estimates continue to encompass two key elements: (i) the cost associated with any loss of life and reduced quality of life incurred as a result of the disease and (ii) NHS expenditure on treating the infection.

When the DHI was first published it was only possible to include estimates reflecting the reduced quality of life for those suffering from Hepatitis B. Estimates have now been incorporated for Hepatitis C and HIV. In addition, the costs associated with reduced quality of life are now aligned with those used in Dolan *et al.* (2005).<sup>3</sup> The present value of the lifetime costs associated with infectious diseases are now estimated to be £845,000 for HIV, £301,000 for Hepatitis C and £16,000 for Hepatitis B.

#### Data updates

The DHI unit costs have been revised to incorporate updated cost-of-crime estimates that were recently published by the Home Office.<sup>4</sup> These cover domestic acquisitive crimes including burglary, theft of or from a vehicle, robbery and other thefts. The report provides new values for these harms for 2003 and retrospective estimates for 2000, which replace the 1999 values originally used in the DHI. Where new estimates are not available the original unit costs of crime are assumed to grow in proportion to the GDP deflator (as discussed in the March 2005 DHI paper). The implied GDP deflator, which is published by the Office for National Statistics,<sup>5</sup> has also been updated since the DHI was first published. The DHI now incorporates the most recent series.

Data on drug-related deaths have been revised retrospectively by the Office for National Statistics, as reported in the recently published Health Statistics Quarterly (vol. 29, 2006).<sup>6</sup> This revision only affects the 2003 data. According to the ONS website “Numbers for 2003 have been corrected from those published in *Health Statistics Quarterly* 25 due to an error in the coding of drug misuse deaths for that year”. The result of this is that the estimated number of drug-related deaths in 2003 has been revised downwards from 1,427 to 1,255. This change has been incorporated into the updated DHI.

Other historical volume data have been updated to reflect the most recently available figures. Most of these changes are very minor and include small increases in the number of HIV and Hepatitis cases known to be contracted through injecting drug use. Crime figures and conviction data from the Offenders Index are subject to minor revisions over time and these changes have been incorporated into the DHI.

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<sup>3</sup> Dolan, P., Loomes, G., Peasgood, T. and Tsuchiya, A. (2005) “Estimating the Intangible Victim Costs of Violent Crime”, *British Journal of Criminology*, 45(6):pp. 958-976.

<sup>4</sup> Home Office Online Report 30/05 available at <http://www.homeoffice.gov.uk/rds/pdfs05/rdsolr3005.pdf>

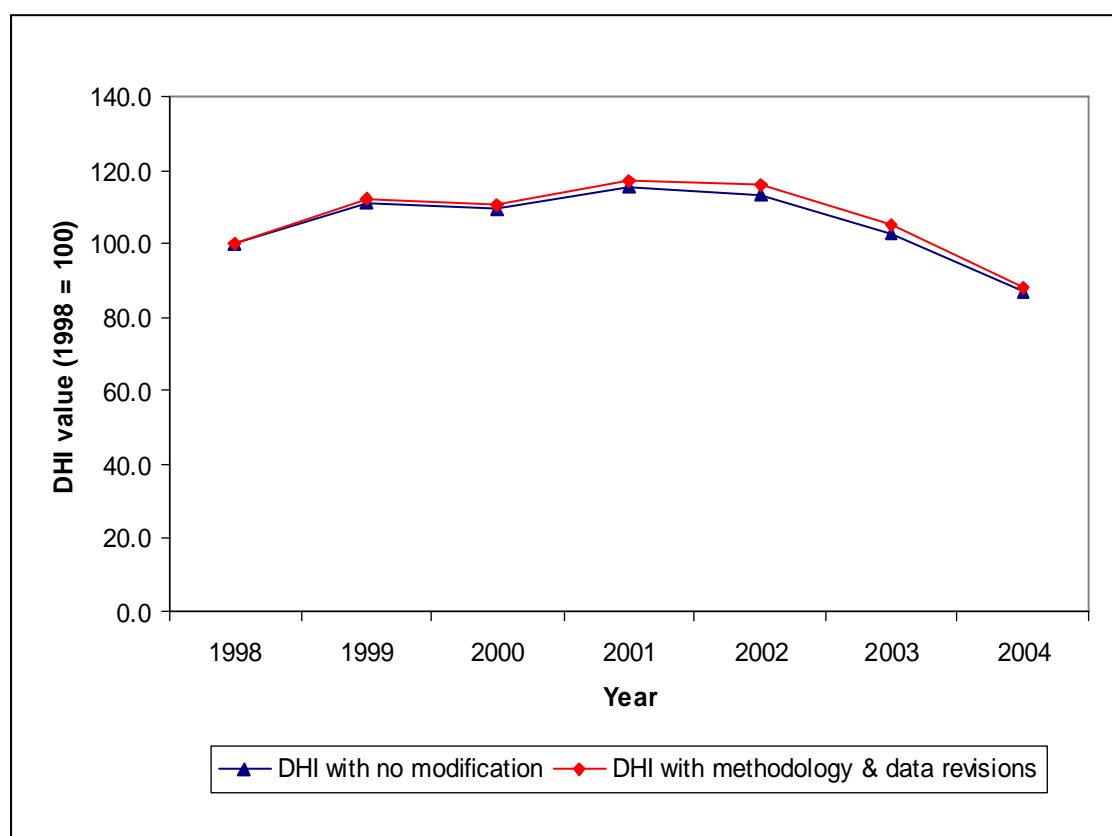
<sup>5</sup> Available at [http://www.statistics.gov.uk/downloads/theme\\_economy/BB2005.pdf](http://www.statistics.gov.uk/downloads/theme_economy/BB2005.pdf)

<sup>6</sup> Available to order from <http://www.palgrave.com/products/catalogue.aspx?is=0230003141>

## Impact of changes

These improvements have a negligible impact on the overall value of the DHI in the period 1998 to 2004. This is illustrated in Figure 3.1, which shows the DHI without any modification compared to the DHI with the methodological improvement and data revisions. The overall impact is to increase slightly the value of the DHI over the whole time period, although this is not an equal year-on-year change. To illustrate further the overall impact of these methodological and data changes, Table 3.1 shows what happens to the 2003 and 2004 values of the DHI as they are implemented.

**Figure 3.1: Overall impact of data and methodological changes**



**Table 3.1: Overall impact of data and methodological changes**

	2003	2004	Point change in DHI
DHI value without changes	102.9	86.9	-16.0
DHI value with data revisions	102.3	87.1	-15.2
DHI value with methodology and data revisions	104.8	87.9	-16.9

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