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Measuring the harm from illegal drugs:

the Drug Harm Index 2005

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Contents

List of boxes

List of figures

List of tables

Summary

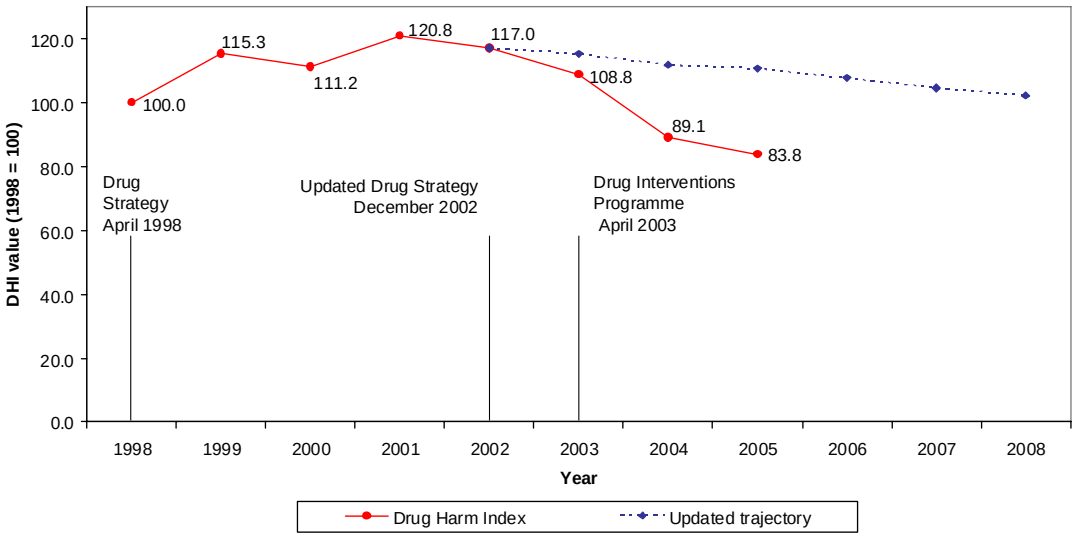
The Government's Drug Strategy is underpinned by a Public Service Agreement (PSA) target which, over the Spending Review Period 2005-06 to 2007-08, requires it to:

> "*Reduce the harm caused by illegal drugs (as measured by the Drug Harm Index 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.*"

The Drug Harm Index (DHI) was developed as the overarching measure for this PSA target. A technical account was published in March 2005 with data up to and including 2003, along with a full description of data sources and methodology. This report is available at www.homeoffice.gov.uk/rds/pdfs05/rdsolr2405.pdf. An update was published in March 2006 to incorporate some minor improvements to the methodology and data for 2004 (see http://www.homeoffice.gov.uk/rds/pdfs06/rdsolr0806.pdf). The PSA target requires that the DHI is lower in 2007-08 than in 2002.

The latest version of the DHI is presented in Figure S.1. The new series adds data for 2005 and incorporates revised data for earlier years. Figure S.1 also shows the forward-looking trajectory for the DHI (which has a 2002 baseline). A summary of the recent performance of the DHI and the main drivers of change is given in Box S.1.

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



Box S.1: Key points

- The DHI has fallen from 89.1 in 2004 to 83.8 in 2005. This is a drop of 5.3 points or 5.9 per cent. This compares to a decrease of 18.2 per cent between 2003 and 2004. The index has now fallen year-on-year since 2001.

- The fall in the DHI between 2004 and 2005 is largely due to further reductions in drug-related crime (most notably domestic and commercial burglaries, theft from a domestic vehicle, shoplifting and other thefts). In terms of the health-related indicators, drug-related hepatitis C cases had a noticeable downward impact on the DHI, but this was more than offset by an increase in drug-related deaths from 1,495 in 2004 to 1,608 in 2005. The only other variable with a large upward impact on the DHI was robbery.

- The previous DHI update included some minor methodological improvements. Whilst the latest version of the DHI retains these changes, there have not been any further changes to the methodology. However, certain data providers have retrospectively updated some of the historical data used to construct the DHI. Incorporating these data revisions has led to a slight increase in the value of the DHI between 1999 and 2004 compared to the previously published figures. However, these changes have made little difference to the trend over time.

1. Background

Drug harm and the Drug Strategy

The overall aim of the Drug Strategy is to reduce the harm that illegal drugs cause to society, including individuals, families and local communities. To achieve this aim, the strategy has four key delivery strands centred on: preventing young people from becoming drug misusers; increasing the number of users in treatment and improving treatment effectiveness; reducing drug-related crime; and reducing the supply of illegal drugs. 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 (www.drugs.gov.uk[1]).

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 (SR) process. The 2004 Spending Review settlement established three PSA targets for the Drug Strategy.

- Reduce the harm caused by illegal drugs (as measured by the Drug Harm Index 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.
- Increase the participation of problem drug users in drug treatment programmes by 100 per cent by 2008 and increase year-on-year the proportion of users successfully sustaining or completing treatment programmes.
- Reduce the use of Class A drugs and the frequent use of any illicit drug among all young people under the age of 25, especially by the most vulnerable young people.

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). To enable a single index to be constructed, the harms are measured and weighted together according to their relative costs to individuals and society. Full details of 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 (http://www.homeoffice.gov.uk/rds/pdfs05/rdsolr2405.pdf).

Constructing the trajectory

In order to monitor performance against expectations, a forward-looking 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

[1] The booklet can be accessed directly at http://www.drugs.gov.uk/publication-search/drug-strategy/strategy-facts-booklet?view=Binary

this is maintained for several years post-treatment.[2] Based on this, and a number of other simplifying assumptions, a model was created to estimate the impact of increasing the number of people in treatment on drug-related crime. This 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 insufficient evidence to model the impact of the Drug Strategy on all the other harms in the DHI. Average growth rates in the last three years have, therefore, been applied to all of the other harms in the DHI trajectory. For simplicity, the unit costs of all harms were assumed to increase by three per cent every year. These estimated costs and harm volumes were then used to project values of the DHI to 2008.

The trajectory model and the underlying assumptions are continually being revised as more evidence becomes available. As a result, the trajectory is updated each time the DHI is updated.

[2] 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 2005

The latest DHI is presented in Figure S.1. This shows that the value of the DHI has fallen from 89.1 in 2004 to 83.8 in 2005, a decrease of 5.9 per cent. Whilst this is a much more modest decrease than the 18.2 per cent reduction recorded between 2003 and 2004 (using the latest figures), the DHI continues to move further below its 2002 level, ensuring that the PSA target is met by an increasingly comfortable margin. Figure S.1 also shows that the DHI remains well below its trajectory. As noted in the previous update, this is primarily the result of greater-than-expected reductions in drug-related acquisitive crimes.

Changes between 2004 and 2005

Year-to-year changes in the value of the DHI result from 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 costs of the harms (e.g. the expected cost per new HIV case or the average victim cost of a domestic burglary).

Between 2003 and 2004, the DHI fell by 18.2 per cent (based on the latest available data). The main driver of this fall was drug-related crime, including domestic and commercial burglary, shoplifting, robbery, other theft and theft from a domestic vehicle. The largest upward impact on the index came from drug-related deaths.

Between 2004 and 2005, the DHI fell by 5.9 per cent. Whilst this is a less pronounced fall than between 2003 and 2004, many of the drivers of change remained similar.

- The largest downward impact again came from drug-related crime, particularly burglary, theft from a vehicle, other theft and shoplifting. However, the rate of decline in drug-related crime was lower than in the previous year, and this is the main reason for the lower percentage decrease in the overall DHI.
- As in 2004, the largest upward influence on the DHI in 2005 came from drug-related deaths. These increased from 1,495 in 2004 to 1,608 in 2005, although this is still some way below the 2001 peak of 1,805.

Not all of the dominant drivers of change in the latest version of the DHI are the same as for the previous version:

- there was an increase in the estimated number of drug-related robberies between 2004 and 2005 and as a result, this variable had an upward influence on the DHI in 2005, compared to a downward influence in 2004;
- drug-related cases of hepatitis C had a relatively large downward impact on the DHI in 2005, in contrast to an upward impact in 2004.[3]

The drivers of the change for the 2005 DHI are summarised in Table 2.1, below. By multiplying the growth rate of each indicator by its weight, it is possible to calculate the contribution of each harm to the overall growth rate of the DHI. Harms with a downward impact on the DHI in 2005 are denoted in green in the final column. Harms with an upward impact are denoted in red.

The table also provides a useful illustration of the importance of the weights attached to each indicator, and how these can dampen the impact of large percentage changes in volumes. For example, the rate of decrease in hepatitis C cases was almost twice as great as that of 'other thefts'. The much higher weighting attached to the latter, however, means that the overall impact on the growth of the DHI is broadly similar.

[3] In the March 2006 DHI update report, hepatitis C was shown to have a negative impact on the 2004 DHI. However, retrospective data revisions now suggest that there was a relatively large increase in drug-related hepatitis C cases in 2004. This is discussed further in Section 3.

Table 2.1: Drivers of change in harm (2004-2005)

Indicator	Growth rate[4]	Weight	Impact on growth of DHI (points)
Commercial burglary	-0.20	12.7%	**-2.55**
Domestic burglary	-0.19	13.0%	**-2.45**
Drug deaths	0.07	27.9%	**2.04**
Robbery	0.10	13.3%	**1.32**
Theft from vehicle (domestic)	-0.24	4.6%	**-1.07**
Hepatitis C	-0.29	3.2%	**-0.94**
Other theft	-0.15	6.1%	**-0.93**
Shoplifting	-0.11	8.6%	**-0.93**
Theft of vehicle (domestic)	-0.30	2.3%	**-0.70**
HIV	0.11	2.0%	**0.22**
Theft of vehicle (commercial)	-0.28	0.8%	**-0.21**
Perceptions of drug nuisance	0.05	3.1%	**0.15**
Recorded trafficking offences	0.05	1.3%	**0.06**
Bike theft	-0.07	0.4%	**-0.03**
Mental & behavioural problems	-0.07	0.4%	**-0.03**
Theft from vehicle (commercial)	-0.14	0.1%	**-0.02**
Overdoses	0.11	0.1%	**0.01**
Neonatal effects	-0.04	0.1%	0.00
Hepatitis B	0.00	0.0%	0.00
Total		**100%**	**-6.08**[5]

[4] The growth rates in the table 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.

[5] The sum of the numbers in the final column suggests that the DHI decreased by 6.1 per cent between 2004 and 2005. This is slightly different to the figure of 5.9 per cent quoted within the commentary (e.g. in Box S.1). This discrepancy occurs because the DHI model calculates the growth rate of the DHI using differences in natural logs. The growth rates mentioned in the text are simple percentage changes.

3. Changes to the historical series

The previous DHI update included some minor methodological improvements. Whilst the latest update retains these changes, there have not been any additional amendments to the methodology.

However, as with the previous version, data providers have retrospectively updated some of the published data used to the construct the DHI (according to National Statistics protocols, where appropriate). As a result, the DHI figures up to 2004 (shown in Figure S.1) are slightly different to those published previously. The impact of these changes on the DHI is summarised below.

Data updates [6]

One of the most notable changes has been to the definition of data on drug-related deaths. For the first time, the Office for National Statistics (ONS) has published figures for the number of deaths *registered* in each calendar year. In the past, this dataset recorded the number of deaths *occurring* in each calendar year.[7] As well as publishing the new data for 2005, ONS has retrospectively revised figures back to 1993 on a consistent basis, and these have been incorporated into the updated DHI. The latest ONS data show that there were 1,495 drug-related deaths in 2004, compared to the previous estimate of 1,427 (an increase of 5 per cent). For certain earlier years, the difference between the latest and previous figures is even greater (e.g. an increase of 14 per cent in 2003 and 11 per cent in 2001).

Other historical volume data have also been updated to reflect the most recently available figures. This has resulted in minor changes to the number of drug-related HIV cases between 2002 and 2004, and mental health and behavioural problems pre-2003. There have been proportionately larger increases in the number of drug-related hepatitis C cases in 2003 and 2004, and in the number of overdoses pre-2002. The low weighting of the overdose statistics means that the latter change has had little impact on the overall DHI. The hepatitis C data have a slightly greater weighting, however, and this indicator now has a noticeable upward impact on the DHI in 2004, in contrast to the downward impact reported in the previous update.

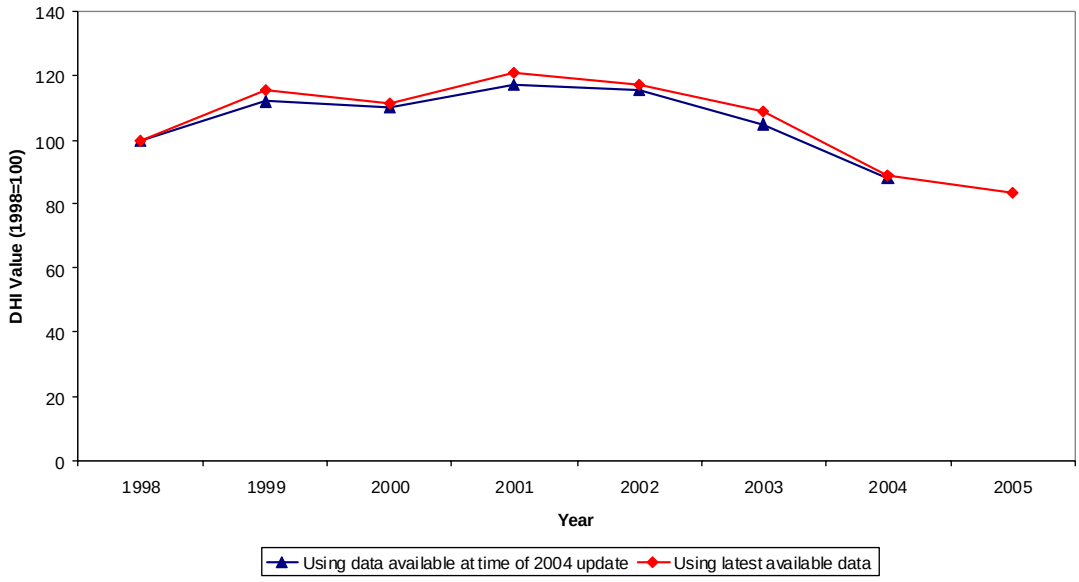
Last year's DHI report noted that the Health Protection Agency Centre for Infections had imposed an embargo on their hepatitis B surveillance data. This remains in place and it has once again been necessary to assume that the volume of new cases of drug-related hepatitis B remained constant at its 2003 level (the last year for which data are available). As noted previously, the impact of this should be small due to the relatively low weight of hepatitis B in the DHI.

Impact of changes

The overall impact of the historical data revisions on the DHI is illustrated in Figure 3.1. The blue line shows the version of the index published in March 2006, using the data available at that time. The red line shows the most recent version of the DHI, incorporating data for 2005, plus revised figures for earlier years. The impact of historical data revisions is to increase slightly the value of the DHI between 1999 and 2004. However, the overall trend over time has remained broadly unchanged.

[6] For a full description of the data sources used in the DHI, see Appendix A of the March 2005 technical paper.
[7] For full details, see Health Statistics Quarterly No 33, Spring 2007, pp82-88, available at http://www.statistics.gov.uk/downloads/theme_health/hsq33web.pdf .

Figure 3.1: Overall impact of data updates



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