The science of harm

In the last *Druglink*, a Home Office analyst detailed the inner workings of the government's Drug Harm Index. Here, **Dr Russell Newcombe** explains why, as a method of measuring the damage drugs cause to society, the DHI is deeply flawed.

THE purpose of the Drug Harm Index (DHI) is to provide a single annual figure which can be used to assess rising or falling trends in overall drug-related harm. This 'summary statistic' combines figures for 19 types of harm, and is based on an equation involving the annual number of incidents multiplied by the unit economic cost for each harm.

The DHI was designed in order to measure outcomes on one of the government's Public Service Agreement (PSA) targets – reducing drug-related harm. A policy target has two components: a requisite performance indicator which measures risk, harm and intervention levels, and a specification of anticipated change between a baseline year and a deadline year.

But there is a problem with this. The government's performance indicators are selective and unrepresentative, the proposed changes are based on direction, rather than amount, of change and the proposed deadlines have no rational justification. In short, core components of the targets appear to have been 'plucked from the air'.

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CONCEPTUALLY WEAK

The DHI is clearly capable of crunching an impressive array of data using a sophisticated mathematical model – the problem is that it has been built on inadequate conceptual foundations. When we deconstruct the DHI – identify and examine its components, consider what it does not do – four major weaknesses can be found which seriously question its validity and reliability.

First, the DHI papers make no attempt to define or distinguish the core concepts of harm, benefit and risk. Many, if not most, consequences of drug use have both harmful and beneficial aspects – such as sending a drug user to prison for dealing or burglary, which reduces harm to the community (at least for a few months or years), but increases harm to the drug user (high chance of losing their job, house or partner). Thus, whether imprisonment is classified as a general harm or benefit depends on the perspective of the classifier.

Furthermore, no attempt is made to generate a systematic classification of harms and benefits. There is also little distinction made between drug users and the other main recipients of drug-related harms and benefits: their associates, such as relatives, children, friends, colleagues and neighbours. These are critical issues – yet none of the documents reporting the DHI consider the distinction between drug-related harm and benefit. Nor do the authors recognise that deciding which things are harms or benefits is ultimately a political or moral act. Or, are they really implicitly suggesting that drug use has no benefits?

Similarly, risk – drug consumption behaviour which results in harmful consequences – is totally neglected by the DHI. Risk includes products, access, patterns, amounts, methods, mixtures and contexts of drug use. As the source of all drug-related harm, consumption variables should be central to the DHI model. For example, levels of adulteration in street drugs (product), crime to fund drug use (access), daily use (patterns), heavy use (amount), needle sharing (method), speedballing (mixtures), and using in 'drug houses' (setting). In short, the DHI should be a cost-benefit analysis (not just a cost index), incorporating causes (drug-related risk behaviours) as well as consequences (drug-related harms and benefits).

The DHI has major weaknesses arising from its neglect of scientific principles and practices for constructing conceptual models – such as operational definitions, category dimensions and comprehensiveness. In other words, the key terms and procedures appear to have been generated simply through a process of common-sense reasoning, rather than by using scientific rules – as is usually the case when social scientists develop an adequate conceptual model of some phenomenon or phenomena.

UNFAIR SELECTION

The DHI authors state that the 19 harms were selected by the sole criterion that 'robust data' was available on them – which fits the picture, because they are a somewhat arbitrary and far from comprehensive selection. The data used to measure the harms were, typically, official statistics from routine monitoring systems such as Hospital Episode Statistics and annual surveys like the British Crime Survey. These indicators vary widely in their levels of reliability and validity. For instance, the number of drug-related deaths is influenced by many factors other than drug policy and very different figures can be presented depending on which types of death are included or excluded such as drug-related suicides, homicides, and drug-driving fatalities.

Unsurprisingly, except for their economic costs, the 19 types of harm are not defined in any of the papers on the DHI. Thus, understanding what they mean requires finding and noting the detailed criteria underlying the official 'count' by which they are measured (usually hidden away in the Notes at the back of annual government bulletins).

More worryingly, given the lack of any theoretical model of drug-related harm, the DHI is inevitably based on an unrepresentative selection of harm variables. It does not justify why it operates at particular levels of categorisation for different harm variables such as all deaths, rather than fatal overdoses, lethal diseases etc. In particular, the DHI neglects: major categories of drug-related offences, notably drug possession, prostitution, begging, fraud and deception, drug-driving and violent offences; numerous health-harms involving both injecting and general drug-taking; and various drug-related social and psychological harms such as paraphernalia in public places, stress and stigma to relatives of users, social exclusion and drug use in the workplace.

Third, the weightings given to different drug-related harms, though based on sound mathematics, come over as counter-intuitive from viewpoints other than those of government officials and economists. For instance, in the first two annual DHI reports, crime accounted for about two-thirds of the weighting, and death for only a fifth. Rather than being some objective reflection of the impact of real-world drug-related harms, these weightings are 'biased' by two key political influences. There is a particular government perspective on drug-related harm which underlies the DHI. For instance, a drug user or their relatives would undoubtedly regard their death as a far more salient harm than their contribution to acquisitive crime. In addition, the central role of the economic costs of drug-related harms in the DHI, which do not always reflect the associated social and psychological costs.

The DHI makes the unjustified assumption that very different kinds of drug-related harm can be intelligibly treated as comparable variables within a general conceptual model. Yet, a single-figure indicator for complex systems like the weather – wind, rain, temperature and sunlight – would show how stable or changeable the weather was overall, but would be of little practical use. For example, a weather index of 110 would not help you decide whether you should take an umbrella, sunglasses or scarf out with you. Indeed, the authors themselves have noted that the DHI would be most useful when considered alongside a 'basket' of key individual harms.

At the very least, there is a strong argument for keeping separate, at least initially, measures of biological and medical harm, psychological harm and social harm. Lastly, many drug-related harms have no obvious quantifiable economic cost. For instance, these include the various mental states of drug users and their families and relatives – from cognitive deficits like forgetfulness, to negative emotions like anxiety and shame – and it is not clear how such variables would be represented in the DHI.

In my view, the best thing the designers of the DHI could do is carry out a thorough conceptual analysis of drug-related risks, harms and benefits and develop a clearer picture of what the DHI does and does not cover. The DHI could then be expanded and improved to reflect a more comprehensive and well-defined range of risks, harms and benefits. Then, for instance, if a salient harm was found to be neglected, estimates of its impact could be made while official measures were being set up.

CLASSIFICATION

A well-developed model of drug-related risks, harms and benefits would also be a useful tool for a government review of the legal classification of drugs according to an objective, scientific framework, rather than a political-moral ideology. Indeed, it is difficult to envisage how this task could be adequately achieved without the development of at least a comprehensive conceptual model – and at best a full-blown multi-disciplinary scientific theory – of risks, harms and benefits.

A revised classification of drugs based on relative harms and benefits would also need to find ways of distinguishing harms and benefits arising from drug use per se from those arising from the legal prohibition of these drugs. For instance, harm caused by the pharmacology of the drug, such as overdosing on too much diamorphine, as compared with harm caused by the adulterants and contaminants in the drug product, like additives and bacteria in street heroin. A related issue which also requires careful consideration is whether the harms and benefits arising from each type of drug use would be higher or lower under a controlled availability system compared with a prohibition system. •

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http://www.homeoffice.gov.uk/rds/notes/rdsolr2405.html