A Guide to the Practical Application of the New Zealand Drug Harm Index 2016

Citation: McFadden Consultancy. 2016. *A Guide to the Practical Application of the New Zealand Drug Harm Index 2016*. Wellington: Ministry of Health.

Published in April 2016
by the Ministry of Health
PO Box 5013, Wellington 6145, New Zealand

ISBN: 978-0-947491-77-2 (online)
HP 6372

This document is available at health.govt.nz

Contents

Background

The following is a guide to the practical application of the New Zealand Drug Harm Index (DHI) 2016. More detail on the definitions and methodology underlying the DHI is available in the main report, *The New Zealand Drug Harm Index 2016*, published by the Ministry of Health in 2016. In brief, the 2016 DHI is a comprehensive evaluation of the costs of harmful illicit drug use. Estimates of total harm, harm per kilogram of drug consumed and harm per user are included. Illicit drugs include legal drugs diverted to the illicit drug market and exclude alcohol and tobacco.

It was estimated that, in 2014, illicit drug use cost New Zealand $1.85 billion. Community harms were the largest single category of social cost at $892.7 million, followed by personal harms at $601.0 million and the cost of interventions at $351.4 million. Overall, the social cost of drug use was estimated at $33,800 per year for dependent users and $2,300 per year for casual users.

Three points should be noted.

- The DHI is a living document and the drug-types that comprise the Index and their estimated harm will change over time. Researchers are advised to contact the Ministry of Health to confirm the most recent estimates available.
- The DHI 2016 was designed to provide a means of evaluation that is consistent across studies. It does not preclude the use of other forms of evaluation and, in fact, the use of alternative methods in addition to the DHI will result in more robust conclusions.
- The application and interpretation of the DHI involve judgement on the part of researchers and policy makers. In a complex environment, different sets of assumptions may be relevant in different circumstances. These assumptions should always be stated clearly.

There are two primary applications of the DHI: estimating the social costs of drugs, and the evaluation of programmes and interventions. These two applications are treated in Steps 5 and 6 of this document. It is assumed that the reader will be more interested in one or the other. As a result, the sections on social costs and evaluation are stand-alone components. This involves some repetition across the sections.

Note that this guide is not intended as a primer for those attempting a formal evaluation for the first time. It assumes a good knowledge of and prior experience with evaluation techniques.

Measuring the social cost of illicit drug use

The 2016 DHI provides a method for estimating the cost of illicit drug use in society as a whole or within sub-groups. Researchers must be quite clear about their aims. The following steps outline the development of estimates of social costs.

Step 1. Specifying the social costs of interest

The DHI consists of three categories of social costs and nine components, as shown in the following table.

Category of social cost	**Components**
Personal harm	• Premature death • Loss of quality of life
Community harm	• Family and friends • Acquisitive crime • Organised crime • Reduced tax base
Intervention costs	• Health • Police and Customs • Courts and Corrections
Total social cost	• All components

Past research has tended to concentrate on total social cost, but the opportunity exists to refine these figures further. At this point it is possible to report at the category level. Details of the component level are available in the full report, although at this stage reporting at this level is not encouraged, mainly due to scarcity of data for some detailed attributes.

Step 2. Specifying the user group of interest

There are two user groups: dependent users and casual users. The full report has more detail. In general, these groups tend to be reported in aggregate, but these groups can be reported separately. This would certainly be of interest in any longitudinal analysis.

Step 3. Specifying drugs of interest

Drugs of interest covered four main groups as well as specific drug types. Again, the full report has details of the derivation of these classifications. The following table has details.

Illicit drug group*	**Illicit drug type***
Amphetamine-type stimulants	• Amphetamine • Methamphetamine • Dexamphetamine • Pharma-stimulants • Cocaine
Cannabinoids	• Cannabis • Synthetic cannabis
Hallucinogenic and psychedelic drugs	• LSD • Ecstasy • Ketamine
Opioid and sedative drugs	• Pharma-opioids • Heroin/homebake • Pharma-sedatives • GHB
All groups	• All types

* Researchers should note that the choice of level of analysis (i.e. group or type) will have an impact on the measures available for analysis (refer Step 4).

In general, estimates at the group level are more robust than those at the type level, primarily because they involve larger data sets. Of course, combining different drug types into a single drug group will involve loss of detail.

Step 4. Specifying measures of social cost

The DHI includes two basic measures of social cost. The first, a consumption-based estimate, estimates the harm incurred over one year associated with the consumption a kilogram of a drug group. This measure is only available at the drug group level at this point due to the sparsity of consumption data for some drug types. Estimates of the social costs associated with being a dependent or a casual user are available at the drug-group and drug-type level. These costs are equivalent to those incurred during one year of dependent or casual use. Please heed the cautionary note in Step 5 in relation drug-type estimates.

Details of cost estimates by the categories outlined in the previous steps are provided in the tables on the following pages.

Step 5. Identifying the relevant cost estimate

At this point, the researcher should be able to identify the cost estimates relevant to their requirements and calculate estimated costs based on their data. Estimates for specific drug types are provided below. Kilogram estimates are based on the pure component except in the case of cannabinoids where the dry leaf equivalent applies. It should be noted that these are preliminary estimates based on an initial survey of an expert panel and should be treated with caution at this stage.

Drug-group estimates of social cost per kilogram, dependent user and casual user

Drug group	Personal harm per kg ($)	Community harm per kg ($)	Intervention costs per kg ($)	Social cost per kg ($)	Social cost per dependent user ($)	Social cost per casual user ($)
Amphetamine-type stimulants	872,000	311,000	56,000	1,239,000	116,600	8,300
Cannabinoids	9,000	26,000	11,000	47,000	29,100	2,100
Hallucinogenic and psychedelic drugs	334,000	375,000	221,000	929,000	6,200	400
Opioid and sedative drugs	160,000	144,000	48,000	352,000	44,300	3,200

Drug-type estimates of social cost and harm per dependent user and casual user

Drug type	Social cost per dependent user ($)	Social cost per casual user ($)	Harm per dependent user ($)	Harm per casual user ($)
Methamphetamine	116,600	8,300	111,300	7,900
Heroin/homebake	104,000	9,300	98,600	8,800
Pharma-opioids	44,300	3,200	38,300	2,700
Cocaine	42,300	2,700	36,200	2,300
Synthetic cannabis	42,000	2,800	35,900	2,400
Pharma-sedatives	38,200	2,600	31,800	2,200
Amphetamine	37,500	2,500	31,000	2,000
Dexamphetamine	33,600	2,400	27,000	1,900
Ketamine	32,900	2,500	26,200	2,000
GHB	32,100	2,600	25,400	2,100
Pharma-stimulants	31,400	2,200	24,600	1,700
Cannabis	29,100	2,100	22,100	1,600
LSD	6,200	2,200	4,700	1,700
Ecstasy	6,200	400	4,700	300

Evaluating illicit drug programmes and specific interventions

In general, the DHI has been used mainly to evaluate the success of programmes and specific interventions. Researchers interested in evaluation will need to complete Steps 1−5 outlined previously as the first stage of their evaluation before proceeding.

Step 6. Estimating the extent of benefits related to an intervention

Social costs include both the cost of personal and community harms and the cost of interventions. In measuring the benefits associated with an intervention or programme it is the personal and community harms that are of interest, not the cost of interventions. This is discussed at greater length in the full report. At this point it is assumed that researchers will use the cost of harm in their evaluations, not the total social cost, unless there are compelling reasons to do otherwise. Again, researchers are reminded to treat harm estimates at the drug-type level with caution.

The calculation of the extent of benefits will depend on the type of intervention involved. In the past, law enforcement has tended to assume that drugs seized are effectively eliminated from the community, and the full harm per kilogram applied. This was in line with expert advice at the time. However, it is now realised that illicit drug shortfalls may be temporary. It is recommended that law enforcement consider the likely period it takes to replace an amount of drugs seized.

In Australia, for example, it has been estimated that heroin importations tend to take three to six months from time of importation to the appearance of the drug on the streets. The time from the placement of the initial order will of course be longer. A more accurate assessment of the delay in replacing seized drugs would result in a more accurate estimation of the benefits of seizures. As a starting point, an effective benefit life of six to nine months is suggested for seasonal and imported drugs. A benefit life of three to six months is plausible for locally produced synthetic drugs. Local knowledge should be preferred to the broad estimates given here, but these should be fully documented.

The situation for treatment and education programmes is equally critical, and equally obscure. A reasonable estimate of the likely benefit life of an intervention needs to be based on evidence. There is room for more flexibility here. Estimates based on costs relating to class of user could be employed rather than attempting to measure actual reduction in consumption. A reduction in the status of a user from dependency to casual use or non-use will result in considerable benefits to the individual and the community that can be estimated in dollar terms. The available evidence on recidivism among drug users that successfully complete a treatment programme is also critical to an overall assessment.

In short, the benefit life of an intervention is a necessary component of any evaluation, and the responsibility of individual researchers to provide a plausible estimate of its value.

Step 7. Measuring the costs of interventions

In general, most evaluations involve some type of benefit−cost analysis, whereby the benefits of the programme are presented as a ratio to the costs. For example, “The programme returns $5.50 for every dollar invested in it”. It is beyond the scope of this paper to define what should and should not be included in costs. It is clear that these costs should be precisely defined so that comparisons between interventions or programmes can be made, with adjustments as required.

Given that that the DHI provides a level playing field for the comparison of benefits, a similar attempt at a uniform methodology for the estimation of costs is highly recommended. As far as government services are concerned, it would be useful to have advice from a central agency on this issue. In the absence of such advice, government agencies should at least adopt a uniform approach within their own sphere of activity.

CLOSING COMMENTS

In the end, an emphasis on clarity and transparency in evaluating programmes and interventions is essential if we wish to compare the cost effectiveness of various interventions and provide an evidence base for future policy development. The DHI itself should not be seen as a limiting factor. If better sources of the costs associated with drug harms become available, then the DHI should be updated accordingly. The emphasis is on development and the adaptability of our response to a constantly changing illicit drug market.

The main obstacle, both in New Zealand and globally, to the development of best practice interventions and evidence-based policy is the lack of available and valid data sets. It was the aim of the 2016 DHI to contribute to that evidence base. There are limitations, however. The major restriction on any work in the area is that drug trafficking is illegal. Collecting information on drug prevalence is an attempt to gauge an illegal activity and, as with all illegal activities, there are obvious barriers to this collection. The measurement of specific harm is often beset with similar problems. As always, caution is advised in interpreting the results.

The 2016 DHI attempted to address these issues by using conservative estimates of key parameters and by verifying these, where possible, against other data sources. Every effort was made to ensure that the new DHI is transparent. The 2016 DHI was constructed as a living document that can be updated according to need. As such, the development of the DHI will never be finalised as long as users, illicit substances and drug markets continue to evolve. It is hoped, however, that by managing a changing environment the DHI will maintain its relevance and value in the policy-making process.