

Constant increases in drug-related deaths under Australian Harm Reduction policy



**DRUG
FREE**
AUSTRALIA

This document demonstrates that Australia's introduction of Harm Reduction interventions under its 'Harm Minimisation' drug policy consistently correlated with sharp increases in drug-related deaths from all illicit drug types. In the absence of viable confounders this suggests a causal relationship between Harm Reduction policies and increased harm and mortality.

The document then examines scientific studies and population statistics related to Harm Reduction's existing interventions, examining how each contributes to rising mortality tolls in every jurisdiction that has sought to implement them.

Each of these Harm Reduction interventions demonstrates a track-record of ineffectiveness while increasing drug use, harm and mortality.

This document seeks to be comprehensively evidenced and media or casual readers are encouraged to review the Executive Summary.



**The Science
consistently
demonstrates
constant increases
in drug-related harm
and deaths under
Australia's
Harm Reduction**

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Executive Summary

Australia's Harm Reduction track-record

Australia moved to a Harm Reduction framework called Harm Minimisation in 1985, the world's leader with its novel Harm Reduction approach. ***Under its patronage illicit drug use went to the highest levels in the OECD developed world by 1998***, effectively double that of almost any OECD nation. Opiate overdose deaths peaked in 1999 at 7 per 100,000, with the media clamouring for change.

In 1998 the Tough on Drugs policy commenced, giving drug prevention, rehabilitation and drug interdiction precedence over harm reduction. Use of any illicit drug decreased 39%, with opiate deaths reducing by 67% (2.2 /100,000) through to 2007.

In 2007, Tough on Drugs was scrapped, with Harm Reduction again given the ascendancy. Illicit drug use increased 34% by 2022, ***and opiate deaths increased back towards pre-Tough on Drugs levels at around 5.75/100,000, two-and-a-half times higher than 2007.***

The pattern of sharp increases in drug use and drug related deaths under a predominant Harm Reduction approach holds true for every illicit drug type, as well as alcohol use. The boom-bust-boom pattern holds for all.

Unacceptable levels of harm

In the absence of any viable confounders, Australia's experience with Harm Reduction suggests causality in regards to increased use and deaths, and demonstrates that Harm Reduction does produce unacceptable levels of harm.

Of course, the increases in drug-related mortality inevitably go hand-in-hand because drug use will always create more harm and mortality - if it didn't there would be no need for Harm Reduction programming. Even the

very nomenclature of 'Harm Reduction' tacitly concedes this equation of unacceptable harm.

Because Harm Reduction interventions have consistently failed to decrease actual drug harms, Australia has been the beneficiary, under any ascendent Harm Reduction policy, of demonstrably increased drug-related mortality and other harms.

The seeds of HR failure lie in its derogation of drug prevention, where, as for shoplifting, it is happy for people to be educated it is harmful, while not tolerating a finger lifted against it. This is the internal dynamic of Harm Reduction's failure and increased use and harm.

All Harm Reduction interventions ineffective

This document demonstrates that each of the major Harm Reduction programs/interventions, from their own science or statistics, is ineffective and harm-producing. These interventions are thereby unable to actually reduce the harms they are tasked with suppressing. In a section by section examination of empirical evidence, this will be shown to be consistently true.

Opiate Substitution Therapy (OST)

The 2009 Cochrane Collaboration gold-standard review of 11 OST Random Control Trials found no statistically significant advantage for methadone maintenance as compared to no treatment for reductions in either criminality or mortality. These are the very things it is meant to reduce.

A 2017 Cochrane Collaboration examination of OST in reducing Hepatitis C (HCV) transmission could only make conclusions from 28 studies where almost all had either an adjudged 'serious' or 'critical' risk of bias. Any findings from that review must be moderated by the authors'

own determinations of bias for those studies. This measure extends drug-use careers, harm and mortality.

Needle & Syringe Programs (NSP)

The world's most prestigious 2007 review of NSPs by the US Institute of Medicine, which a decade before had expressed enthusiasm for the intervention even before adequate scientific studies had been completed, concluded that the science regarding HIV transmission reductions was 'limited and inconclusive' and that studies demonstrated no effectiveness with HCV.

It further found that 'ecological' studies cannot establish causality for NSPs, a determination which immediately disqualifies Australia's two most prominent studies claiming NSP effectiveness with both HIV and HCV transmission reductions.

The aforementioned 2017 Cochrane Collaboration review which also examines NSP impact on HCV found not one study not at serious or critical risk of bias. Furthermore, Australia's most prominent Harm Reduction advocates lament the failure of NSP to reduce HCV, at levels generally not superior to other countries.

NSPs likewise prolong drug-use careers, subjecting users to many added years of mortality risk from drug overdose or blood-borne virus illness.

Injecting Rooms

There is only one defensible review of injecting rooms worldwide that selects rigorous studies of quasi-experimental design. All other reviews, consequently scientifically invalid, are based on loose service evaluations of such facilities worldwide.

The RAND review found 5 studies that passed the test for rigour, while being unaware that the Vancouver study of reduced overdoses around its injection facility has been previously discredited, with abundant evidence demonstrating that policing changes were responsible for overdose reductions, not the facility.

A second Sydney study claiming that its injection facility had markedly reduced ambulance overdose callouts is likewise falsified by the study's own internal data, where reductions in callouts were significantly greater at night when the injecting room was closed. Again changed policing with sniffer dogs, most active at night, was very evidently the cause.

Data from the Melbourne injecting room shows that it failed to meet its legislated objectives, while hosting drug overdoses 102 times greater than on the street, evidencing experimentation by clients with bigger doses of heroin and cocktails of dangerous drugs. The facility also fails to save any lives at the population level.

Injecting rooms keep users addicted, prolonging drug using careers which extend the risk of harm and death.

Pill testing

Of the 392 MDMA related deaths between 2000 and 2018 in Australia, pill testing fails to address the real causes of such pill deaths in this country. Pill testing cannot identify those who will die from allergic-like reactions (14%), or those who will co-use ecstasy with other legal or illegal drugs (48% of deaths), or those who are accident-prone while intoxicated (29% of deaths).

There have only been 3 'bad batch' deaths over those years, implicating MDMA as the drug responsible for almost every Australian ecstasy death. Yet Pill Testing greenlights ecstasy in a pill, giving the thumbs-up to a killer drug. This will keep adding to our mortality toll.

Drug Decriminalisation

The experience of Portugal, which started the worldwide rush to decriminalising the use of all illicit drugs in 2001, demonstrates why this Harm Reduction measure will significantly add more drug-related mortality and harm.

Portugal's adult drug use increased 59% by 2016, with use by high-school minors shooting up by 80% by 2011, but in 2019 back to 24% above 2001 levels. Overdose mortality though, is going exactly the same way as Australia's under a predominant Harm Reduction, showing that decriminalisation will add to death tolls.

Drug Legalisation

Colorado created loose medicinal cannabis laws in 2009, legalised recreational cannabis use in 2013, and by 2015/16 had seen a doubling of adult cannabis use, a 360% increase in cannabis-related hospitalisations, a 230% increase in cannabis-related road deaths and a 410% increase in cannabis-related suicides. All this while-the black market for cannabis mushroomed. This Harm Reduction measure increases death tolls.

We know exactly what works

We examine the drug prevention results of four countries:

- Sweden** - reduced student illicit use **80%**
- Iceland** - reduced student illicit use **60-90%**
- Australia** - reduced illicit all-ages use **40%**
- USA** - reduced student use **50-70%**

The 2022 survey of 21,000 Australians and their attitudes to illicit drug use shows they want less drug use, not more. Of the drugs that Harm Reductionists want to decriminalise, 99% of Australians do not give their approval to the use of heroin, 99% to use of speed and ice, cocaine (97%) and ecstasy (95%).

Again, Australians clearly want LESS drugs, not more.

All we lack is the political will . . .

The track-record of Australia - Harm Reduction world leader

Australia led the world in Harm Reduction

As per the text of the Guardian [article](#) copied below, Australia led the world in 1985 in initiating a Harm Reduction national drug policy for its citizens.

As the article describes, its concept of Harm Reduction or 'Harm Minimisation' in 1985 was novel to UN participant countries. The Guardian records:

On 2 April 1985, the then prime minister, Bob Hawke, convened a meeting in Canberra with all six state premiers and the chief minister of the Northern Territory. The special premier's conference, usually

referred to as the “drug summit”, was said to be the first meeting of the prime minister and premiers since the second world war to discuss anything other than finance. Of the eight governments represented, five leaders (Hawke; Neville Wran, NSW; John

Cain, Victoria; John Bannon, SA, Brian Burke, WA) represented Labor governments while three leaders (Joh Bjelke-Petersen, Queensland; Robin Gray, Tasmania; Ian Tuxworth, NT) represented National or Liberal party governments.

One of the items raised and approved at the drug summit, along with a raft of other decisions, was a proposal to adopt “harm minimisation” as Australia’s official national drug policy. This decision was to have far reaching repercussions.

When Australia adopted harm minimisation in 1985, both the term and the concept were novel in other countries and in the UN system. But harm reduction, the preferred term outside Australia, has now become the mainstream global drug policy with all of the major UN organisations responsible for drug policy, as well as international organisations like the Red Cross. While there are still some exceptions to this trend, in countries such as Sweden, Russia and Saudi Arabia, and in a few minor UN organisations with responsibility for drug policy, these are diminishing. And while US officials are still required to avoid using the term “harm reduction”, US opposition to harm reduction is also declining.

In summary, Australia’s world-leading Harm Reduction policies have been in place for 40 years and have led to the world following suit, with Harm Reduction now central to the drug policy of most nations across the world.

Australia becomes drug-use world leader

Australia statistically tracks many aspects of its drug policy, making Australia a central case study for the success or failure of Harm Reduction policies.

From the first implementation in 1985 of the new Harm Reduction policy, use of the most predominant drugs according to the National Drug Strategy Household Surveys showed very substantial increases between 1988 and 1998, where 1998 was the survey in which drug use peaked at its highest levels. Metropolitan use increased as follows:

- **Amphetamine** increased 500%
- **Cannabis** increased 300%,
- **Cocaine** increased 400%
- **Ecstasy** increased 750%
- **Heroin** increased 300%

(using heroin deaths as a proxy for use in 1988 in the absence of a percentage).

Regional use saw increases that were not as substantial as for Australian cities, but nevertheless as high as 300% for some drugs.

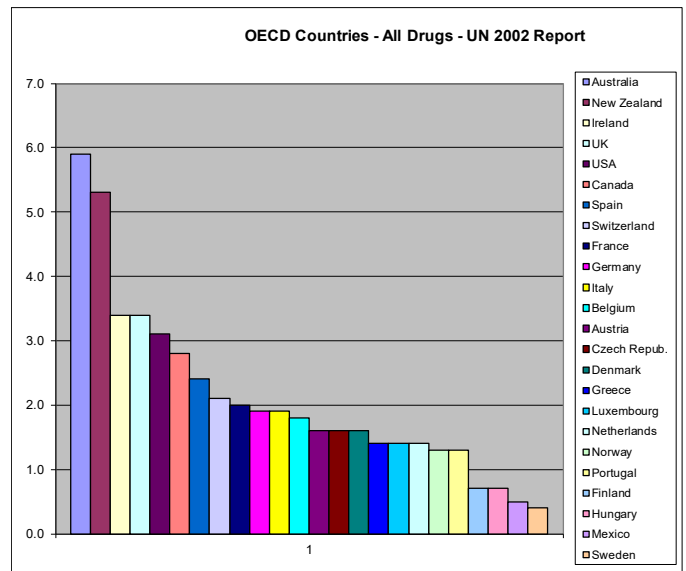
Table 2: Standardised^(a) rates of recent use of licit and illicit drugs in the past 12 months, by region, Australia, 1988–1998 (%)

| Substance | Year of survey | | | | |
|-------------------------------|----------------|------|--------|--------|-------|
| | 1988 | 1991 | 1993 | 1995 | 1998 |
| Metropolitan | | | | | |
| Amphetamines | 1.0 | 2.9 | 2.1 | 2.6 | 4.8 |
| Barbiturates ^(b) | 0.9 | 1.6 | 0.4 | 0.2 | 0.4 |
| Cannabis | 8.1 | 15.6 | 15.1 | 15.5 | 24.7 |
| Cocaine | 0.4 | 0.8 | 0.6 | 0.7 | 1.6 |
| Ecstasy | 0.4 | 1.3 | 1.4 | 1.4 | 3.0 |
| Heroin | n/c | 0.5 | 0.2 | 0.4 | 0.9 |
| Inhalants | 0.4 | 1.1 | 0.6 | 0.7 | 1.4 |
| Injecting | 0.5 | 0.6 | 0.6 | 0.7 | 1.1 |
| LSD | 0.9 | 2.2 | 1.7 | 2.1 | 4.4 |
| Methadone ^(c) | n/c | n/c | n/c | n/c | 0.3 |
| Painkillers ^(b) | 38.6 | 76.2 | 2.1 | 3.8 | 6.2 |
| Steroids | n/c | n/c | 0.1 | 0.1 | 0.2 |
| Tranquillisers ^(b) | 7.9 | 9.6 | 1.0 | 1.0 | 3.5 |
| Regional | | | | | |
| Amphetamines | 0.0 | 2.0 | 1.5 | 1.1 | 3.3 |
| Barbiturates ^(b) | 0.5 | 0.8 | 0.0 | 0.2 | 0.1 |
| Cannabis | 7.3 | 12.1 | **10.5 | **10.9 | *18.7 |
| Cocaine | 0.0 | 0.6 | 0.0 | 0.4 | 1.2 |
| Ecstasy | 0.0 | 0.8 | **0.3 | 0.2 | 2.2 |
| Heroin | n/c | 0.0 | 0.0 | 0.2 | 0.8 |
| Inhalants | 0.5 | 0.8 | 0.3 | 0.2 | 0.8 |
| Injecting | 0.0 | 0.0 | 0.5 | 0.4 | 0.7 |
| LSD | 0.0 | 0.8 | 0.8 | **0.7 | **0.3 |
| Methadone ^(c) | n/c | n/c | n/c | n/c | 0.0 |
| Painkillers ^(b) | 26.9 | 72.4 | 0.8 | 3.5 | 4.7 |
| Steroids | n/c | n/c | 0.0 | 0.2 | 0.0 |
| Tranquillisers ^(b) | 4.5 | 10.5 | 0.5 | 0.4 | **2.2 |

Notes:
 (a) 1991 persons 14+ years standard population
 (b) 1988–1991 questions did not distinguish between medical and non-medical use
 (c) diverted methadone
 * p<0.01
 ** p<0.05
 n/c = data not collected in that year

Australia’s drug use against other OECD countries by 1998 made it the world leader amongst developed economies, as per the following graph (where Australia’s 1998 data was the latest available for that United Nations’ 2002 report) which shows an aggregated average of the five main illicit drug types. New Zealand followed in second place, having also adopted harm reduction programming with needle exchanges first opening in 1987.

Given the isolation of both countries, with no common borders shared with other nations,



the increased drug use in both early-initiating Harm Reduction nations is extraordinary.

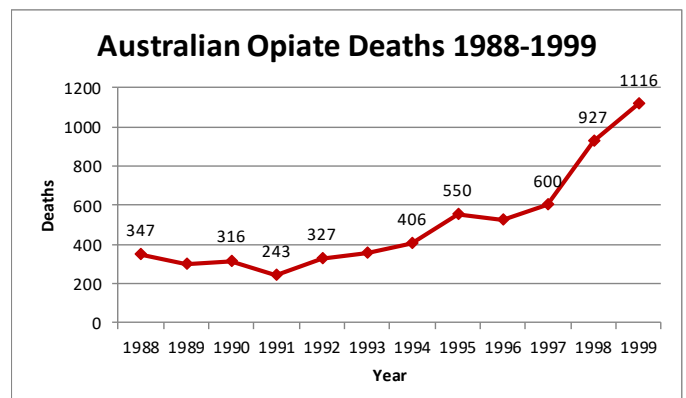
In contrast, the USA and UK, predominantly the homes to the 1960s counter-culture movement that spawned the resurgence of illicit drug use after 50+ years of negligible drug prohibitory use, were significantly below the Oceania countries.

Note from the graph that almost every OECD country has less than half Australia’s drug use. Sweden, which had virtually no Harm Reduction programming and a zero tolerance approach to illicit drug use, had the lowest use.

High drug use matched by high mortality

The enormous increases in drug use under the initial phase of Harm Reduction were matched by exponential increases in drug-related deaths, particularly with opiates. Heroin supply was plentiful and therefore cheap leading to a sharp uptake of the drug in the late 1990s.

These statistics became the centre of media attention by 1999, the year when opiate-related deaths peaked at 1,116 deaths for the year as per the graph below.



Tough on Drugs - 1998 to 2007

The very marked, accelerating Harm Reduction statistics for both use and deaths were entirely reversed by the time the 2001 Australian National Drug Strategy Household Survey was conducted.

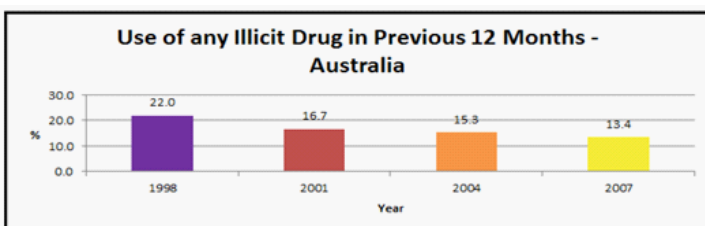
Those reversals were the result of the Howard Federal Government, elected in 1996, implementing a central focus on drug prevention while nevertheless preserving the existing Harm Reduction programming. The name of the new drug policy mix was Tough on Drugs.

An excellent description of Tough on Drugs from the 2008 UNODC report on Australian drug policy notes:

The strategy strengthened supply and demand reduction activities, improved and clarified community messaging, and increasingly built on research and evaluations to guide policy development. In parallel, the establishment of the Australian National Council on Drugs helped to incorporate the know-how of the community of experts working in the various fields of drug control at the federal level and in the various States. Significantly, it helped to substantially increase the overall drug budget for the implementation of the Federal Australian Government's strategy (AUD\$1.3 billion over the 1998-2005 period). The total anti-narcotics budgets of the national and state governments was estimated at AUD\$3.2 bn in the fiscal year 2002/03, equivalent to 0.41% of GDP (up from some 0.1% of GDP a decade earlier), one of the highest such proportions among the industrialized countries (almost three times as much as the West European average (0.15%) and close to the ratios reported from the USA (0.47%). Australia also experimented successfully with rather broad powers of the police and the establishment of drug courts.

1998-2007 - Tough on Drugs decreases use

The new spending and public messaging on drug prevention and rehabilitation in Australia led to decreases in illicit drug use by 39%.



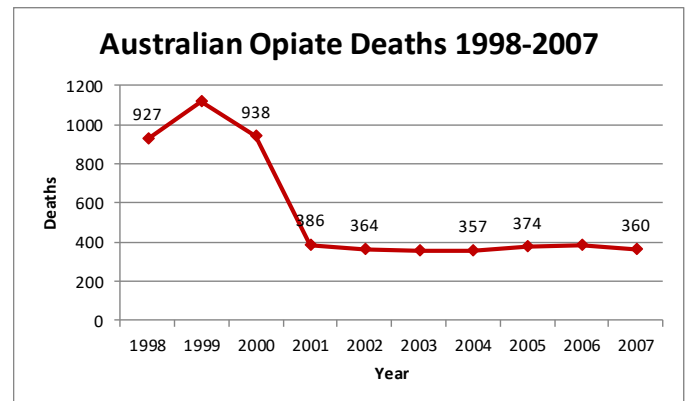
The NDSHS report for 2010 heading the next column provides a comprehensive table detailing these reductions in use. There can only be conjecture on significantly greater decreases without the dynamics of Harm Reduction running interference.

Table 2.1: Summary of recent^(a) drug use, people aged 14 years or older, 1993 to 2010 (per cent)

| Drug/behaviour | 1993 | 1995 | 1998 | 2001 | 2004 | 2007 | 2010 |
|--|------|------|------|------|------|------|------|
| Illicit drugs (excluding pharmaceuticals) | | | | | | | |
| Cannabis | 12.7 | 13.1 | 17.9 | 12.9 | 11.3 | 9.1 | 10.3 |
| Ecstasy ^(b) | 1.2 | 0.9 | 2.4 | 2.9 | 3.4 | 3.5 | 3.0 |
| Meth/amphetamines ^(c) | 2.0 | 2.1 | 3.7 | 3.4 | 3.2 | 2.3 | 2.1 |
| Cocaine | 0.5 | 1.0 | 1.4 | 1.3 | 1.0 | 1.6 | 2.1 |
| Hallucinogens | 1.3 | 1.9 | 3.0 | 1.1 | 0.7 | 0.6 | 1.4 |
| Inhalants | 0.6 | 0.4 | 0.9 | 0.4 | 0.4 | 0.4 | 0.6 |
| Heroin | 0.2 | 0.4 | 0.8 | 0.2 | 0.2 | 0.2 | 0.2 |
| Ketamine | n.a. | n.a. | n.a. | n.a. | 0.3 | 0.2 | 0.2 |
| GHB | n.a. | n.a. | n.a. | n.a. | 0.1 | 0.1 | 0.1 |
| Injectable drugs | 0.5 | 0.5 | 0.8 | 0.6 | 0.4 | 0.5 | 0.4 |
| Any illicit ^{(d)(e)} | 14.0 | 16.7 | 22.0 | 16.7 | 15.3 | 13.4 | 14.7 |

Tough on Drugs - 67% decrease in mortality

The graph below from official Australian mortality statistics shows the effect of Tough on Drugs on opiate overdoses, a 67% drop in deaths, significantly greater than the overall decrease in mortality for **all** illicit drug types as per NDARC Drug Trends on the following page.



Tough on Drugs had particularly targeted the Asian heroin trade, introducing a heroin drought to Australia from which the heroin trade has never really recovered.

What is highly significant about the Tough on Drugs era is the very apparent reversal of Australia's drug 'problem' as it was then positioned by the Australian media.

Tough on Drugs' reversals of HR increases

From 1985 to 1999 there had been a very evident acceleration in opiate-related deaths, where Harm Reduction policies had been associated with exponential increases in illicit drug use and exponentially increasing drug-related deaths and harm, the very thing it was tasked with reducing. This was failure on any accounting.

With the introduction of Tough on Drugs and its more intentioned strategy of drug prevention there was a dramatic and instant reversal in drug use, and after 1999, when the Tough on Strategies really began to bite, an immediate and dramatic reversal in drug-related deaths.

There will always be the objection that correlation is not causation, but in the absence of any viable

confounder producing these reversals, it should also be remembered that wherever there is causation there is also correlation. Causality is thereby suggested.

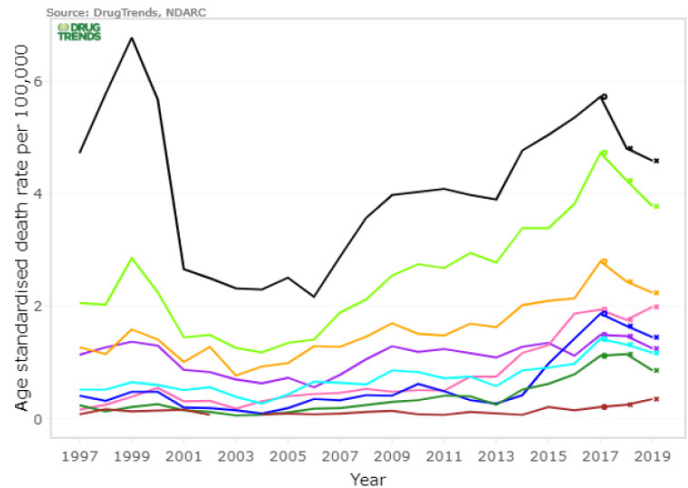
Prevention policies are an efficient and sufficient cause, which have been proven in countries like Sweden and Iceland, to produce exactly the same reversals experienced by Australia. The graph in the next column, where opiate-related deaths (black line) are adjusted per capita year by year, demonstrates just how significant was that sharp reversal of trajectory.

2008-2017 - the accelerating dynamic returns

With the newly elected Rudd Federal Government scrapping Tough on Drugs in 2008, the same dynamic of accelerated harm is very apparently back in play as per the graph in the next column. This replicates the sharp and accelerating increases in drug deaths that typified the pre-Tough on Drugs policy regime.

Harm Reduction - the tide that lifts all boats

Countering once again the objection that the reversals in opiate deaths may have been more to do with opiate markets than Tough on Drugs, the following graph topping the next column shows the same trend across every illicit drug - HR lifts all boats and prevention does the opposite with all drugs. Decreases start in



- Drug
- ALCOHOL
- AMPHETAMINES
- ANTIDEPRESSANTS
- ANTIEPILEPTIC, SEDATIVE-HYPNOTIC, ANTIPARKINSONISM DRUGS
- ANTIPSYCHOTICS & NEUROLEPTICS
- CANNABINOIDS
- COCAINE
- NONOPIOID ANALGESICS
- OPIOIDS

1999 and increases resume in 2008 when the well-funded prevention emphasis was removed to concentrate rather on binge alcohol consumption.

Providing an overall summary, see the comprehensive graph below adapted from

<http://doi.org/10.26190/g2bk-t998>



Drug-Induced Deaths

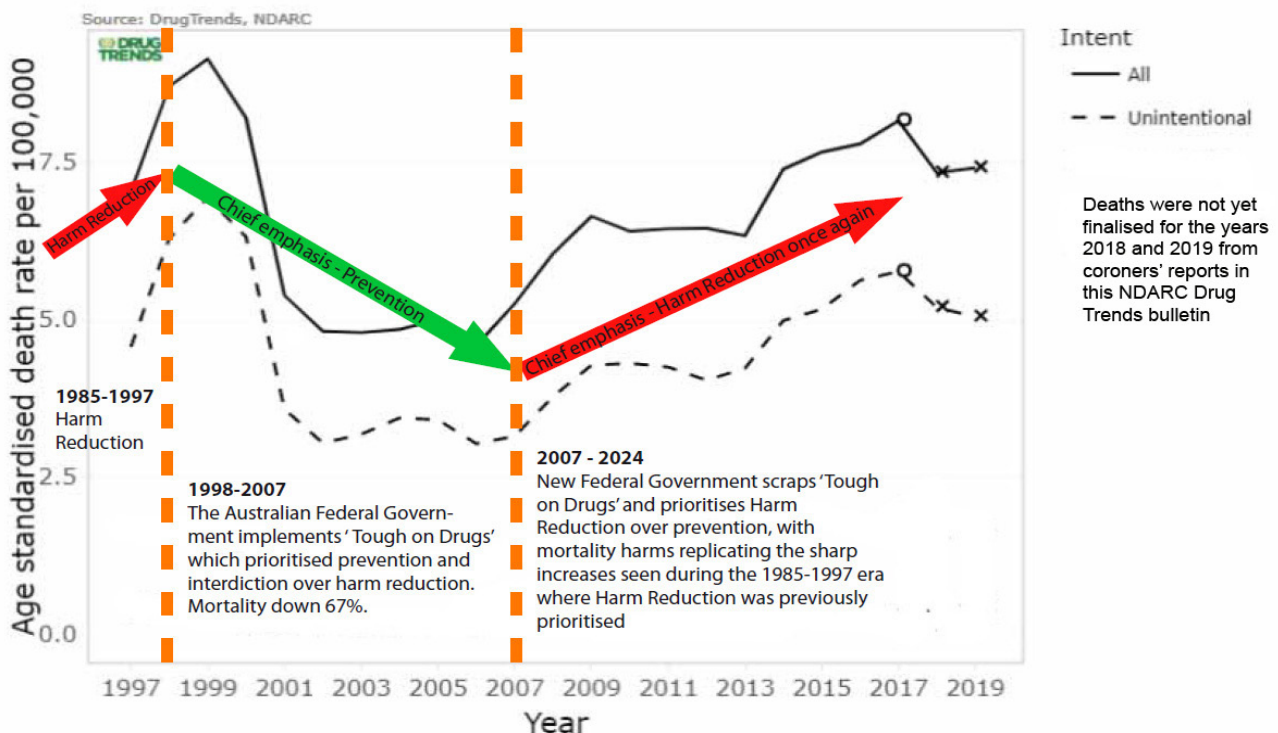


Figure 2. Age-standardised rate (per 100,000 people) of drug-induced deaths for the Australian population, by intent, 1997-2019.

the official NDARC [report](#) on drug-related deaths in Australia.

Why does Harm Reduction produce harm?

Australia's, as the initial world leader in implementing the new approach of Harm Reduction, has seen substantially increased drug harm whenever it has been given drug policy ascendancy.

Because the Tough on Drugs era acted as an effective control, sandwiched between two time-periods where Harm Reduction was given priority over prevention, in the absence of suggested or viable confounders there is an incontrovertible relationship between Harm Reduction and increased harm and deaths.

The conclusion must be that Harm Reduction generates increased harm. There is therefore a dynamic at play within its founding philosophy and practice which seeds accelerated harm.

The rest of this document will analyse, via its variety of ideological programming, why Harm Reduction is producing the very opposite of what it purports to counter - greater harm and increased mortality counts.

Harm Reduction ideology

Prevention of drug use not its interest

The International Harm Reduction Association is the peak Harm Reduction body globally.

It best defines what Harm Reduction seeks to achieve and has [historically](#) asserted that its emphasis is on the prevention of drug harm “rather than the prevention of drug use itself.” The screen shot below is of their website definition dating from 2016.

What is harm reduction?

A position statement from Harm Reduction International

Harm reduction refers to policies, programmes and practices that aim to reduce the harms associated with the use of psychoactive drugs in people unable or unwilling to stop. The defining features are the focus on the prevention of harm, rather than on the prevention of drug use itself, and the focus on people who continue to use drugs.

The [latest](#) definition by the IHRA has conveniently dropped the “rather than prevent” juxtaposition, suggesting that the IHRA has suffered some level of discomfit regarding general community reaction to its outright disinterest in drug prevention.

WHAT IS HARM REDUCTION?

Harm reduction refers to policies, programmes and practices that aim to minimise the negative health, social and legal impacts associated with drug use, drug policies and drug laws.

This reaction is based on a perception that the Harm Reduction movement is sympathetic to illicit drug use, something they have vehemently denied for decades

until only recently. It is now abundantly evident that perception was always correct.

With Harm Reduction organisations worldwide now out of the drug policy closet, where hiding their pro-drug-use credentials had been their stock in trade, they now boldly back cannabis [legalisation](#) and drug [decriminalisation](#) as faux “harm reduction” measures.

The suspicion that they were always pro-drug-use had been due to their “[war on drugs](#) has failed” slogan which suggested that they were comfortable with nothing more than drug prevention education, equivalent to education programs that shoplifting is harmful, while not being willing to lift a finger against it.

So with the Harm Reduction movement’s pro-drug philosophy, and their promotion of a drug user’s ‘[right](#)’ to use drugs - a right that is recognised by nobody other than drug users and their Harm Reduction cheer squad - it would reasonably be expected that drug user numbers will increase under a Harm Reduction policy, matched by greater numbers of drug-related deaths sheerly as a reflection of increased drug user numbers.

Yet paradoxically, ‘Harm Reduction’, by its very nomenclature, agrees that illicit drugs present unacceptable harms to the user and those in the community that surround them. If not, there would be no aspiration for Harm Reduction to reduce harms.

It is precisely all of those inner contradictions and dynamics which drive the Australian dilemma with its harm reduction policy failures which have correlated with escalating drug-related deaths. Harm Reduction contains the seeds of its own failure - an internal dynamic not necessarily influenced by outside forces.

The remainder of this document will analyse that dynamic as it plays out in the various HR interventions.

Opiate Substitution Therapy

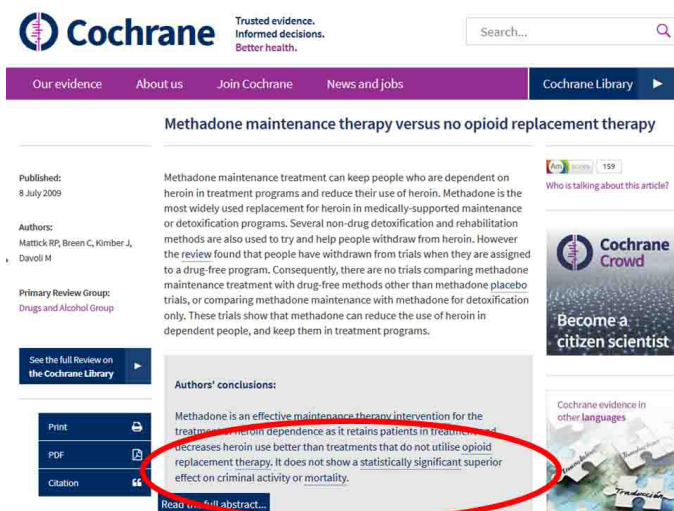
Adding to the mortality toll

This chapter describes reliable scientific reviews of random control trials which finding that Opiate Substitution Therapies (OSTs) fail to demonstrate effectiveness in reducing mortality or criminality, nor HIV or Hepatitis C (HCV) transmission. All of these are their primary purpose. They also demonstrate that significant percentages of patients still purchase and use heroin, thereby signalling why deaths continue to spiral upwards under Australian Harm Reduction policies.

Controlled trials don't support effectiveness

Cochrane Collaboration reviews are recognised as the gold standard for systematic reviews worldwide, only reviewing studies that can demonstrate scientific rigour.

In 2009, the the [gold standard](#) Cochrane Collaboration [review](#) of 11 Random Controlled Trials of methadone maintenance, some double-blinded with placebo, found that, when compared to no treatment at all:



“methadone was ‘not statistically different in criminal activity or mortality.’”

In other words, methadone patients die at similar rates to heroin users, with similar criminal activity.

It is notable that the lead researcher for this review was Dr Richard Mattick, former head of the Australian National Drug and Alcohol Research Centre (NDARC) at NSW University, an ardent harm reductionist.

It is true that methadone was found more effective than other approaches in retaining patients in treatment and for suppressing heroin use, both of which are entirely to be expected when supplying users with a cheap supply of opiate in place of far more expensive heroin. Akin to giving heavily-discounted alcohol to alcoholics, there can be no mystery in retaining patients or suppressing other alcohol purchases.

Results suggest even more are using heroin

Nevertheless, other studies indicate that up to 45% of methadone maintenance patients are still purchasing and using illegal heroin, but with methadone’s “chemical handcuffs” prolonging opiate use for up to 30-40 years, the chance of contracting HIV or Hep C accumulates, while not an issue for those who seek and achieve recovery.

With the 2009 Cochrane Collaboration review finding that methadone maintenance fails to improve overdose mortality and criminality outcomes it appears clear that use of heroin may be considerably under-reported in study groups.

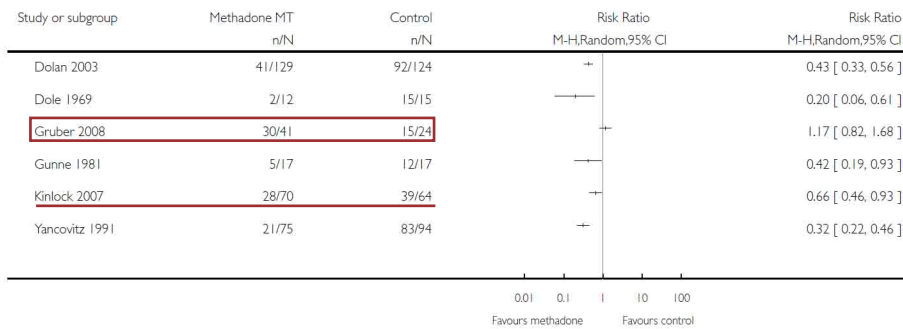
From the Cochrane review by Mattick et al, the included studies show that a varying percentage of methadone patients still use heroin, with one study finding 73% still using the substance. High heroin use

Analysis 1.3. Comparison 1 Methadone maintenance treatment vs No methadone maintenance treatment, Outcome 3 Self reported heroin use.

Review: Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence

Comparison: 1 Methadone maintenance treatment vs No methadone maintenance treatment

Outcome: 3 Self reported heroin use



percentages are corroborated by other studies.

Because it is not possible - as with Naltrexone maintenance with its 'Naltrexone challenge' to test abstinence from heroin - to obtain any objective measure for methadone maintenance - the poor results from rigorous studies only further deepens the dilemma of failure for opiate maintenance.

2017 inferior Cochrane Collaboration review

In 2017 a worldwide team of Harm Reduction researchers completed a Cochrane Collaboration review of Opiate Substitution Therapy (OST) and Needle & Syringe Program effectiveness, this time focusing on HCV transmission.

While adhering to the strictures of Cochrane Collaboration review procedure, which demands that studies be judged for their level of bias and that same adjudged bias clearly delineated and declared, the 2017 team made conclusions regarding Opiate Substitution Therapy that derived from loose scientific studies with a very high risk of bias through poor study design.

Comparisons with the 2009 HIV review

Studies that were included in the 2017 HCV review were a number with snowball recruitment processes (Nolan 2014, Craine 2009, Bruneau 2015 [unpublished], Judd 2015 [unpublished]), where those already enrolled in the trial recruited their peers. This kind of recruitment bears no comparison to previous studies that were double-blinded and in some cases placebo controlled.

Normally studies that have a high risk of bias are excluded from adjudged results in Cochrane Collaboration reviews, however the researchers in this particular review were content to say in the text of their review that of the 28 studies chosen to contribute to their findings that,

“We judged only two studies to be at moderate overall risk of bias, while 17 were at serious risk

and 7 were at critical risk; for two unpublished datasets there was insufficient information to assess bias. As none of the intervention effects were generated from RCT evidence, we typically categorised quality as low.”

Clearly, as compared to the 2009 Cochrane Collaboration HIV transmission review using **only** Random Controlled Trials, the 2017 HCV review used **not one** RCT.

RCT trials are eminently just as possible for studies on OSTs reducing HCV as they are for HIV (11 RCT studies by 2009). When such RCTs have been completed, then will be the time for a valid Cochrane Collaboration review.

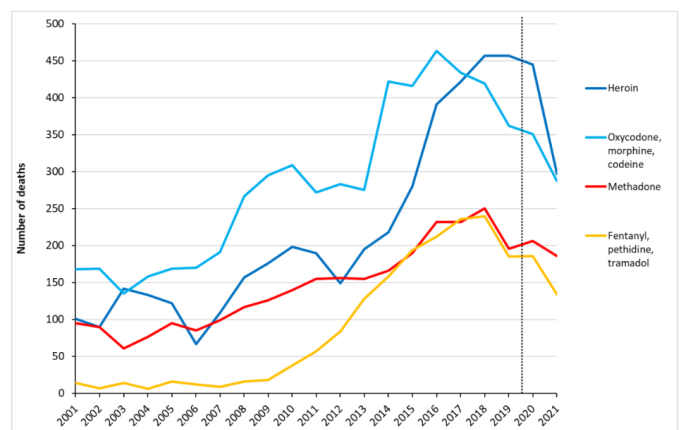
With only two studies out of 13 included in their 2017 OST review having a moderate risk of bias, where many reviewers would have simply refused to perform the review on the basis of only two acceptable studies lacking sufficient power, the 2017 Cochrane Collaboration review can't be considered of any real scientific merit.

The best conclusion that can be made about the 2017 review of 13 OST studies on HCV transmission is that the results carry a heavy risk of bias and therefore cannot be scientifically relied on.

Final word - OST part of the mortality problem

For any benefits that Harm Reductionists have imagined for substitution therapies, the graph below, which is limited by use only of raw numbers of opioid deaths rather than the more reliable per capita counts, demonstrates that OST is part of Australia's increasing mortality problem. The orange line represents opioid deaths in which methadone was involved, where 2018 represents the peak at 250 deaths. This is nothing but failure at every level.

Figure 29. Number of unintentional drug-induced deaths by opioid type, 2001-2021



Note: Data to the right of the dotted line (2020 and 2021 data) are preliminary, and likely to rise.

Needle & Syringe Programs

NSP - no demonstrated positive effect

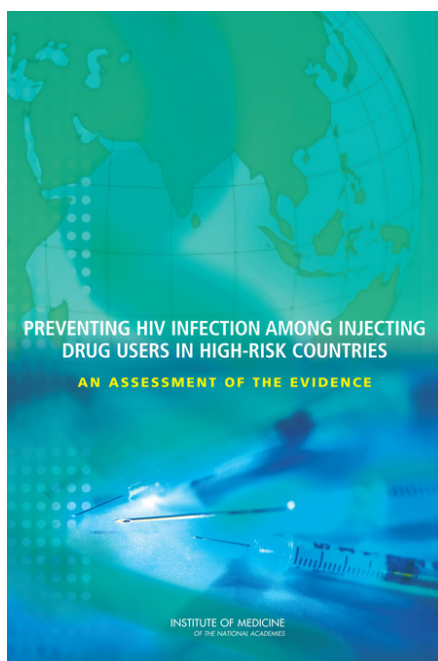
The most prestigious review of Needle & Syringe Programs (NSPs) in 2007 found the evidence for their effectiveness in reducing HIV transmission “limited and inconclusive” and ineffective in reducing Hepatitis C (HCV).

Two later reviews used either flawed studies or studies with serious or critical risk of bias. Two heavily-hyped Australian studies used designs incapable of establishing causality. Furthermore, all studies that have claimed effectiveness of some kind are countered by population level indicators of ineffectiveness.

The most extensive and prestigious review

In 2007 the prestigious US Institute of Medicine (IOM), with its extensive panel of 24 scientists, medical practitioners, and reviewers did a comprehensive [review](#) of the literature on needle exchanges.

In their late 1995 [review](#) of needle exchanges, the IOM had noted the poor design and lack of rigour in most of the studies on the effectiveness of NSPs to that time, but nevertheless advocated for their



implementation in the United States, signalling that they were sympathetic to the intervention even before the evidence was in. This bias toward harm reduction makes their later 2006 conclusions against the effectiveness of NSP important.

Almost all rigorous studies on Needle and Syringe Programs have been done between 1995 and 2005, which allowed the IOM to better review NSP effectiveness in reducing HIV and HCV (Hepatitis C) in their 2005 Geneva Conference.

While the IOM report found that *multi-component programs* which contained needle exchanges were effective in reducing self-reported risk behaviours, the IOM review, when considering the effectiveness of NSPs *alone* found (page 149) that:

- ***“evidence regarding the effect of needle and syringe exchange on HIV incidence is limited and inconclusive”***
- ***“ecological studies monitor populations rather than individuals, and therefore cannot establish causality” for NSPs***
- ***“multiple studies show that (needle exchanges) do not reduce transmission of (Hepatitis C).”***

It is abundantly clear that if NSPs are ineffective with HCV, where there is a large pool of infected users transmitting Hep C via shared needles and equipment, then the failure of NSPs to stop the high rates of shared needles and equipment must logically be as ineffective against HIV as it is against HCV.

False claims for NSP and HIV prevention

The fact that Australia has low rates of HIV transmission can be easily explained by the initial small

pool of infected users, by the success of Australia’s Grim Reaper television advertising campaign, and to high rates of freely available HIV testing.

In fact, Dr Alex Wodak, the doctor responsible for introducing NSPs within Australia lamented the ineffectiveness of NSPs with HCV in this country, where rates are little different to other countries of the world with no NSPs. His 1997 MJA [article](#) titled “Hepatitis C: Waiting for the Grim Reaper” made the following telling points:

“Despite the success of the harm reduction/public health approach in controlling the HIV epidemic and slowing the spread of hepatitis B among IDUs in Australia, it appears not to have reduced the incidence of hepatitis C.”

“Until Australia embarks on a major national awareness-raising exercise, such as a “Grim Reaper”-style public education campaign, the band will continue to play on for hepatitis C as it once did for HIV.”

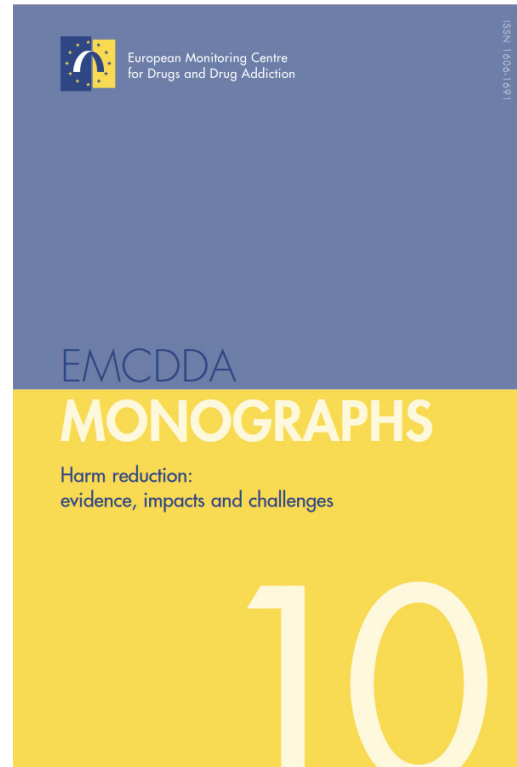
EMCDDA review does not supersede IOM

An objection by the harm reduction lobby to the authoritative IOM review is that it has been superseded by a later review. But the latter review has very apparent errors.

The 2010 ‘review of reviews’ by Norah Palmateer et al. in [Addiction](#) (105) pages 844-859 studying the effectiveness of needle exchanges found that “there is insufficient evidence to conclude that any of the interventions are effective in preventing HCV (Hepatitis C) transmission.” This is a somewhat more optimistic outcome than that of the US IOM. Palmateer also concludes that there is “tentative evidence to support the effectiveness of NSP in preventing HIV transmission.” Again, this is a more optimistic outcome.

However the 2010 Palmateer study, which was also reproduced in the European Monitoring Centre’s Monograph on Harm Reduction, makes **a critical error** in its ‘review of reviews’, failing to adequately look into the primary studies guiding those reviews, as well as uncritically accepting the conclusions of the three former reviews. The three reviews included the 2004 Wodak/Cooney [review](#) completed for the World Health Organisation (WHO) and the 2007 Tilson et al. review representing the work of the prestigious US Institute of Medicine we have already outlined with its extensive panel of 24 scientists, medical practitioners and reviewers. The third study was the 2001 Gibson et al. review for which the Palmateer reviewers concluded that “their (Gibson’s) conclusions were apparently inconsistent with the HIV studies reviewed” (p 851).

The more optimistic HIV conclusion of the 2010 Palmateer study, as compared to the formidable US



Institute of Medicine 2007 ‘inconclusive’ finding lies visibly in a specific lack of scrutiny by the Palmateer reviewers of the 2004 Wodak/Cooney review. On pages 845-6, the Palmateer ‘review of reviews’ reports its methodology whereby, “(f)rom each review, we extracted reviewers’ assessment of the evidence and the number, design and findings of relevant primary studies. Information on primary studies was extracted from the reviews; in the case where reviews reported discrepant study findings, the primary studies were consulted.” Notably though, the Palmateer ‘review of reviews’ failed to check whether the 2004 Wodak/Cooney review’s classification of 5 primary studies as ‘positive’ accorded with the internal conclusions of those five studies, or whether each had entirely defensible methodologies. This is something that the 2007 US Institute of Medicine review in fact did.

In their December 2005 Geneva Conference convened to study the effectiveness of needle exchange on HIV transmission, the US IOM had Australia’s Dr Alex Wodak present the findings of his 2004 WHO study, followed by Sweden’s Dr Kerstin Käll (a Drug Free Australia Fellow) who clearly demonstrated that three of the five ‘positive’ studies for needle exchange effectiveness cited by the 2004 WHO review were either invalid or were in fact inconclusive.

The ‘positive’ 1993 Heimer et al study did not measure HIV prevalence among IDUs but only in returned needles, which, she stated, cannot be directly translated into a population and therefore should not have been included in the WHO review. The ‘positive’ 2000 study by Monterosso and co-workers was misclassified as positive for NEP, whereas in fact

the result was clearly statistically non-significant and should have been labeled inconclusive. The purportedly 'positive' 1991 Ljungberg et al study had found HIV seroprevalence in Sweden's Lund, a city with needle exchange, to be maintained at -1% in contrast to 60% in Stockholm, but ignored the authors' own comment that incidence in Stockholm had been reduced to 1% by the time of the study without the implementation of needle exchanges, therefore she maintained that this study should have been moved to the inconclusive table.

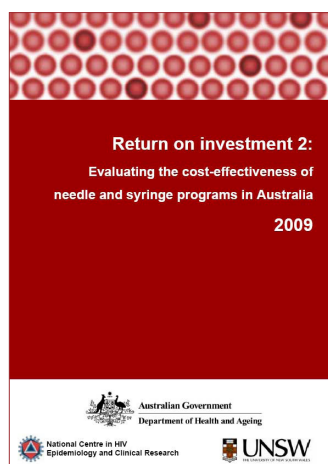
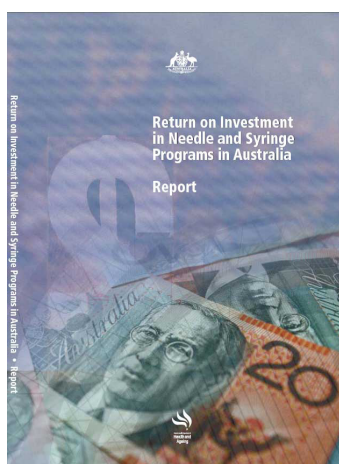
The Palmateer 'review of reviews', while uncritically accepting the 'positive' classifications wrongly attributed by the 2004 WHO review, did look at the strength or otherwise of the described design of the studies cited therein, noting, to their credit, that "(f)our of the five positive findings were generated by studies with weaker designs."

Two invalid Australian studies on NSP

Two well-known Australian studies which calculated the cost-benefit for needle and syringe programs are thereby based on a falsehood, where they assumed that there was scientific support for the effectiveness of needle and syringe programs when there was none.

The first 2002 study, [Return on Investment](#) which was the kind of ecological study panned by the Institute of Medicine review but widely publicised in the media, calculated that to that date there had been 25,000 less cases of HIV and 21,000 less cases of Hepatitis C (HCV) as a result of Australian government investment in needle and syringe programs. The second 2009 report [Return on Investment 2](#) calculated a staggering 32,050 cases of HIV and 96,667 cases of HCV avoided between 2000 and 2009 which created a net saving, they stated, at lowest estimate of \$1.03 billion from an investment of \$243 million.

How do two government-funded Return on Investment reports conjure up so many \$billions of savings if the authoritative reviews of the evidence find no demonstrable HIV and Hep C prevention benefit from Needle & Syringe Programs?



The 2002 ROI report erroneously assumed that NSPs were responsible for ALL preventative interventions implemented when an epidemic is recognised. The 2009 ROI report relies foundationally on self-reported behaviours of injecting drug users, far less reliable than scientific studies which measure blood-borne virus incidence in specific populations.

When it is considered that the Hep C prevalence amongst Australian intravenous drug users (65%) is no different to the expected rates worldwide (50-70%), there is no immediately evident advantage for NSPs.

Mention has already been made of the 1997 Medical Journal of Australia [article](#) lamenting the failure of NSPs to control HCV. A 1997 [article](#) by Nick Crofts et al. titled "The force of numbers: why hepatitis C is spreading among Australian injecting drug users while HIV is not" clearly states that NSPs were not preventing Hep C.

In neither of these reports was there any presentation of defensible data or statistically derived evidence on needle and syringe programs from rigorous studies (ecological studies cannot infer outcomes), supporting any alleged success of such programs in averting HCV transmission, and where the evidence on the alleged success on HIV has in fact been scientifically inconclusive.

The one conclusion that can be well defended is that NSPs are ineffective in controlling HCV, and by their failure to control needle sharing, the very practice it was designed to remove, it cannot have ever been effective in decreasing HIV transmissions.

2017 inferior Cochrane Collaboration review

The 2017 Cochrane Collaboration [review](#) of NSP impact on HCV transmission is marred by a total reliance on studies with a high risk of bias.

Of course it must be acknowledged that needle programs could never become subject to the gold standard of Randon Control Trials, as does occur with Opiate Substitution programming. So study design is all the more critical in attempting to reduce bias.

As already discussed in the previous chapter on Opiate Substitution Treatment the 2017 Cochrane Collaboration review clearly states that,

We judged only two studies to be at moderate overall risk of bias, while 17 were at serious risk and 7 were at critical risk; for two unpublished datasets there was insufficient information to assess bias. As none of the intervention effects were generated from RCT evidence, we typically categorised quality as low.

It is notable each of the 5 NSP studies included in this review were at serious or critical risk of bias. Not one study had a moderate risk of bias. Therefore there can

be no scientific confidence in any conclusions drawn by this review.

The same Cochrane review of 4 additional studies examining OSTs working in tandem with NSPs to prevent HCV transmission concluded the following:

Combined NSP and OST

Primary meta-analysis of three studies involving 3241 anti-HCV negative participants and adjusting for confounders suggested a strong intervention effect for combined high coverage of NSP and OST, reducing the risk of HCV acquisition by 74% (95% CI 11% to 93%) compared to no OST and low/no coverage with NSP. The evidence is considered low quality because it was derived from observational studies with serious risk of bias, and the few studies identified precluded sensitivity analyses. Evidence for the combination of low coverage of NSP and OST was weaker. There were fewer studies with information on both OST and NSP coverage, and the studies represented a subset of people on OST (i.e. participants who continue to inject drugs while on OST), with those on low coverage NSP receiving an insufficient number of sterile syringes per average frequency of injecting.

Clearly, the use of studies with high risk of bias precludes any scientific confirmation of either NSP or OST/NSP-combined effectiveness for these Harm Reduction interventions in reducing transmission of HCV.

Summary of HIV and HCV studies

The science does not support the effectiveness of NSP programs in reducing either HIV or HCV transmission. Even when combined with Opiate Substitution Therapy, the science does not support effectiveness.

Why NSPs do not work

Needle & Syringe Programs create the illusion that illicit injectibles such as opiates or cocaine can be used safely. But the temptation for users to inject in groups often outweighs any safety messaging or provision.

Rather than putting funds into programming such as extra rehab beds that will help more users quit their addiction, this Harm Reduction intervention prolongs drug use careers, only lengthening the time in which a fatal overdose might occur. This adds to mortality tolls.

Australia, with among the **higher** HCV rates in the world despite **best practice** needle programs, will also witness continually increasing deaths from blood-borne diseases due to Harm Reduction's internal dynamic of continually increasing drug use - as has been established in the first chapter of this document.

Injecting Rooms

Increasing both morbidity and mortality

The two injecting rooms in Australia host extraordinary numbers of overdoses - 63 times greater than street overdose rates for Sydney's, and 102 times greater than street overdose rates in Melbourne's.

The written statements of ex-patrons claiming that they and other patrons used the injecting rooms to push use of opiates and other drug cocktails to their limits demonstrates the increased morbidity this will inevitably produce. And despite hasty interventions by injecting room staff with the exorbitant numbers of overdose, these interventions cannot remove all overdose health impacts, increasing morbidity and ultimately mortality issues, given that illicit drug use often causes death due to long careers of health [attrition](#).

The Australian injecting rooms, otherwise called Supervised Injection Facilities (SIFs), only statistically reduce Australian overdose deaths by one death per annum each (see [Appendix D](#)), but add severe weight to the other side of the ledger via experimentation in the safety of these facilities, with the associated morbidity/mortality associated with the extended drug-using careers they encourage.

Only two rigorous reviews to date

Scientific reviews of formal evaluations of injecting rooms ([Kerr et al., 2007](#); [McNeil and Small, 2014](#); [Potter et al., 2014](#); [Garcia, 2015](#); [Kennedy, Karamouzian, and Kerr, 2017](#); [May et al., 2018 \(retracted\)](#); [Kilmer et al., 2018](#)), have reported positive outcomes across a range of evaluated criteria, **but most use non-peer-reviewed evaluations which notoriously have drawn conclusions which demonstrably fail to accord with the data.** This has led to a perception of being based on pseudo-science.

Just **two** reviews, [May et al](#) in 2018 and [Kilmer et al.](#) in 2018 (RAND Corporation) included studies only with a quasi-experimental design using control groups/areas. This has scientific validity. May et al. was subsequently retracted because of "methodological weaknesses linked to the pooling of diverse outcomes into a single composite measure" (International Journal of Drug Policy, 2018) but not for its selection criteria of high-quality studies on injecting room effectiveness.

Only RAND review remaining

The RAND Corporation similarly identified nine studies with quasi-experimental design, noting that four of the earlier studies had been superseded by others within the remaining five which studied the same outcomes with longer time series in the same locations. This effectively reduced the available number of reviewed studies to just five which are limited to overdose-related outcomes, discarded injecting equipment and crime. These studies examined SIFs in only three cities – Sydney, Vancouver and Barcelona.

Of these five studies, Marshall et al. found a 35% reduction in opiate overdose fatalities in the immediate area surrounding Vancouver's Insite, while Salmon et al. 2010 found a greater reduction in ambulance callouts for overdose in the Kings Cross postcode housing the Sydney MSIC than for the rest of New South Wales.

Donnelly and Mahoney found a null effect of the Sydney MSIC on crime in the Kings Cross neighbourhood, while Myer and Belisle found a significant reduction in property and violent crime in the area surrounding Vancouver's Insite immediately after its opening. Espelt et al. 2017 had conflicting results regarding discarded injecting equipment.

These results led to the Rand Corporation review delivering a largely positive report concerning the

possibility of implementing SIFs in the United States where no such facilities officially exist.

But RAND relies on two key discredited studies

The main two studies demonstrating the supposed effectiveness of a SIF in reducing overdose mortality (Marshall et al. Lancet 2011) and ambulance overdose callout reductions (Salmon et al. Addiction 2010) both demonstrate either incompetence on the part of the researchers or possibly fraudulent intent, and yet likewise form the centre of the other major literature reviews to that date (see for example the 2014 review by Potier, C., et al.).

Deaths INCREASED in Vancouver with Insite

The 2011 Marshall et al. Lancet study so central to these positive SIF reviews spuriously claimed that Insite likely reduced overdoses in Vancouver by 9% despite official BC Coroners' stats displayed at the bottom of this column clearly showing only increases in overdose mortality for Vancouver after Insite's 2003 opening as per screenshot of their records below. Drug Free Australia corrected Lancet on these statistics in a full page letter printed by Lancet in its January 2012 issue (See Appendix B).

The same study also claimed overdose reductions by 35% in the area immediately surrounding Vancouver's Insite. Drug Free Australia's Australian/Canadian/US team of epidemiologists and addiction specialists demonstrated in 2012 that the Lancet study had concealed the tripling of police numbers around Insite in 2003, falsely claiming that this was temporary when in fact it was permanent, as attested by the DTES Area Commander of that time, John McKay (See Appendix C).

Such policing served to disperse drug dealers away from the area around Insite, **reducing crime and**

loitering, (as evidenced by the findings of the Myer/Belisle study), as well as reducing overdoses which most often occur immediately after a purchase from a dealer.

Policing alone was shown to be demonstrably capable of reducing overdoses around Insite by 35%, *the result of tripled policing which changed to a zero tolerance approach away from a prior philosophy of 'containment' 6 months before Insite opened.*

Sydney study's own data discredits it

The 2010 Salmon et al. Addiction study, which claimed a 19% greater reduction in overdose ambulance callouts for Kings Cross (80%) than for the rest of NSW (61%) when Australia's heroin drought ensued, failed to note that there were proportionately GREATER reductions in ambulance callouts during nighttime hours, where Kings Cross, at 71% reductions was a

| | AMBULANCE CALLOUTS BEFORE MSIC OVER 36 MONTHS | | | | | |
|------------------------------|---|-------------------|------------------|-------------------|-----------------|-------------------|
| | During Op hours | Average per month | Outside Op hours | Average per month | Total all hours | Average per month |
| | Postcode 2011 - Kings Cross | 626 | 17.4 | 922 | 25.6 | 1548 |
| Postcode 2010 - Darlinghurst | 338 | 9.4 | 311 | 8.6 | 649 | 18.0 |
| Rest of NSW | 6779 | 188.3 | 2901 | 80.6 | 9680 | 268.9 |

| | AMBULANCE CALLOUTS AFTER MSIC OVER 60 MONTHS | | | | | |
|------------------------------|--|-------------------|------------------|-------------------|-----------------|-------------------|
| | During Op hours | Average per month | Outside Op hours | Average per month | Total all hours | Average per month |
| | Postcode 2011 - Kings Cross | 210 | 3.5 | 440 | 7.3 | 650 |
| Postcode 2010 - Darlinghurst | 311 | 5.2 | 383 | 6.4 | 694 | 11.6 |
| Rest of NSW | 4382 | 73.0 | 2806 | 46.8 | 7188 | 119.8 |

| | PERCENTAGE REDUCTION IN AMBULANCE CALLOUTS | | | |
|------------------------------|--|------------------|-----------------|-----|
| | During Op hours | Outside Op hours | Total all hours | |
| | Postcode 2011 - Kings Cross | 80% | 71% | 75% |
| Postcode 2010 - Darlinghurst | 45% | 26% | 36% | |
| Rest of NSW | 61% | 42% | 55% | |

full 29% better than the rest of NSW (42% reductions) WHEN THE INJECTING ROOM WAS CLOSED. This can be clearly seen in the ringed cells on the Table immediately above.

It is crucial to recognise that ambulance callouts for overdose were reduced across every city in Australia because of the well-documented heroin drought which started 6 months before the Sydney facility opened in May 2001. Thus any positive effect of the injecting room, it was reasoned, might be demonstrated by superior reductions in callouts compared to the rest of Australia, or in this study's comparison, the rest of NSW.

To summarise the major error by the 2010 Salmon et al. study, their claim was that the Sydney injecting



BC Coroners Service
Illicit Drug Deaths 1997 to 2007
Ministry of Public Safety and Solicitor General

| | Age | | | | | | | | | | Town / City | | | | | | | | | | | | |
|--------------|------|------|------|------|------|------|------|------|------|------|-------------|----------------|------|------|------|------|------|------|------|------|------|------|-----|
| | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 | 2000 | 1999 | 1998 | 1997 | |
| 20 and under | 5 | 9 | 7 | 8 | 7 | 5 | 7 | 7 | 10 | 12 | 6 | 100 Mile House | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| 21-30 | 37 | 47 | 40 | 43 | 34 | 39 | 52 | 38 | 49 | 73 | 61 | 106 Mile Ranch | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 31-40 | 55 | 54 | 64 | 58 | 49 | 56 | 97 | 101 | 111 | 174 | 141 | Abbotsford | 4 | 8 | 5 | 5 | 1 | 11 | 14 | 6 | 6 | 8 | |
| 41-50 | 66 | 77 | 75 | 57 | 72 | 56 | 65 | 73 | 82 | 121 | 81 | Agassiz | 0 | 1 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 2 | 1 |
| 51-60 | 32 | 38 | 28 | 26 | 22 | 12 | 19 | 28 | 24 | 35 | 17 | Alexis Creek | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 61 and over | 5 | 3 | 4 | 2 | 5 | 2 | 6 | 1 | 2 | 2 | 4 | Armstrong (BC) | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 200 | 228 | 218 | 194 | 159 | 170 | 246 | 248 | 278 | 417 | 310 | Black Creek | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Bowser | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Brentwood Bay | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Bridge Lake | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Burnaby | 9 | 6 | 7 | 3 | 8 | 2 | 11 | 6 | 13 | 20 | 13 |
| | | | | | | | | | | | | Campbell River | 3 | 4 | 5 | 3 | 4 | 1 | 1 | 2 | 2 | 9 | 2 |
| | | | | | | | | | | | | Caslegar | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Trail | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 |
| | | | | | | | | | | | | Uckleat | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| | | | | | | | | | | | | Vancouver | 56 | 54 | 55 | 67 | 51 | 49 | 90 | 87 | 108 | 191 | 140 |
| | | | | | | | | | | | | Vanderhoof | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Victoria | 17 | 16 | 16 | 16 | 17 | 20 | 20 | 31 | 26 | 17 | |
| | | | | | | | | | | | | Warfield | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| | | | | | | | | | | | | West Vancouver | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 |
| | | | | | | | | | | | | Westbank | 1 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Whistler | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | White Rock | 1 | 2 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 |
| | | | | | | | | | | | | Williams Lake | 3 | 0 | 2 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 |
| | | | | | | | | | | | | Wrsfield (BC) | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Wycliffe | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Yzer | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | | | | | | | | | | | Unknown | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 200 | 228 | 218 | 194 | 159 | 170 | 246 | 248 | 278 | 417 | 310 | | | | | | | | | | | | |

room had indeed reduced ambulance callouts more so than the rest of NSW. To lay this out more graphically:

REDUCTIONS IN AMBULANCE OVERDOSE CALLOUTS DUE TO HEROIN DROUGHT

Daytime - when injecting room was open

| | |
|-------------|------|
| Kings Cross | -80% |
| Rest of NSW | -61% |

Kings Cross 19% superior to the rest of NSW by day

Nighttime - when injecting room was closed

| | |
|-------------|------|
| Kings Cross | -71% |
| Rest of NSW | -42% |

Kings Cross 29% superior to the rest of NSW at night

This clearly indicates reductions were not due to the injecting room, and suggests it was rather due to sniffer dog policing introduced **one month** after the MSIC opened, where sniffer dog use was even more **extensive** at **night**. Any null effect of the MSIC on crime in the area can be slated to changed policing, just as was the case for Vancouver's Insite.

Thus the studies on SIF impacts on crime in the immediate area around an SIF are voided due to the effect of increased police operations. ***In fact, increased police operations explain every positive result for SIFS in the RAND review.***

The upshot is that there is no science which supports the effectiveness of injecting rooms.

Latest MSIR evaluation well-illustrates the failure

The 2020 **review** of Melbourne's North Richmond demonstrates the complete failure of its Medically Supervised Injecting Room (MSIR) to meet objectives legislated by the Victorian Government. Below are the review's own data and verbatim conclusions demonstrating failure on five of the six objectives, despite rosier **media reports** indicating otherwise. The facility has also been associated with increases in drug-related crime, an outcome not anticipated by the six legislated objectives.

The Melbourne **review** records the following regarding its six objectives (please note the verbatim comments by the MSIR reviewers within the quotation marks):

1. **Reduce discarded needles on streets** - "Local people record no difference in seeing discarded injecting equipment" (p 76 of the review)
2. **Improve public amenity** - "significantly fewer residents and business respondents reported feeling safe walking alone during the day and after dark due to concerns about violence and crime . . ." (p 85)
3. **Reduce the spread of blood-borne viruses** - "There is not a significant difference between MSIR

service users and other people who inject drugs in reporting that they had injected with someone's used needle/syringe in the previous month." (p 100)

4. **Referrals to treatment and other services** - "in the first year of operation (the MSIR) has not demonstrated higher levels of service take-up for MSIR users as compared with other people who use drugs." (p 48).

5. **Reduce heroin deaths** - Figure 17 on p 45 of the review shows that there were 12 heroin deaths within 1 km of the MSIR the year before it opened, and 13 the year after. Figure 19 on p 47 shows that for the top 5 Local Government Areas for heroin deaths in Melbourne there was a cumulative 65 deaths before the MSIR opened and 67 in its first year.

Clearly there was no observable reduction in heroin deaths in Melbourne or North Richmond in its first year of operation. Furthermore, had the 112,831 heroin injections in the MSIR over 18 months happened on the streets of North Richmond, there would, according to Australian statistics, have been only one death to be expected, (Australia averages one overdose death for every 109,500 opiate injections) indicating that the MSIR spent **\$6 million** to save only one life, an extremely expensive failure.

6. **Reduce ambulance and hospital attendances** - On the streets of Melbourne, 112,831 opiate injections would have produced 26 overdoses, (25 non-fatal and 1 fatal) according to an important Australian **study** (see p 59). Of these 19 would likely have been attended by an ambulance.

Comparing 18 months before and after, the MSIR would therefore have reduced ambulance callouts by just 5%. Yet the Melbourne review egregiously claims reductions of 36%, which were clearly due to heightened police operations **arresting** drug dealers in the vicinity of the MSIR, sending drug dealers elsewhere to ply their trade. Because users most often overdose near where they bought their drugs (p 83), ambulance callouts were clearly the result of policing, which nullifies (see **footnote on p 67**) the review's spurious claims regarding callouts. Additionally, analysis of heroin OD presentations at nearby St Vincent's Hospital "found that the number of heroin overdose cases did not change significantly after the facility opened." (p 74)

Adding to the failure against objectives listed above, police complained of increasing **crime** around the MSIR, and residents of a **honey-pot effect** where drug dealers were drawn to the streets outside the MSIR.

See **Appendix D** for similarities between the Sydney and Melbourne facilities in their evaluation results.

Clearly, the science does not favour injecting rooms.

Pill testing

Why pill testing increases Australian deaths

Pill testing increases Australian drug deaths by failing to address almost every scientifically established cause of MDMA-related deaths in Australia, which averaged **22 per year** before pill testing commenced in 2018.

MDMA is the substance that causes almost every pill death in this country, yet pill testing **greenlights** the substance, implicitly signalling that a normal dose is largely benign. The ANU **evaluation** of the 2019 pill testing trial demonstrated that some users intended to take more of a substance that pill testing procedures found to be unadulterated or relatively pure.

Ecstasy causal in almost every pill death

In January 2020 **data** on 392 ecstasy-related deaths between July 2000 and November 2018 was published in the International Journal of Drug Policy. This study extended the data beyond the MDMA-related deaths from July 2000 and December 2005 examined in the only other Australian **study** of ecstasy deaths.

There were three main causes of deaths. 14% of deaths were caused by ecstasy alone, often due to individual vulnerabilities to the drug. Anna Wood took an ecstasy pill from the same batch as four friends, but only she died, no doubt from an individual vulnerability. It was not an overdose because the science clearly shows that ecstasy overdose is in fact **rare**. 48% of deaths were from ecstasy being co-consumed with other legal or illegal drugs such as alcohol, amphetamines or cocaine which create deadly synergies. A further 29% were from accidents due to ecstasy/other drug intoxication, mostly car accidents.

Very few deaths from adulterants

No more than 5% of Australian ecstasy-related

deaths, according to the above **study**, had other exotic drugs mixed with MDMA in ecstasy pills. Obviously, it is not clear at autopsy whether these other exotic drugs caused the death, or whether it was the ecstasy in the pill, but given that MDMA is responsible for the other 95% of deaths where the pill contains no other psychoactive drug, it is likely that it is the ecstasy that is responsible for most every one of the 392 deaths.

There have only been three **'bad batch'** deaths in Australia between 2000 and 2018, the study period.

Very few deaths from other party drugs

Drug Free Australia has identified a handful of MDMA-related deaths that lie outside of the years 2000 to 2018, with 6 PMA deaths in South Australia in the mid-1990s.

Again, there are a handful of deaths from party drugs other than ecstasy, with a number of NBOME deaths identified by Google search between 2012 and 2016, where evidence indicates the deceased users knew what they were taking. Notably, three Melbourne deaths in January 2017 were caused by pills containing 25c-NBOME and 4-FA but it is questionable whether these drugs would have been delineated by the Bruker Alphas used for the Canberra pill testing trials simply because this mobile equipment often fails in identification where there are multiple drugs in a pill (written **advice** from SA toxicologist Dr Andrew Leibie).

But pill testing greenlights ecstasy

With at least 95% of Australian deaths caused or co-caused by ecstasy itself, pill testing fails to address the causes of most every Australian MDMA-related death.

This greenlighting of MDMA by pill testing outfits worldwide is made abundantly clear by Pill Testing Australia's first evaluation where it red-cards any

substance it deems to be, in their own words, “associated with increased harm/multiple overdoses/death.” The fact that their evaluations confirm that

Diagram 3: Classification and reporting of detected substances

| | |
|---------|--|
| WHITE: | Where a substance was analysed, and was the same as what the patron anticipated that it might be |
| YELLOW: | Where a substance was analysed, and there was a significant disparity between the result and what the patron anticipated that it was |
| RED: | Where a substance was analysed, and revealed the presence of a substance known to be associated with increased harm / multiple overdoses/ death Where a substance was analysed and returned an ambivalent result, or functional groups known to be associated with significant harm |

unadulterated MDMA is white-carded if found in a pill explicitly clarifies that MDMA is greenlighted.

Causes of MDMA-related deaths

- Individual vulnerabilities to MDMA - Pill testing cannot test for individual vulnerabilities
- MDMA used with alcohol, cocaine etc - Pill testing tests pills, not user blood samples
- Accidents, mostly car accidents - Pill testing cannot determine who will have an accident while intoxicated

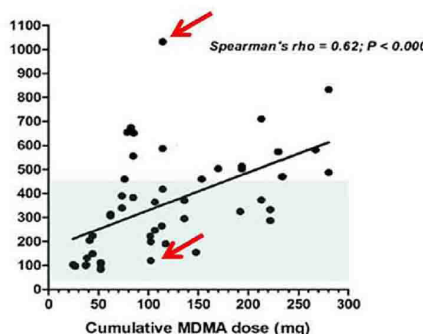
Pill testing might prevent the 3 out of 392 deaths that have been caused by bad batches in Australia, but very good evidence from the second Canberra pill-testing trial indicates that it would do nothing to stop the other 99.25% of deaths. Worse, pill testing increases the likelihood that the drug responsible for almost all Australian party pill deaths will be taken by those who have purchased it.

Pill testing can't advise an appropriate dose

Pill Testing Australia is now calling for governments to buy them new equipment that can measure the purity and dose of MDMA in an ecstasy pill, saying they need to advise users on how to more safely moderate their doses.

Given that every person metabolises the MDMA in their ecstasy pill differently there will be blood concentrations which will differ tenfold for roughly the same amount of MDMA taken. The graph below from this South

Australian [study](#) shows the blood MDMA concentrations for 49 ecstasy users, NONE of which died in the study, against the amount of carefully



measured MDMA they ingested.

The light grey shaded area in the previous graph shows the blood concentration range for 196 of the 392 MDMA-related Australian deaths (the lower 50%) between 2001 and 2018 (30 - 450 ng/ml – see [this](#) and the Roxburgh study previously detailed above for the range). As can be clearly seen, even small doses of MDMA (80-90 mgs) yield blood concentrations well ABOVE the levels which caused 50% of our Australian ecstasy deaths.

Notice that ingestion of just 100-115 mg of ecstasy gives blood levels ranging tenfold from 120 – 1040 ng/ml. When it is considered that 125 – 150 mg of MDMA in a pill can be routinely used for experimental PTSD research with no ethics approval problems, such individual differences against toxic levels makes advice on dose absurd.

Festivals do not need pill testers advising on dose. All that is needed is a large photo of a decedent at each festival captioned – “this ecstasy user died after taking ¼ of a pill”. Messages on what to look for when someone is hyperthermic or toxically affected by ecstasy can be delivered via all sorts of social media and by screens at festivals. No need for pill testing at all.

Users MORE likely to take ecstasy once tested

The Australian National University [evaluation](#) of the 2019 Canberra pill testing trial confirms that the methods used by Pill Testing Australia to classify identified substances is actually increasing the likelihood the user will take that substance.

When pill testing identifies a substance to be what the user thought they had purchased, the substance is given an “all-clear” white card which is displayed on a noticeboard in the pill testing tent, declaring it to not contain substances “associated with increased harm / multiple overdoses / death” (see [p 11](#)). If a ‘dangerous’ drug is identified, it is given a red card.

Yet while the evaluation stated that “most of the patrons had a generally accurate perception of the contents” of their pills before testing, it also states that “those who received a test result confirming the substance to be what they thought it was were likely to take as much or more than originally intended” and “concordance between expectation and identification is associated with stable or increased intention to take a substance.”

When it is considered that 90% of the 158 pills presented in the 2019 Canberra trial contained ecstasy, the drug found in Dr Amanda Roxburgh’s study to be responsible for almost all of the 392 MDMA-related

deaths in Australia between 2000 and 2018, the symbolics of a white card rather than the red card it deserves makes it clear why a user would be more likely to use it after the pill has been tested.

Pill testing clearly sends all the wrong messages which will only increase party drug deaths in Australia.

Pill testing counselling failed to deter use

The same evaluation as described above also confirms that only seven pills were discarded by users after pills were tested, each containing N-ethylpentylone, which would likely come from a batch or batches of 200 or more pills each somewhere in Canberra or Australia which otherwise caused no hospitalisations or deaths.

Pill Testing Australia claims that they tell users of the dangers of ecstasy but there was no evidence of counsellors dissuading any user from taking their tested pill, with not one ecstasy user recorded discarding their pills, evidencing zero behaviour change.

Drug Free Australia asserts that it is too late to be telling ecstasy users that their substance is dangerous given the horse has bolted once they have spent \$100 purchasing it. The real need is government-funded social media campaigns telling the truth about ecstasy before they make the cash outlay.

Pill testing a failure in England/Wales

Statistics from England and Wales show that the introduction of pill testing did not produce any reduction in deaths as promised, nor did it appear to change the behaviour of users by getting some to quit using ecstasy, as also forecast by its advocates. While European countries have **poor** to non-existent statistics on ecstasy deaths, the UK keeps up-to-date figures. Pill testing operated by “the Loop” began in 2013 and by 2016 began expanding into 12 music festivals with government assent. In 2013 ecstasy was used by 1.2% of the population, rising significantly to 1.7% by 2017/18 (see [Table 1.02](#)). In 2013 there were 43 ecstasy deaths, more than doubling to **92 deaths** in 2018 (more recent figures are confounded by the COVID epidemic).

Harm Reduction Australia’s specious campaign to establish an intervention that provides little to no protective effect for ecstasy users will continue to mislead young Australians, broaden the pool of novice users and lead to more needless deaths.

Decriminalisation of illicit drug use

Decriminalisation and increased mortality

Portugal was the world's first country to decriminalise the use of all illicit drugs in July of 2001. Its new drug policy was one it titled 'dissuasion' where the money previously targeted for policing of illicit drug use would now go towards treatment and counselling to dissuade all problem users from drug use.

Drug use in Portugal increased 59% by 2016 (their latest survey) and use by high school minors went up by 80% by 2011, settling back to 24% higher by 2019. Decriminalisation is associated with increased use worldwide. Increased use creates increased harm.

Overdose deaths in Portugal were 111% above the 2002 figure by 2019. Clearly decriminalisation's dissuasion did not work, and increased mortality the price.

The truth on Portugal's decriminalisation

Portugal decriminalised all illicit drug use as of July 2001 and since that time drug decriminalisation/legalisation activists have inundated politicians and the media with glowing reports of Portugal's touted 'success'.

But below is the graphic reality, using their own official data and graphs sent to the European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), the same statistics used for the yearly United Nations World Drug Report drug-use tables.

By 2016 drug use was 59% higher than in 2001

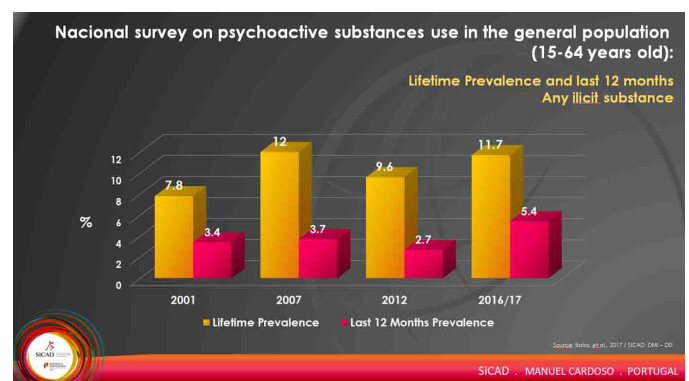
The figures for overall illicit drug use in Portugal for their last survey in 2016 indicated a 59% increase in use of all illicit drugs. Results of their scheduled 2021 population survey have never been released, but if [wastewater](#) reports on Portugal, as compared to the rest of Europe are any indicator, Portugal may have

something to hide. For four of the five drugs studied in European wastewater reporting - cocaine, ecstasy, ketamine and cannabis - Portugal's cities rated amongst the top three to four across European countries.

From their survey data:

Use in the last 12 months

| | |
|------|------|
| 2001 | 3.4% |
| 2007 | 3.7% |
| 2012 | 2.7% |
| 2016 | 5.4% |



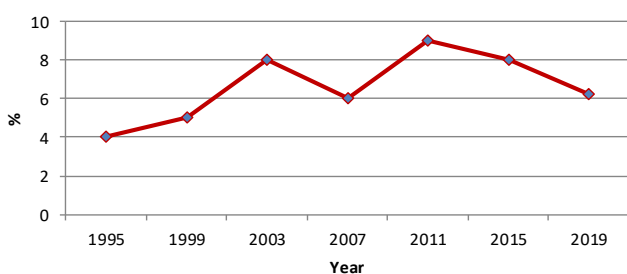
The 59% increase above use in 2001 indicates that Portugal's decriminalised policy of dissuasion does not work. Given that the underlying premise of dissuasion is that drug use is harmful, where recovery is better than continued use, success would be seen via a decrease in drug use. This is not the case.

Portugal's decriminalisation model includes more treatment, accompanied by increased treatment expenditures. Despite the extra treatment, the model has failed.

High School drug use 80% then 24% higher

The ESPAD survey of cannabis use (last 30 days before survey) for 16 year old high-school students shows

Past month cannabis use - ESPAD Survey of 16 year olds - (1995-2019)



increases in use of the drug from 1999, a couple of years before decriminalisation, through to 2019. The increases were by 2011 very substantial with an 80% increase, moving down to a 60% increase above 1999 by 2015.

In the latest ESPAD report available, high school minors were still 24% above pre-decriminalisation levels.

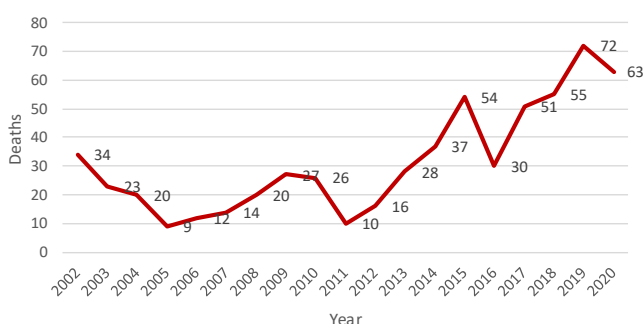
Drug deaths in Portugal 111% higher by 2019

There have been significant increases in overdose-related deaths in Portugal since decriminalisation. The claim by Harm Reductionists that there were significant decreases in drug-related deaths since decriminalisation are based on two errors.

First, false claims that there were more than 75 drug-related deaths in 2001 which more than halved to 34 deaths in 2002 use a figure for 2001 for which there is no substantiation. Official drug-related deaths for Portugal, taken from the latest 2023 [EMCDDA Statistical Bulletin](#) are charted below.

Second, there is no way of knowing what the real number of drug related deaths before 2002 was. Up until 2009 Portugal counted all deaths where any illicit drug was detected, whether the death was caused by that illicit drug or not. Portugal later changed its definition for Selection B drug-induced deaths to only those that were caused by overdose or poisoning, and in 2009 reanalysed their data back to 2002. This leaves no comparison to the years before decriminalisation. The official figures yield the following graph.

Portugal Overdose Deaths 2002-2020



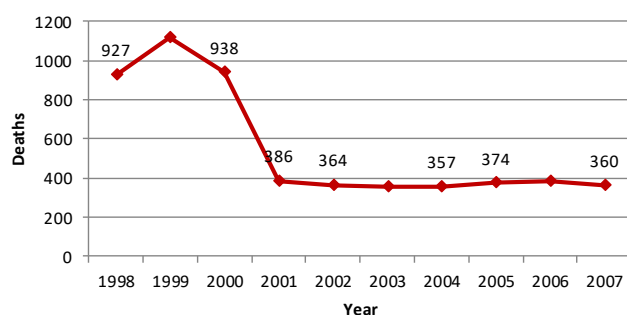
Early decreases in deaths between 2002 and 2005 are part of the same decreasing trend in opiate use which was already substantially decreasing from 0.9% in 1998, to 0.7% in 2000, the year before decriminalisation. These decreases were not due to decriminalisation because they were not a part of it. Decriminalisation was introduced July 2001 and appears to be the beneficiary of whatever dynamic was driving opiate use and deaths down.

However these early decreases in deaths are matched by an increasing trend between 2005 and 2010, which is followed by sharper rises in drug deaths from 2011 to 2019 and 2020, the latest year for which data is currently available.

Compare Tough on Drugs deaths to Portugal's

Portugal's overdose mortality graph should be compared with Australia's Tough on Drugs results below.

Australian Opiate Deaths 1998-2007



While Australia maintained criminal penalties for use of most drugs, it saw sharply decreased drug deaths that were then maintained at those lower levels throughout the tenure of Tough on Drugs as explained in our first chapter.

Portugal's lower opioid mortality counts are due to a population half the size of Australia's and also to low rates of opiate injection, which contrasts with Australia's high rates of opioid injection. In Portugal heroin has also historically been predominantly smoked rather than injected, reducing overdose risk.

INCREASED USE ELSEWHERE

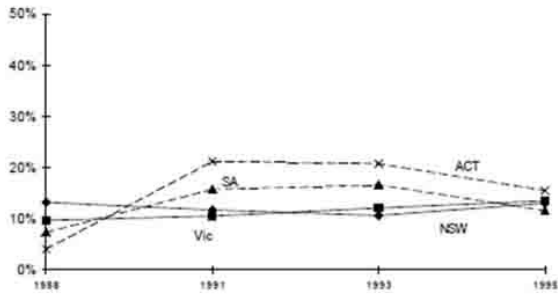
Portugal's experience replicates that of other jurisdictions which had decriminalised cannabis in the decades preceding their liberalisation experiment.

Decriminalisation is thereby associated with increased drug use. Increased drug use automatically implies increased harm and deaths, a recognition implicitly acknowledged by the concept of Harm Reduction, i.e. if illicit drugs did not cause unacceptable harm and mortality there would never have been a need for Harm Reduction programming.

Decriminalisation accelerated Australian use

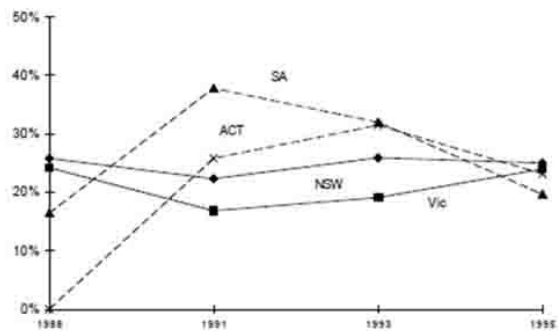
South Australia decriminalised cannabis in 1987, followed by the ACT in 1992. The following graphs from NDS Household Surveys show sharp rises in cannabis use for both jurisdictions, up from negligible use in each, before equalling the use of NSW and Victoria, States with previously entrenched cannabis problems.

Figure 4.1: Used in the past 12 months for four jurisdictions



Source: NDS 1988, 1991, 1993, 1995

Figure 4.2: Use marijuana monthly or more often for four jurisdictions, 1988-1996



Source: NDS 1988, 1991, 1993, 1995; those who have never tried marijuana are excluded

SA offences went from 6,231 in '87/'88 to 17,425 in '93/'94 and when researchers asked users about the increases, many said "We thought cannabis was now legal."

Decriminalisation in the USA increased use

- Alaska legalised cannabis in 1975. A study in 1988 found that 72% of year 12 students had tried it. They recriminalised shortly thereafter.
- California decriminalised cannabis on January 1, 1975. 10 months after cannabis use by 18 - 29 year olds was up 15%.
- Oregon decriminalised cannabis in 1973. 12 months after cannabis use by 18 - 29 year olds was up 12%.

If tobacco smoking rose by 12-15% in 12 months for young people in this country, we would be horrified.

By contrast, increases in US cannabis use overall from 1973-76 were negligible, as per the US Household Surveys (at the base of this column). We note that the reducing use from the US 1980s 'Just Say No' campaign is also evident in the same survey results, something drug law reformers try to deny.

Increased use = increased deaths in Oregon

Decriminalisation in Oregon has had very measurable harms with a 341% increase in opiate mortality since decriminalising all drugs in mid-2021. Within 10 months overdose deaths had increased from 280 to 607 deaths. By the end of 2022 there were 956 deaths. In 2023 deaths were on track for 1,250 for the year, or a 446% increase.

Oregon has recently recriminalised all illicit drugs, the legacy of their eye-opening decriminalisation experiment.

This 'Harm Reduction' measure can thereby reliably be expected to increase drug harms and deaths wherever implemented.

Table 2.1. Trends in Prevalence of Lifetime and Last Year Marijuana Use by Age¹ (NHSDA 1974-1996)

| | 1974 | 1976 | 1977 | 1979 | 1982 | 1985 | 1988 | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | % | % | % | % | % | % | % | % | % | % | % | % | % | % |
| Lifetime | | | | | | | | | | | | | | |
| 12-17 years | 23.0 | 22.4 | 28.0 | 26.7 | 23.2 | 20.1 | 15.0 | 12.7 | 11.1 | 9.1 | 9.9 | 13.6 | 16.2 | 16.8 |
| 18-25 years | 52.7 | 52.9 | 59.9 | 66.1 | 61.3 | 57.6 | 54.6 | 50.4 | 48.8 | 46.6 | 45.7 | 41.9 | 41.4 | 44.0 |
| 26-34 years | - | - | - | 45.0 | 51.5 | 54.1 | 57.6 | 56.5 | 55.2 | 54.3 | 54.9 | 52.7 | 51.8 | 50.5 |
| 26+ years | 9.9 | 12.9 | 15.3 | - | - | - | - | - | - | - | - | - | - | - |
| 35+ years | - | - | - | 9.0 | 10.4 | 13.9 | 17.6 | 19.6 | 21.1 | 22.2 | 23.8 | 25.4 | 25.3 | 27.0 |
| Last Year | | | | | | | | | | | | | | |
| 12-17 years | 18.5 | 18.4 | 22.3 | 21.3 | 17.7 | 16.7 | 10.7 | 9.6 | 8.5 | 6.9 | 8.5 | 11.4 | 14.2 | 13.0 |
| 18-25 years | 34.2 | 35.0 | 38.7 | 44.2 | 37.4 | 34.0 | 26.1 | 23.0 | 22.9 | 21.2 | 21.4 | 21.4 | 21.8 | 23.8 |
| 26-34 years | - | - | - | 20.5 | 21.4 | 20.2 | 14.2 | 14.4 | 11.6 | 11.5 | 11.1 | 11.5 | 11.8 | 11.3 |
| 26+ years | 3.8 | 5.4 | 6.4 | - | - | - | - | - | - | - | - | - | - | - |
| 35+ years | - | - | - | 4.3 | 6.2 | 4.3 | 3.7 | 4.2 | 4.6 | 3.8 | 4.6 | 4.1 | 3.4 | 3.8 |

Cannabis legalisation

State data shows increased deaths

Colorado, along with Washington State, was the first US State to legalise recreational use of cannabis. Now that legalisation is being touted as a Harm Reduction measure, stretching all definitions of drug harm beyond all recognition, real-time data from Colorado demonstrates that legalisation of illicit substances only *multiplies* harms and deaths.

CASE STUDY - USA

The legalisation of cannabis for recreational use in the USA commenced in mid-2013 when Colorado and Washington State put changed drug policy legislation into effect.

This chapter will examine the increased use and cannabis-related hospitalisations, road deaths and suicides in Colorado, where the statistics have been closely monitored, treating them as normative for other US States and indeed for any other country that wants to replicate these policies.

2009 Colorado commercialises medical cannabis

In 2009 Colorado commercialised medicinal cannabis, making it very easy for citizens within that State to be able to obtain a prescription for cannabis, resulting in burgeoning **use** and harms from that year on.

The number of cardholders ballooned in 2009 from the 4,800 prior to that year to more than 41,000, with 250 medical dispensaries operative. By mid-2010 there were over 900 unlicensed cannabis dispensaries.

Colorado legalises recreational use in 2013

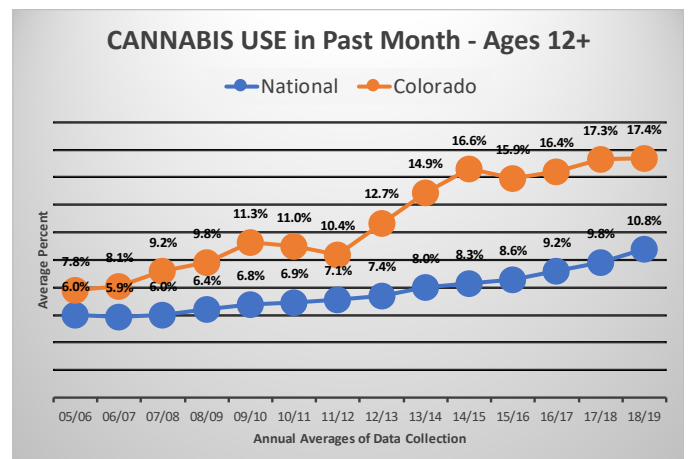
Medicinal commercialisation was a precursor to the legalisation of recreational cannabis use which effectively commenced mid-2013.

An acceleration of harm

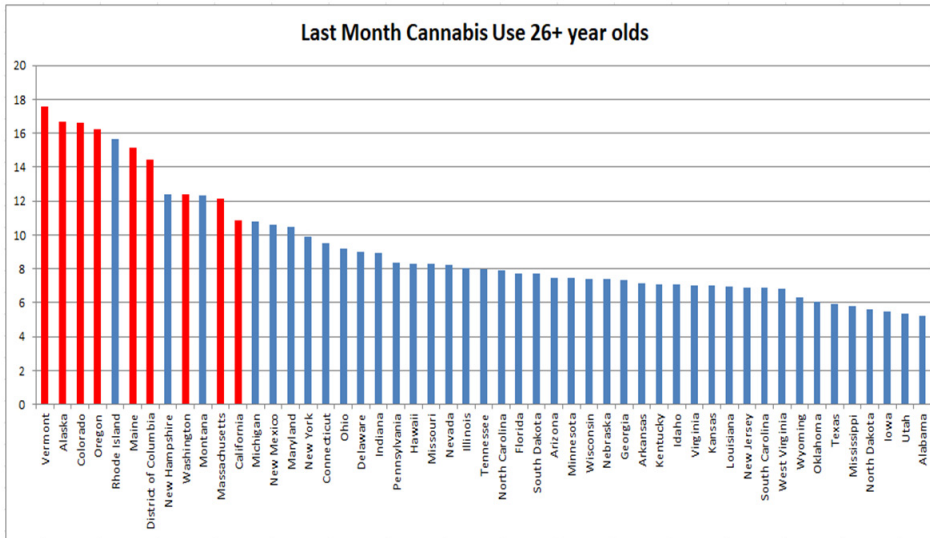
Thus significant increases in use, hospitalisations, road deaths and suicides are seen from 2009 on, and most indicators accelerating from 2013 on. This can be observed in the graphs which will be seen following.

Cannabis use in past month

Use of cannabis in the month before survey indicates an acceleration in the year that Coloradans voted for the measure (2012), a trend that is seen in other jurisdictions that have liberalised drug laws (red bars on graph below). That acceleration moderated by 2016, but increases were nevertheless maintained.



Note that the very modest increases of cannabis use for the entire US - the blue data line above - began to also accelerate as other States joined Colorado and Washington. This effect can be seen with the cannabis legalisation States from the year 2016. States that had then legalised cannabis are identified by the red bars in the bar graph following:



230% by 2020.

From 2013 and its introduction of legalised recreational use there was a 138% increase in traffic deaths involving cannabis use by the driver against a 29% increase in traffic deaths overall for Colorado.

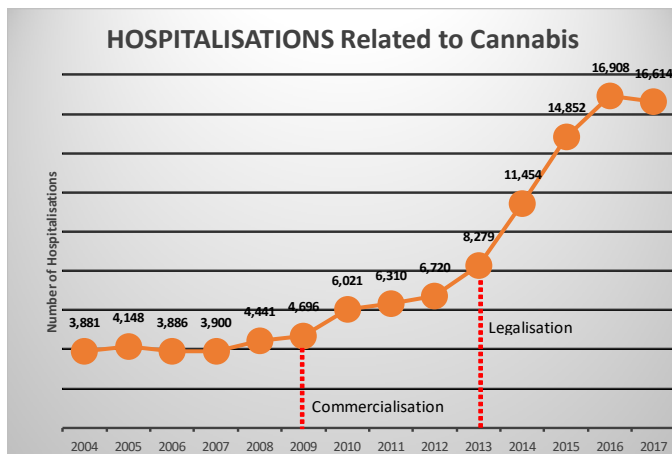
This represents significant community harm, where traffic deaths are the result of cannabis intoxication, with many likely to have been caused by the synergistic intoxication effect of cannabis co-used with alcohol.

Colorado, which had previously led all other US States for cannabis use, had by 2016 slipped to number 3 as other US States Vermont and Alaska introduced recreational cannabis legalisation.

Use by adults over the age of 25 doubled in the first 2 years of legalisation, with increases in use by those 17 years or younger and by college-age adults being somewhat more modest.

Hospitalisations related to cannabis up 360%

The accelerations in use by the various age categories in Colorado were matched by increases in hospitalisations related to cannabis as per the graph below.

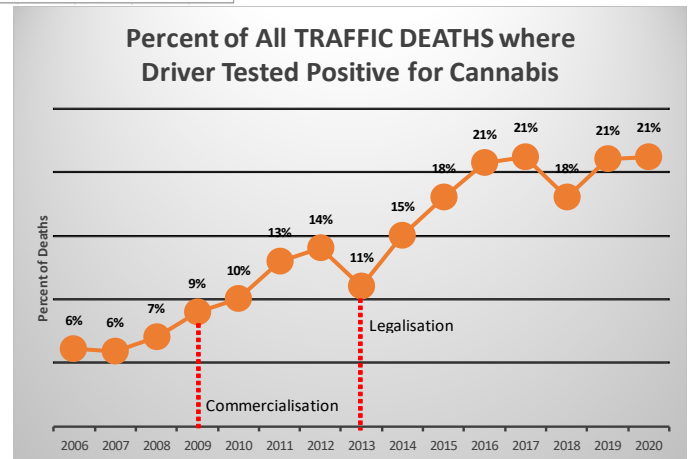


From commercialisation of medical cannabis in 2009 through to a peak in hospitalisations in 2016 there was a 360% increase, which represents substantial levels of harm as a result.

We note the above figures are not population adjusted, where population increased 16% from 2009 through 2020.

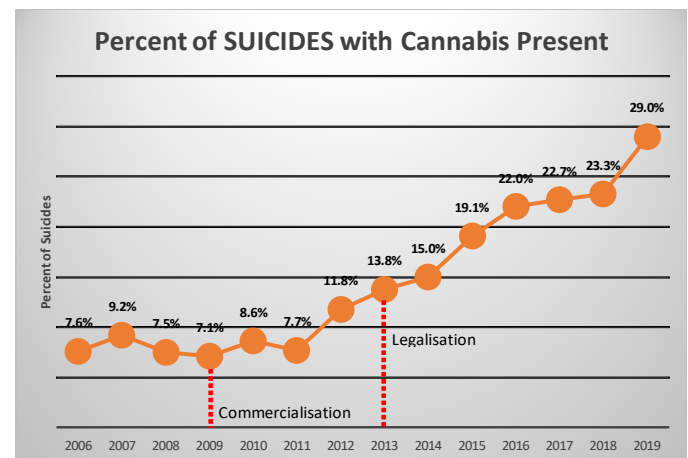
Cannabis-related traffic deaths up 230%

Traffic deaths where the driver tested positive for cannabis likewise saw very significant increases, up



Cannabis-related suicides up 410%

Suicides in which cannabis was present increased substantially, representing a 410% increase from commercialisation through to 2019. It must be noted that there is a very well-evidenced literature describing a relationship between cannabis and suicide.



Loose medical cannabis laws like full legalisation

US statistics show how recreational users have been able to use medical cannabis availability for self-reported 'pain' to feed their recreational use. For

instance, 90% of medical cannabis patients in Arizona claim pain as their malady, while 4% use it for cancer. In Colorado, it is 94% for pain and 3% for cancer, while in Oregon 94% claim to use it for pain. Only 2% of patients across 7 US states in 2014 used cannabis for verifiable illnesses such as AIDS wasting or MS.

Drug Free Australia notes that there are no laboratory tests for pain, which makes it a prime candidate for ruse and deception due to its subjective nature and the impossibility of objectively verifying or disproving it.

There are well established profiles for patients of chronic pain across all Western countries, where patients are more predominantly women and those aged 60 and above. For instance, a 2001 study by Sydney University's Pain Management Research Centre found 54% of patients were women, with men suffering in their sixties and women in their eighties.

Yet the **profile** for medical cannabis pain patients in the USA is very different. A 2007 study of 4,000 medical cannabis patients in California found that their average age was 32, three quarters were male and 90% had started using cannabis while teenagers, an identical age and gender profile to that of recreational users across the US.

This discordant profile means that medical cannabis in the various States of the US has mainly amounted to a quasi-legalisation strategy for recreational use of cannabis via subterfuge and ruse.

Cannabis black market still exploded

Colorado's legislative House Bill 1221 was **introduced** in 2017 to address a 380% rise in arrests for black market 'grows' between 2014 and 2016. Legalisation, rather than discouraging black market criminals, rather encourages criminal grows under the laxer legislative frameworks governing cannabis use.

Legalisation MULTIPLIES harm and deaths

The conclusion that must be drawn from this newly imagined Harm Reduction measure - where legalisation is legislated to release drug users from the non-physical and newly minted 'harm' of a criminal record - is that legalisation of illicit substances does not merely *add* to the harms already affecting drug users, but rather *multiplies* harm.

Calculating harm in Australia

Harm reduction multiplied individual harms

As previously discussed in this document, harm reduction policies saw increases in Australian heroin use, peaking at 112,000 dependent users by 1999 - (dependent heroin user numbers are calculated from the [methodology](#) used to officially calculate numbers for 1997-1998). As Tough on Drugs prevention methods were implemented, dependent user numbers had shrunk to 36,000 by 2002, a level maintained through 2007.

By 2020 harm reduction policies teamed with inadequate prevention measures, saw another 104,000 new opiate users added to the Australian population. Thus harm reduction policies TRIPLED the number of drug users and likewise tripled the gross level of harm inflicted on those individuals and their community. Add to that the constellation of people harmed around each individual user.

The false economy of harm reduction

Taking the previous drug policy eras:

- 1985-1998 - opiate users number 112,000
- 1998-2007 - opiate users **down** to 36,000
- 2007-2020 - opiate users **up** numbering 141,000

In 2007 there were 36,000 opiate users susceptible because of their drug use to HCV, HIV, opiate related mortality, criminality and poor state of health. Under the harm minimisation policies from 2007 the number susceptible to these unacceptable harms was by 2020 141,000, adding a significant burden to all health care facility.

If harm reduction increases overall drug use and associated harms, then the obviously increased nett harms outweigh any supposed benefit. This leads to a situation where Harm Reduction gives with one hand

and takes with two others. Thus Harm Reduction is a false economy that increases overall the very harms it claims to alleviate.

Disinterested in the harm inflicted on others

The afore-cited IHRA statement reflects that Harm Reduction has no interest in, or even understanding of the harm inflicted on the whole constellation of people around a given drug user. It rather pretends that the harms of illicit drugs are private, contained to the individual user alone. Looking with tunnel vision at the self-inflicted harms of the user and funneling out the harms on those around each individual, harm reduction wilfully ignores the societal impact of drug use.

1 million less families affected by cannabis

Going back to the Australian [success](#) of Tough on Drugs, 17.9% of the population was using cannabis in 1998, reducing under the prevention approach to 9.1% by 2007. There were approximately 1.1 million less cannabis users due to Tough on Drugs, and potentially 1 million less families affected.

The harms of cannabis summarised

Gone are days when cannabis could be characterised as relatively harmless. In 2024 the science on cannabis has advanced to a point where the most sensible harm reduction measure is to not use cannabis at all.

The current science drawn from multiple medical journal studies show that cannabis is:

- causal in 33 [cancer types](#), double that of tobacco - 14
- casual in 70% of pediatric [cancer types](#)
- causal in 89 of 95 [birth defects](#)
- prematurely [ageing](#) users at 30 years by 30%
- causal in [psychosis](#), [violence](#), [suicide](#)

- passes mutations **epigenetically** on to 3 or 4 generations of a user's progeny

Harm reduction is named as such because it seeks to eliminate unacceptable harms caused by illicit drugs. All of the above are unacceptable harms. Prevention of cannabis use will shield millions from these harmful impacts.

Prevention - 1 in 4 Australians saved the grief

Given a conservative 5 people in the constellation of harm around each cannabis user, around 5 million Australians were saved the grief of the effects of cannabis use, or one in every 4 Australians by 2007 according to population figures.

By contrast, harm reduction policies had presided over an ever-increasing use of cannabis which went from 12.7% in 1993 to 17.9% in 1998. Tough on Drugs intervened while the trajectory was still steeply moving upwards. As with previous use of the similarly dangerous tobacco in the 1960s, where 70% of the male population were willing users, the upper limit for cannabis could have been significantly higher than in 1998 and many more Australians drawn into the vortex of harm.

Prevention is thereby demonstrated to have heavily impacted the harm production seen with Harm Reduction policies.

Australia must move to fully discard all Harm Reduction ideologies and interventions if it genuinely cares for users' lives and families.

The next chapter describes what we know exactly to work.

We know exactly what works

SUCCESSFUL INTERVENTIONS

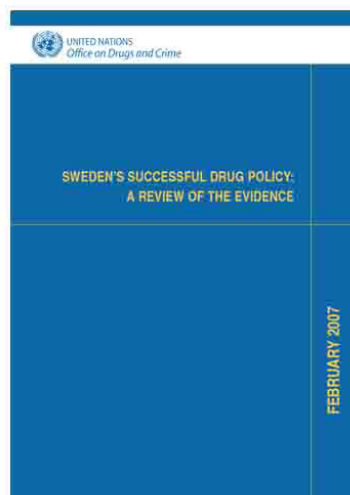
Governments must follow Sweden's success

In 2007 the United Nations Office on Drugs and Crime (UNODC) produced a [booklet](#) titled Sweden's Successful Drug Policy – A Review of the Evidence.

On pages 14 and 15, the UN document spells out the aim of Swedish drug policy.

The goal of society's efforts is to create a drug-free society. This goal has been established by Parliament and has strong support among citizens' organizations, political parties, youth organizations and other popular movements." The bill encouraged people to play an active role, stating that "everybody who comes in contact with the problem must be engaged, the authorities can never relieve [individuals] from personal responsibility and participation. Efforts by parents, family, friends are especially important. Also schools and non-governmental organizations are important instruments in the struggle against drugs.

This vision of a drug-free society still remains the overriding vision. The ultimate aim is a society in which drug abuse remains socially unacceptable and drug abuse remains a marginal phenomenon. In this visionary aim, drug-free treatment is the preferred measure



in case of addiction and prosecution and criminal sanctions are the usual outcome for drug-related crime."

The Swedish drug policy has had the support of 96% of Swedes. The priorities are:

- Coerced rehabilitation
- Education
- Thoughtful and caring policing while maintaining criminal sanctions

This means that decriminalisation of drug use is seen as an impediment to seeking a drug-free society.

Following are graphs from the UN report showing the percentage of Swedish high school age young people (aged 15-16) and Swedish conscripts (aged 18-19) that have ever experimented with illicit drugs. Sharp decreases in illicit drug experimentation are evident in the 80's when the Swedes heavily funded their restrictive program, and then increased in the 90's once they relaxed funding for their drug program due to a poorer economy. **In 2004, the Swedish government admitted it had become too relaxed about illicit drug use, and increased funding again.** High school student

Figure 5: Life-time prevalence of drug use among 15-16 year old students in Sweden, 1971-2006

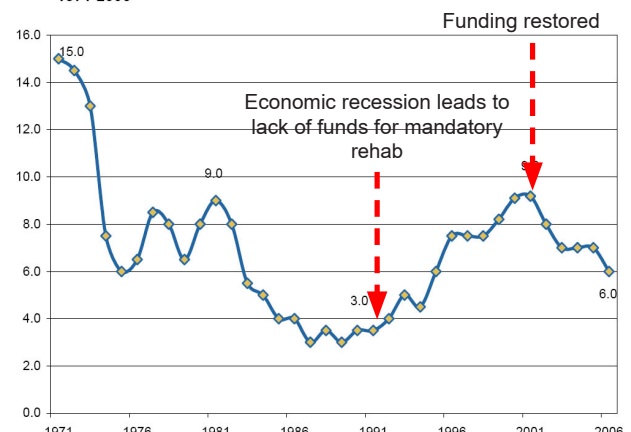
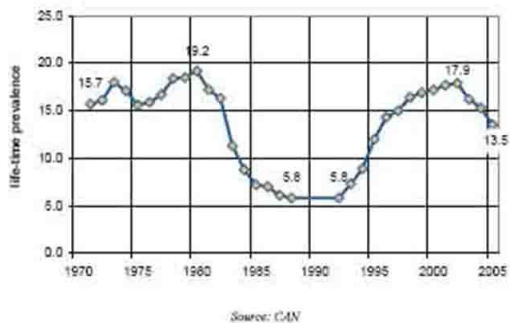


Figure 6: Life-time prevalence of drug use among military recruits in Sweden, 1971-2005



lifetime prevalence for illicit drug use was back to 6% in 2006.

A comparison of EMCDDA 2000 lifetime prevalence percentages for high school age young people between Sweden and the Netherlands is instructive. (The Netherlands claimed that its soft drug policies would keep their drug use down).

Note that the Netherlands did not reach Sweden’s initial levels of drug use until the 80’s. Many other European countries did not equal Sweden’s 1971 levels until the 90’s.

| | | | | |
|--------------------|------|----------|-------|--------|
| Netherlands | 15%* | (1980’s) | 31.7% | (1999) |
| Sweden | 15% | (1971) | 7.7% | (1998) |

* This figure is for cannabis alone (typically other drugs add 1-2% for most European countries)

These low percentages of lifetime prevalence for young people translate to very low levels of Last 12 Months illicit drug use for surveyed Swedish respondents, as compared to the Netherlands and reflect dramatically different outcomes for each country.

Iceland shows what kind of education works

A resilience-based approach to drug prevention was very successfully trialled in Iceland, as reported in the [journal](#), Substance Abuse, Treatment, Prevention and Policy 2008, 3:12. Adolescent cannabis use was reduced by 65% as per documentation at [Appendix D](#).

Drug Free Australia has communicated with Jón Sigfússon, a Director of the Icelandic Centre for Social Research and Analysis, Reykjavik University, and he has identified the following elements in terms of their success: He writes,

For those of you who have less time I take the liberty to quote a few lines from the paper:

... The results from the Icelandic national surveys

were used to develop an effective prevention approach with a broad-scale and systematic assessment of the risk and the protective factors that predicted adolescent substance use in Iceland. The key components of this prevention approach included:

- Educating parents about the importance of emotional support, reasonable monitoring, and increasing the time (we don’t have an emphasis on this...) they spend with their adolescent children.
- Encouraging youth to participate in organized recreational and extracurricular activities and sports.
- Working with local schools in order to strengthen the supportive network between relevant agencies in the local community.

The research underlined the importance of the adolescent-parent relationship, the powerful influence of the peer group, and a commitment to facilitate the participation of adolescents in guided recreational and extracurricular activities, such as sports and organized youth work. The research helped to conceptualize the prevention effort as one that sought both to reduce the potentially-modifiable risk factors for substance use while at the same time strengthening community-level protective factors. Thus, the approach focused not only on reducing risk factors, but also on mobilizing society to foster responsible guardianship, community attachment, and informal social control, all on the local community level. This effort has come to be known as the Icelandic Model of Adolescent Substance Use Prevention. It is important to demonstrate that this approach is not merely a “program” in the conventional sense with a given

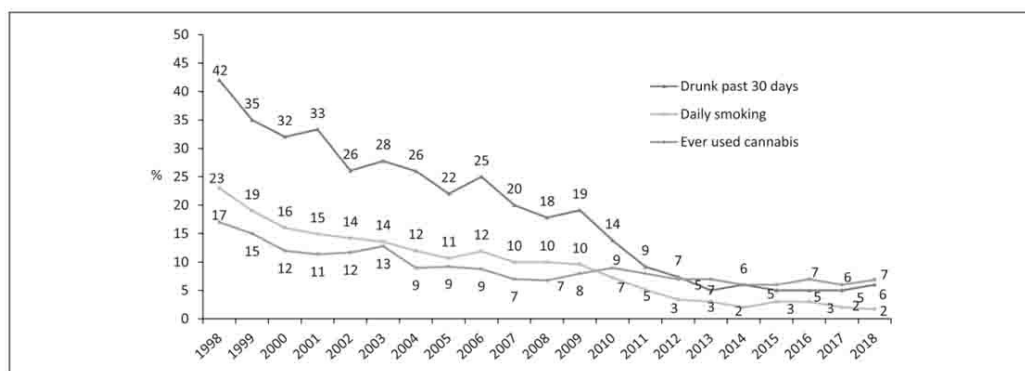


FIGURE 2 Annual Percentage of Self-Reported Substance Use Among Icelandic Adolescents, 1998-2018
SOURCE: Kristjansson et al. (2016).

time frame, but rather a long-term effort to alter society on behalf of young people in Iceland in order to decrease the likelihood of adolescent substance abuse...

Tough on Drugs – reductions of 39%

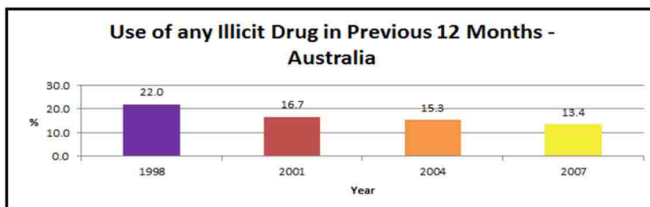
Australia’s Federal Government introduced Tough on Drugs in 1998, with Drug Free Australia’s current President, Major Brian Watters as Prime Minister John Howard’s chief advisor on drug issues. By 2007 the drug policy had reduced illicit drug use by 39% and had drawn the attention of the United Nations - a [document](#) that more fully explains the elements of Tough on Drugs.

Television advertising such as [this](#) and [this](#) was used to put Australia’s drug problem, which was then the highest in the developed world, front and centre with the Australian public. Every household with children in Australia was posted a booklet on how parents should talk to their children about drugs.



Overall illicit drug use reduced 39% - cannabis use was down 50%, heroin use by 75% and amphetamine use by 46%.

Since Tough on Drugs was discontinued in 2008, illicit drug use had increased 34% by 2022.



A proven pathway to less drug use

With Sweden, Iceland and previous Australian policies demonstrating a proven pathway to much lower drug use, Australia has the opportunity to pursue drug

policies that work.

Australians want less drugs, not more

The Australian Government’s Australian Institute of Health and Welfare (AIHW) conducts the National Drug Strategy Household Survey every three years, commonly surveying close to 25,000 Australians each time. This enormous sample gives the surveys a great deal of accuracy and validity.

The last survey was in 2022, and [Table 11.7](#) (at the bottom of this page) from its statistical data indicates Australian approval (or lack thereof) of the regular use of various illicit drugs.

With 95-99% of all Australians not giving their approval to the use of heroin, cocaine, speed/ice and ecstasy, and 77% not giving their approval to the regular use of cannabis, **there is solid evidence that Australians want less drug use, not more.**

Harm Reduction as a philosophy and a praxis has delivered exactly what Australians do not want:

- ineffective government programs
- more drug use
- more drug-related harm
- increasing drug-related deaths

Australians will look to their political leaders to act not in the interests of deep-pocketed major political donors but rather in the interests of their constituencies.

In that context, Harm Reduction can no longer have any place in Australia.

Table 11.7: Personal approval^(a) of the regular use by an adult of selected drugs, people aged 14 and over, by gender, 2007 to 2022–2023 (per cent)

| Drug | Proportion | | | | | | | | | | | | | | | | | | |
|---|------------|------|------|------|------|-----------|------|------|------|---------|------|-----------|------|------|------|------|------|-----------|---------|
| | Males | | | | | | | | | Females | | | | | | | | | Persons |
| | 2007 | 2010 | 2013 | 2016 | 2019 | 2022–2023 | 2007 | 2010 | 2013 | 2016 | 2019 | 2022–2023 | 2007 | 2010 | 2013 | 2016 | 2019 | 2022–2023 | |
| Alcohol | 51.7 | 51.5 | 51.7 | 52.4 | 50.8 | 50.8 | 38.9 | 38.9 | 38.6 | 39.8 | 40.1 | 41.3 | 45.2 | 45.1 | 45.1 | 46.0 | 45.4 | 45.8 | |
| Tobacco | 15.8 | 17.4 | 17.3 | 18.1 | 17.7 | 17.5 | 12.9 | 13.3 | 12.2 | 13.2 | 13.1 | 13.6 | 14.3 | 15.3 | 14.7 | 15.7 | 15.4 | 15.5 | |
| Kava | n.a. | 5.9 | 6.8 | 7.6 | 8.7 | 11.5# | n.a. | 2.6 | 2.9 | 3.3 | 4.1 | 5.9# | n.a. | 4.3 | 4.8 | 5.4 | 6.4 | 8.6# | |
| Illicit drugs (excluding pharmaceuticals) | | | | | | | | | | | | | | | | | | | |
| Marijuana/cannabis | 8.7 | 11.0 | 12.6 | 17.8 | 23.6 | 26.9# | 4.6 | 5.3 | 7.0 | 11.2 | 15.6 | 19.9# | 6.6 | 8.1 | 9.8 | 14.5 | 19.6 | 23.4# | |
| Ecstasy | 2.5 | 3.0 | 3.3 | 3.9 | 5.3 | 6.7# | 1.5 | 1.7 | 1.6 | 1.8 | 2.3 | 3.0# | 2.0 | 2.3 | 2.4 | 2.9 | 3.8 | 4.8# | |
| Methamphetamine or amphetamine ^(b) | 1.5 | 1.5 | 1.6 | 1.6 | 1.6 | 1.8 | 0.9 | 0.9 | 1.1 | 0.8 | 0.9 | 1.1 | 1.2 | 1.2 | 1.4 | 1.2 | 1.2 | 1.5 | |
| Cocaine/crack | 1.8 | 2.2 | 1.9 | 2.0 | 3.0 | 3.4 | 1.0 | 1.2 | 1.3 | 1.4 | 1.7 | 2.2 | 1.4 | 1.7 | 1.6 | 1.7 | 2.3 | 2.8# | |
| Hallucinogens | 2.1 | 3.2 | 4.5 | 5.1 | 8.0 | 12.0# | 1.2 | 1.6 | 1.7 | 2.4 | 3.2 | 7.1# | 1.7 | 2.4 | 3.1 | 3.7 | 5.6 | 9.5# | |
| Inhalants | 1.0 | 1.3 | 0.9 | 0.9 | 1.2 | 1.4 | 0.7 | 0.8 | 1.0 | 1.0 | 0.8 | 0.9 | 0.8 | 1.0 | 0.9 | 1.0 | 1.0 | 1.2 | |
| Heroin | 1.3 | 1.5 | 1.3 | 1.3 | 1.5 | 1.5 | 0.7 | 1.0 | 1.1 | 1.0 | 0.8 | 1.1 | 1.0 | 1.2 | 1.2 | 1.1 | 1.1 | 1.3 | |
| Ketamine | 1.1 | 1.6 | 1.8 | 2.1 | 3.3 | 4.6# | 0.8 | 0.9 | 1.1 | 1.1 | 1.5 | 2.2# | 1.0 | 1.3 | 1.4 | 1.6 | 2.4 | 3.4# | |
| GHB, GBL or 1,4-BD | 0.8 | 1.3 | 1.3 | 1.5 | 1.8 | 2.3 | 0.7 | 0.8 | 1.0 | 0.8 | 0.8 | 0.8 | 0.7 | 1.1 | 1.1 | 1.1 | 1.3 | 1.5 | |
| Pharmaceuticals | | | | | | | | | | | | | | | | | | | |
| Prescription pain-killers/pain-relievers ^(c) | n.a. | 13.4 | 13.0 | 13.2 | 13.3 | 13.7 | n.a. | 12.6 | 12.2 | 12.1 | 11.5 | 12.4 | n.a. | 13.0 | 12.6 | 12.7 | 12.4 | 13.0 | |
| Tranquillisers, sleeping pills ^(c) | 4.8 | 7.2 | 9.5 | 10.1 | 10.1 | 10.2 | 3.4 | 5.7 | 6.8 | 8.5 | 8.5 | 8.9 | 4.1 | 6.4 | 8.2 | 9.3 | 9.3 | 9.5 | |
| Steroids ^(c) | 2.3 | 3.0 | 3.0 | 3.0 | 3.1 | 4.9# | 0.9 | 1.4 | 1.5 | 1.8 | 1.6 | 2.2# | 1.6 | 2.2 | 2.2 | 2.4 | 2.4 | 3.5# | |
| Methadone or buprenorphine ^(c) | 1.1 | 1.5 | 1.3 | 1.6 | 1.8 | 2.0 | 1.0 | 1.0 | 1.2 | 1.1 | 1.2 | 1.1 | 1.0 | 1.2 | 1.3 | 1.3 | 1.5 | 1.6 | |

Appendices

LIST OF APPENDICES

Appendix A

Observations on the 2017 Cochrane Collaboration review of OST and NSP - Dr R.M. Colquhoun

Appendix B

Letter in Lancet exposing either fraud or inept research regarding Vancouver injecting room study

Appendix C

Letter to Lancet by Police Commander John McKay confirming police numbers were tripled around the new Vancouver injecting room in 2003, and remained at those numbers through to 2011 and beyond, explicitly contradicting the false statements made by the Lancet study authors

Appendix D

Summary of both injecting rooms in Melbourne and Sydney, with statistics and qualitative data demonstrating both failed against all their stated objectives, while sharply increasing policing loads

Appendix E

Iceland success documentation

Observations on the 2017 Cochrane Collaboration review of OST and NSP

Dr R. M. Colquhoun

The aim of this paper is to critically analyse the claims by Platt and colleagues that: “Among people who inject drugs (PWID), sharing needle/syringes is the main risk factor for infection with HIV and HCV” and “that NSPs reduce HIV transmission among PWID by 48% (95% confidence interval (CI) 3% to 72%), with strong evidence that OST reduces HIV transmission by 54%. Further, that “As a treatment for opioid dependence, OST has been shown to reduce the frequency of injection and unsafe injecting practices.”

In the Platt paper no evidence is provided to substantiate the effectiveness of OST and NSP programs in reducing the transmission of HIV, and the cited studies do not support their claims.

The Aspinal (2014) study suggests there is evidence to support the effectiveness of NSP in reducing HIV transmission, although the quality of this evidence was graded as low and that an earlier review of reviews (ROR) concluded that there was “only tentative evidence to support the effectiveness of NSP in reducing HIV” and that only a minority of studies support this claim.

The other study they cite to support their claim “showed that opiate substitution treatment was associated with a substantial reduction in risk of HIV infection among people who inject drugs” (MacArthur, 2012). In the review of the evidence for reduction of HCV infection among IDUs they state that “the evidence is considered as low quality because it was derived from observational studies with serious risk of bias and that “Meta-analysis of five observational studies pooling adjusted estimates from 3530 anti-HCV negative participants show low quality evidence that high NSP exposure does not reduce the risk of HCV acquisition.”

Contrary to the assertion that “There is good evidence for the effectiveness of NSP and OST in reducing injecting risk behaviour and increasing evidence for the effectiveness of OST and NSP in reducing HIV acquisition risk” and HCV infection (Platt et al., 2017, Mattick, 2009a) the evidence indicates the opposite is true.

After many years of strongly advocating OST and

NSP programs the authors concede that “the evidence on the effectiveness of NSP and OST for preventing HCV acquisition is weak” and in fact is non-existent given the lack of RCTs and the reliance on poor quality observational studies. Mattick and colleagues state that “As well as reducing heroin use and crime, methadone maintenance treatment is expected to be effective in the reduction of HIV infection among heroin users” as HIV infection is most often transmitted among injecting drug users as a result of sharing needles. However, a fair evaluation of the assumptions that underpin these programs show that the evidence indicates that OST and NSP programs have been abject failures.

They have created an expectation that use of clean needles will prevent and HCV and HIV transmission and are likely to have had the effect of encouraging those who had never injected drugs to do so. After the initial claim that OST programs would allow IDUs to withdraw from opiate addiction this has been shown to do the opposite - those who transition to opiate substitutes stay addicted to these drugs for many more years than they would if they had stayed with heroin - thus increasing the risk of infection and mortality.

Moreover, Governments have wasted millions of dollars on these programs that could have been used in prevention strategies, thus saving many from developing an addiction and saving many lives.

Most damning is the fact that the premises or assumptions that encouraged these false assertions of the effectiveness of these programs are false, thus rendering the very slim evidence of their effectiveness to also be valueless.

It has been established for many years that:

- injecting drug use has minimal if any impact on HIV infection rates,
- while HCV is almost exclusively transmitted by unsafe drug injecting,
- that sexual contact has had very little, if any, impact on transmission rates,
- that many using OST are already infected with HCV before they commence OST and that they continue to inject drugs: amphetamine (62%) and heroin

(61%). Over half of the sample (62%) continued to use contaminated needles and injecting paraphernalia (O'Brien, 2007).

- Further, HR advocates state that “methadone maintenance is effective in reducing HIV infection”...and ...”this may not be the case for HCV as HCV is more readily transmitted than HIV” with infection rates of between 50% and 95% (Mattick, 2009a, p. 123).

The research of Guy et al. (2007) found that the most frequent route of HIV exposure was male-to-male sex, accounting for 70% of diagnoses while heterosexual contact accounted for 18% of cases, with just over half of these people born in or having a sexual partner from a high-prevalence country and that transmission by injecting drug use was infrequent. It is accepted that even when an argument is valid, when premises are false then the conclusions are not sound and are false.

Indeed, as the premises are false it means any attempt to draw a conclusion or to prove the contrary is doomed from the beginning. However, advocates for OST and NSP seem not to understand this basic principle of logic or else deliberately ignore it in their advocacy of OST and NSP programs.

The arguments and assumptions for the research and conclusions regarding HCV and HIV infections and the effectiveness of OST and SNP programs are:

Argument A

Premise (1) That needle sharing is a major cause of HIV transmission;

Premise (2) That OST has the effect of reducing injecting drug behaviour;

Conclusion: OST and NSPs reduce HIV transmission rates.

Argument B

Premise (1) That HCV infection rates among IDUs are very high;

Premise (2) That OST and SNPs result in reductions in rates of injecting drugs;

Premise (3) IDUs will use of clean injecting equipment at high rates;

Conclusion: OST and SNPs result in significantly lower rates of HCV infection among IDUs.

While these arguments are logically valid neither of the conclusions are sound as the premises on which they are based are not true. That is, HIV is very rarely transmitted by injecting drugs making OST and SNPs irrelevant and HCV infections are already at high rates when IDUs enter treatment with the prevalence and incidence of hepatitis C virus (HCV) among Australian injecting drug users (IDUs), around 50 to 60 percent and 15 percent respectively and that they continue to inject drugs and fail to exclusively use clean injecting

equipment (O'Brien, 2007), with some seventy six (76) percent of IDUs accessing OST and SNPs having hepatitis C which renders NSPs insignificant in reducing HCV infection rates.

These programs fall far short of eliminating or significantly lowering the use of contaminated equipment and fail to lower HCV infection rates and are irrelevant in reducing HIV infection rates.

The review of the studies on NSPs and OSTs and HCV and HIV show that there are high rates of HCV among IDUs when they commence treatment, that IDUs continue to inject drugs and do not use clean equipment each time they inject and continue to be infected or reinfected and that the studies on HIV showed that transmission was primarily due to risky sexual behaviour and no conclusions could be reached regarding the effectiveness of NSPs on HIV transmission.

Despite this, advocates for harm reduction (HR) continue to claim that the evidence is “substantial” (MacArthur, 2014) that needle syringe programmes are effective and cost-effective even when no conclusive evidence is cited and that “it is effective in reducing heroin use, crime, drug related mortality and HIV” (Mattick, 2009a, p133) despite a Cochrane review of methadone research finding that it is no more effective than no treatment on rates of crime or mortality or on HIV transmission (Mattick, 2009b). The gap between the assumptions and the very meagre research evidence and the conclusions of the effectiveness claimed by advocates of OST and SNPs is breath-taking and borders on academic fraud.

The introduction of methadone was an attempt to reduce the harm associated with heroin addiction and to facilitate withdrawal from the drug while IDUs stabilised their lives. The major harm to be prevented was from HIV infection related to sharing needles to inject the drug. However, there has been no convincing evidence to demonstrate that methadone has had any impact on HIV rates.

Observational research has purported to show that methadone tends to reduce heroin use, improve health outcomes, reduce overdose deaths and reduce drug-related crime. However, the evidence is weak and reviews of the controlled trials comparing methadone to no treatment indicate that there is no difference in terms of criminality and mortality (Mattick, 2009b). No trials have shown any improvement in health outcomes or reduction in HIV transmissions.

Moreover, people dependent on methadone and other substitute agonist medications continue to overdose and die at alarming rates. In Scotland 60% of drug related deaths implicate methadone. Very few people manage to stop with only 3% ceasing use each year despite being ‘in treatment’. Research shows that

those who have no treatment and have never been on methadone achieve abstinence at much higher rates.

Methadone (the principal agonist drug prescribed) does not have any proven effect other than to retain people in treatment or reduce injecting drug use in the short term (Mattick, 2009b). And yet in Australia thousands are hopelessly addicted to this dangerous drug that costs the community in the region of \$150m each year.

After many failed attempts to help addicts escape their addiction by inducting them onto OSTs it is apparent that it is also more addictive than heroin and much harder to withdraw from and has negative long-term consequences in terms of health and social outcomes. Moreover, many people on methadone continue to use heroin and to develop addictions to and inject other drugs (O'Brien, 2007). They also often find it very difficult to find or retain employment, they find it difficult to be emotionally available to their partners or children and their life-choices are compromised; and despite the claims to the contrary retention in these programs is also poor with less than 50% staying in the programs at 6 months before relapsing to heroin.

As a secondary benefit, methadone was meant to enable heroin addicts to stabilise their lives and then move from addiction to abstinence. These aims have clearly been abandoned, with people now having been on these drugs for 40 years or more and a black market in methadone and fentanyl thriving, meaning that these drugs are often more accessible than heroin.

As reported by Mattick and colleagues, "a consistent finding in the studies of methadone-assisted heroin detoxification is the high rates of relapse to heroin use following cessation of methadone doses" (Mattick, 2009a, p 65). Despite this admission the same authors state that "Methadone assisted withdrawal has shown to be safe, effective and acceptable" (Mattick, 2009a, p85).

What is most disturbing is the fact that health authorities have no idea how to get people off methadone once its usefulness, if any, has been exhausted. Detoxification rates for buprenorphine are similarly poor, although some claim it is marginally more effective in the short term (Mattick, 2009a).

At present in Australia, according to the Australian Institute of Health and Welfare, as at April, 2023, there were around 55,700 people receiving agonist maintenance treatment across Australia on any given day, which is approximately the same number who were on OSTs in 2009.

Moreover it directly cost our community some \$150m each year at an estimate of \$4500 to maintain each person on methadone. It is the most prescribed

drug in Australia with 61% of all prescriptions being for this substitute opioid (AIHW, 2023).

While it is claimed that methadone maintenance remains "the most researched treatment for this problem," there are very few studies that are cited and despite the widespread use of methadone maintenance treatment for opioid dependence in many countries, its effectiveness has been disputed for good reasons. Its purported benefits have never been proven and research shows that these claims are not supported and yet advocates continue to promote its use (Mattick, 2009a; Platt, 2017).

It was also thought that if methadone could reduce injecting behaviour among heroin addicts, then it would by default reduce needle sharing and hence prevent HCV infection and improve health outcomes. For a number of reasons this has not been shown to be true. Firstly, injecting drug use is at best reduced, not stopped. Moreover, as people tend to stay on methadone for many years it is likely that overall injecting behaviour is prolonged. Secondly, it is recognised that it can only be effective if those few injecting drug users who are HCV negative stop sharing needles. To prevent needle sharing sterile needles have been provided at a cost of some \$40m each year for the little benefit.

The research indicates that many tend to continue to share due to factors such as impulsive behaviour associated with drug use and the social norms among injecting groups, and that provision of clean needles only reduces sharing by some 15%. However, the research shows that up to 70% of injecting drug users who are accessing needle exchange facilities and methadone clinics are testing HCV positive, while injecting drugs is only responsible for 3-4% of HIV transmissions. Most new cases of HIV result from unsafe and multiple-partner sex, particularly among homosexual men, and is associated with high rates of other sexually transmitted diseases (O'Brien, 2007).

These statistics (facts) mean that even if methadone was effective in reducing injecting rates and needle sharing, it could not reduce HCV infection rates, which are often at saturation levels among IDUs while it would have negligible or no effect on HIV infection rates. Clearly, the claims made and the aims espoused have not been realised despite the costs to the community. An urgent review, based on the evidence, of the role of methadone (OSTs) and NSPs is required.

Attention therefore needs to shift to other preventative strategies, including community education and to treatment. Despite the clear differences in the means of transmission HIV and HCV the factor that was common to both groups was persistent risky behaviour, hence resulting in cross infection that was found to be

up to 80% among some groups. Accordingly, prevention should target those at risk of acquiring the viruses and should involve providing education, risk reduction counselling, HIV and HCV screening and substance abuse treatment.

For HCV, counselling should be focused on drug treatment, while for HIV the focus of prevention should be on safe sex practices. In both cases those found to have viral infections need to be counselled to reduce the risk of HIV and HCV transmission to others. They should also be offered counselling and treatment for alcohol abuse and other STDs.

The current statistics indicate the failure of the OST programs, which were touted as a major plank in the harm minimisation policy. In 2000 there were approximately 50,000 people receiving OST. In 2022 there were approximately 49,000. As most people tend to stay on these substitute opioids for many years as it is much harder to withdraw from than opiates like morphine and heroin, it is likely that few people have commenced this treatment over the last 20 years or more, as shown that over the past 10 years the average age of OST recipients has increased from 38 in 2011 to 45 years in 2022. This is despite the fact that over this period there has been an increase in the number of people using illicit opiates and an increase in overdose deaths from a low of 316 in the early 2000s after the introduction of the Tough on Drugs program to 1123 opioid induced deaths in 2022 (AIHW).

Instead of reducing harm Australia has seen an enormous increase in the number people using opioids for illicit or non-medical purposes to approximately 715,000, while in 2000 there were an estimated 73,000 Australians who were misusing opioids (AIHW).

While HM has not been at all successful in reducing illicit opioid misuse use and the harm associated with it, it has also seen a significant increase in meth or ICE use. Among other harm, the risky behaviour it causes has resulted in a very large increase in STDs. For example: In 2000, the number of sexually transmitted diseases (STDs) reported in Australia included: Chlamydia: 27,792 cases; Gonorrhoea: 7,347 cases; and Syphilis: 1,309 cases. In 2022, the reported STD cases in Australia were: Chlamydia: 93,777 cases; Gonorrhoea: 32,877 cases, and; Infectious Syphilis: 6,036 cases. These figures reflect a significant increase in STI cases over the two decades. (RACGP). The increase in drug use, especially 'chemsex' is a potent driver of this health crisis.

Policies that have been effective have been neglected while harm reduction policies, driven by a political agenda that shows no demonstrable impact on HIV and HCV rates, has been promoted in the last 40 years or more.

References

AIHW. (2023) National Opioid Pharmacotherapy Statistics Annual Data collection 20 Apr 2023. <https://www.aihw.gov.au> (accessed 04/01/2024)

Aspinall_EJ, Nambiar_D, Goldberg_DJ, Hickman_M, Weir_A, Van_Velzen_E, et al. Are needle and syringe programmes associated with a reduction in HIV transmission among people who inject drugs: a systematic review and meta-analysis. *International Journal of Epidemiology* 2014;43(1):235-48.

Guy, R.J., McDonald, A. M., Bartlett, M. J., Murray, J. C., Giele, C. M., Davey, T. M., Appuhamy, R. D., Knibbs, P., Coleman, D., Hellard, M.E., Grulich, A. E. and Kaldor, J. M. HIV diagnoses in Australia: diverging epidemics within a low-prevalence country *Medical Journal of Australia* 2007; 187 (8): 437-440.

MacArthur_GJ, Minozzi_S, Martin_N, Vickerman_P, Deren_S, Bruneau_J, et al. Opiate substitution treatment and HIV transmission in people who inject drugs: systematic review and meta-analysis. *BMJ* 2012;345:e5945.

Mattick, R. P., Ali, R. and Lintzeros, N. (2009a). *Pharmacotherapies for the Treatment of Opioid Dependence: Efficacy Cost Effectiveness and Implementation Guidelines*. Informa; New York

Mattick, R. P., Breen, C., Kim ber, J. and Davoli, M. (2009b). Methadone maintenance therapy versus no opioid replacement therapy for opioid dependence (Review). *Cochrane Review*, 3. doi 10.1002/14651858.CD002209.

O'Brien, S., Day, C. Black, E., Thetford, C. and Dolan, K. (2007) *Injecting drug users' understanding of Hepatitis C*. Sydney: National Drug and Alcohol Research Centre. Technical Report No. 262

Overdose deaths and Vancouver's supervised injection facility

The report by Brandon Marshall and colleagues (April 23, p 1429),¹ in which it is claimed that the opening of a supervised injection facility on Sept 21, 2003, in Vancouver, BC, Canada, was associated with a 35% decrease in overdose deaths in its immediate surrounding, contains serious errors.

The claim that all overdose deaths in Vancouver declined between 2001 and 2005 is strongly affected by the highly questionable inclusion of the year 2001—a year of much higher heroin availability and overdose fatalities than all subsequent years. A study period starting from 2002 in fact shows an increasing trend of overdose deaths both for Vancouver and for the Downtown Eastside area in which the facility, Insite, is situated (figure);² the control areas compared in Marshall and colleagues' study.

Curiously, the higher availability of heroin up until 2001, which declined by 2002 and which has remained low since that year, was specifically tracked in two previous articles^{3,4} by three of the current paper's researchers and therein treated as extraordinary. In their latter 2007 study,⁴ the aforesaid three researchers noted that, in a large cohort of Vancouver drug users, 21% had reported non-fatal overdoses in the previous 12 months in 1997, dropping to 12% at the beginning of 2001 and to 5% by the end of 2001, rising to 6% in 2004. They clearly point to reduced heroin supply as the reason, and yet in the *Lancet* paper specifically state that "we have no evidence that significant changes in drug supply or purity occurred during the study period", which of course was 2001 to 2005.

Of even greater concern is the statement in the *Lancet* paper that "we know of no changes in policing policy that could have confounded our results". Again, three of the

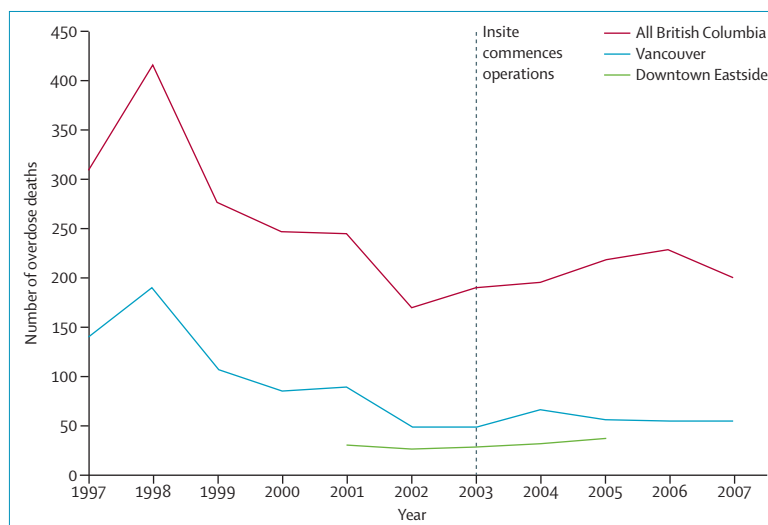


Figure: Drug overdose deaths 2001-05

researchers were so well apprised of major policing changes in the area immediately around Insite during 2003, the same year it opened, that they wrote a 2004 article tracking the "displacement" of drug users out of the policed area around Insite and into other areas of Vancouver.⁵ In that article they record counts of discarded needles reducing by 46% in the policed areas whereas needle counts in other areas of Vancouver increased by similar proportions. Most of the overdoses that were the subject of the questionable 35% reduction immediately around Insite lay specifically in the 12 city blocks patrolled by 48-66 police added in 2003 and operative to this day (personal communication). This major change in policing around Insite is clearly the most likely cause of any real reductions in overdoses that might be found in the immediate vicinity of the injection facility.

Finally, Marshall and colleagues do not declare that 41% of British Columbia's overdose mortality is non-injection-related.⁶ This being the case, the researchers had the obligation of declaring the specific proportion of deaths that were non-injection-related in the vicinity of Insite, compared with the rest of Vancouver.

An extended analysis is available online. We declare that we have no conflicts of interest.

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- 1 Marshall BDL, Milloy M-J, Wood E, Montaner JSG, Kerr T. Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. *Lancet* 2011; **377**: 1429-37.
- 2 Ministry of Public Safety and Solicitor General. Illicit drug deaths 1997 to 2007. <http://www.pssg.gov.bc.ca/coroners/publications/docs/stats-illicitdrugdeaths-1997-2007.pdf> (accessed Dec 7, 2011).
- 3 Wood E, Stoltz JA, Li K, Montaner JS, Kerr T. Changes in Canadian heroin supply coinciding with the Australian heroin shortage. *Addiction* 2004; **101**: 689-95.
- 4 Kerr T, Fairbairn N, Tyndall M, et al. Predictors of non-fatal overdose among a cohort of polysubstance-using injection drug users. *Drug Alcohol Depend* 2007; **87**: 39-45.
- 5 Wood E, Spittal PM, Small W, et al. Displacement of Canada's largest public illicit drug market in response to a police crackdown. *CMAJ* 2004; **170**: 1551-56.
- 6 Milloy MJ, Wood E, Reading C, Kane D, Montaner J, Kerr T. Elevated overdose mortality rates among First Nations individuals in a Canadian setting: a population-based analysis. *Addiction* 2010; **105**: 1962-70.

For the extended analysis see http://www.drugfree.org.au/fileadmin/Media/Global/Lancet_2011_Insite_Analysis.pdf

Submissions should be made via our electronic submission system at <http://ees.elsevier.com/thelancet/>

Authors' reply

Gary Christian and colleagues raise various concerns in reference to our paper that showed a 35% reduction in overdose mortality within the vicinity of Vancouver's supervised injecting facility. They refer to publicly available data from the British Columbia Vital Statistics Agency to argue that overdose deaths increased rather than decreased in the geographic area of interest between 2001 and 2005. This apparent discrepancy can be explained by several problematic assumptions that underlie Christian and colleagues' critique.

First, our study focused on an a-priori-defined area in close proximity to the supervised injecting facility that included 41 city blocks, the centroid of each being within 500 m of the facility. The data considered by Christian and colleagues refer to a much larger region (ie, the entire local health area) that includes about 400 city blocks (figure). As shown clearly in figure 3 of our paper,¹ the reduction in overdose mortality was only noted in close proximity to the supervised injecting facility, with the effect diminishing strikingly beyond this area.

Second, although we restricted our analysis to deaths deemed by the coroner to be caused by an accidental illicit drug overdose, the data referred to by Christian and colleagues include all drug-induced deaths (eg, suicides and adverse effects of drugs in therapeutic use).² Finally, we examined mortality rates as opposed to absolute death counts to account for changes in the population at risk.

Christian and colleagues further claim that the noted reduction in overdose mortality was due to increased heroin availability in 2001; however, we have previously published data to show that daily heroin use remained stable between 2001 and 2005.^{3,4} These data were referenced in our original report. Additionally, publicly available assessments of the police crackdown to which Christian and colleagues refer show that this operation ended within weeks of the

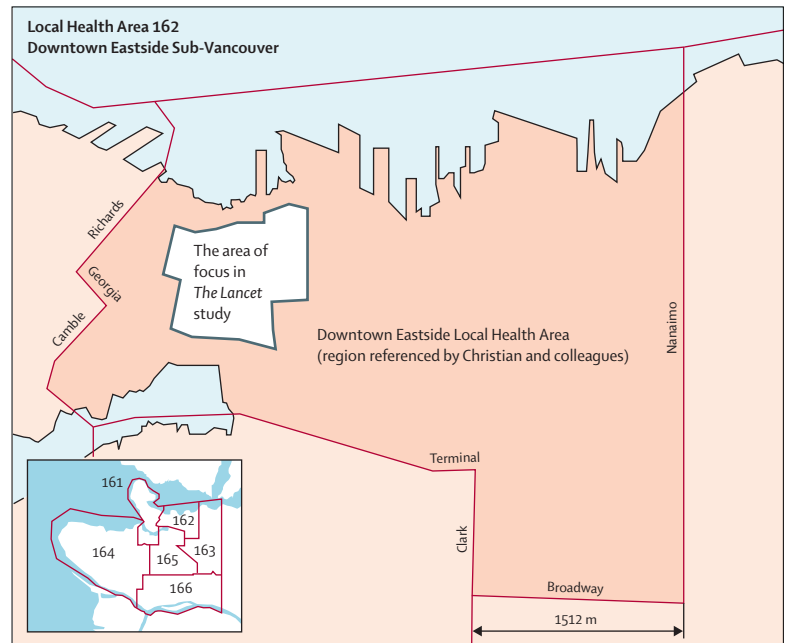


Figure: Comparison of geographic regions defined as the area of interest in our paper versus that referred to by Christian and colleagues

Figure modified and reproduced from publicly available documentation maintained by BC Stats. For this documentation see <http://www.bcstats.gov.bc.ca/data/pop/maps/LHApdf/hamap162.pdf>.

opening of the supervised injecting facility and was not ongoing as they claim;⁵ therefore, any brief displacement of drug users would have probably resulted in a conservative bias by differentially reducing overdose mortality in the area of interest before the facility's opening.

Finally, regarding mode of drug use, we note that coroners' records do not indicate whether deaths were injection-related or not. However, if we restrict our analysis to records in which injection drug use was indirectly suggested, including for example discarded injection paraphernalia surrounding the decedent (ie, 85% of the original 89 deaths occurring within 500 m of the supervised injecting facility), our estimate for the reduction in overdose mortality is slightly greater at 36%.

The results of our study show that Vancouver's supervised injecting facility had a localised yet significant effect on overdose mortality. These facilities can and should be a central component of evidence-based responses to reducing drug-related harms in communities

with a high burden of overdose related to injection drug use.

JSGM as received educational grants from and served as an ad-hoc adviser to or speaker at various events sponsored by Abbott Laboratories, Agouron Pharmaceuticals, Boehringer Ingelheim, Borean Pharma, Bristol-Myers Squibb, DuPont Pharma, Gilead Sciences, GlaxoSmithKline, Hoffmann-La Roche, Immune Response Corporation, Incyte, Janssen-Ortho, Kucera, Merck Frosst Laboratories, Pfizer Canada, Sanofi Pasteur, Shire Biochem, Tibotec, and Trimeris. All other authors declare that they have no conflicts of interest.

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- 1 Marshall BDL, Milloy M-J, Wood E, Montaner JSG, Kerr T. Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. *Lancet* 2011; **377**: 1429-37.
- 2 British Columbia Vital Statistics Agency. Selected vital statistics and health status indicators. <http://www.vs.gov.bc.ca/stats/annual/2005/pdf/ann05.pdf> (accessed Oct 22, 2011).

- 3 Wood E, Stoltz JA, Li K, Montaner J, Kerr T. The cause of the Australian heroin shortage: time to reconsider? *Addiction* 2006; **101**: 623–25.
- 4 Urban Health Research Initiative of the British Columbia Centre for Excellence in HIV/AIDS. Drug situation in Vancouver. <http://uhri.cfenet.ubc.ca/images/documents/dsiv2009.pdf> (accessed Dec 9, 2009).
- 5 Dandurand Y, Griffiths C, Chin V, Chan J. Confident policing in a troubled community: evaluation of the Vancouver Police Department's city-wide enforcement team initiative. <http://www.vancouveragreement.ca/wp-content/uploads/ConfidentPolicing2004sm.pdf> (accessed Oct 22, 2011).

Pelvic floor muscle training after prostate surgery

The conclusion of the scientifically robust study by Cathryn Glazener and colleagues (July 23, p 328),¹ that pelvic-floor muscle exercise taught by a continence health professional after prostate surgery is unlikely to be effective or cost effective, is misleading and possibly erroneous.

Glazener and colleagues should have considered that their *intervention* was not effective and provided a more critical appraisal of its failure. The intervention was weak on several counts but particularly lacked a plausible biological rationale, since it did not address the importance of control of the urethral sphincter, which did not rate a mention anywhere. Men were only—and repeatedly—instructed to “contract the pelvic floor as if holding on to wind” and assessed at each of four visits per anum. This not only provided inappropriate sensory feedback but also taught and reinforced inappropriate motor control.

Lacking was the action of flow-stopping, which produces an antero-cranial movement of the urethra at the bladder base, owing to activation of the puboperineales, and activation of the external *urethral* sphincter.² The ability to lift the urethra more than 2 mm with this action has been correlated with early recovery of urinary control.² Examination

per anum might be a reproducible test of pelvic floor muscle function in men,³ but that does not make it a valid test of urethral sphincter function. Information from the internet⁴ might have reinforced such erroneous concepts for the 50% of men in the control group doing exercises, contributing to the lack of between-group difference and poor results overall.

We declare that we have no conflicts of interest.

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- 1 Glazener C, Boachie C, Buckley B, et al. Urinary incontinence in men after formal one-to-one pelvic-floor muscle training following radical prostatectomy or transurethral resection of the prostate (MAPS): two parallel randomised controlled trials. *Lancet* 2011; **378**: 328–37.
- 2 Nishida S, Utsunomiya N, Nishiyama H, Kamoto T, Ogawa O, Kinoshita H. Urethral mobility at catheter removal predicts early recovery of urinary continence after radical prostatectomy. *Int J Urol* 2009; **16**: 375–78.
- 3 Wyndaele JJ, van Eetvelde B. Reproducibility of digital testing of the pelvic floor muscles in men. *Arch Phys Med Rehabil* 1996; **77**: 1179–81.
- 4 Australian Government Department of Health and Ageing. Pelvic floor muscle training for men. <http://www.bladderbowel.gov.au/assets/doc/Factsheets/English/05PelvicFloorMenEnglish.pdf> (accessed Nov 29, 2011).

In the MAPS trial, Cathryn Glazener and colleagues¹ noted similar high rates of incontinence at 12 months after radical prostatectomy or transurethral resection of the prostate in patients randomised to therapist-guided pelvic-floor muscle training or to standard care. We did a similar trial after radical prostatectomy,² which Glazener and colleagues state had unexplained differential dropout from the control group. We wish to add some comments on this matter as well as on other aspects of Glazener and colleagues' Article.

First, the relatively high dropout rate (13 of 53) in the control group of our trial² did not jeopardise the

randomisation efficacy of the two groups. Additionally, the heterogeneity of a Cochrane meta-analysis, to which Glazener and colleagues suggest that our trial added, is due to variability in several features, such as patient selection, surgeon technique and volume, definition of urinary incontinence, duration and frequency of training, and choice of control.

Second, in our trial, long-term physician-guided pelvic-floor muscle training until urinary continence was achieved or for up to 12 months proved to be more effective than no training. This effect is supported by the results of a randomised trial by Overgård and colleagues,³ which showed that patients who received long-term physiotherapist-guided pelvic-floor muscle training compared with those training on their own had a significantly lower incontinence rate at 12 months (3 of 36 vs 11 of 39), despite a similar continence rate at 3 months.

Third, although in the MAPS trial¹ a pad test was not used because of practical difficulties and the apparently more important role of subjective incontinence measures, we consider it important to discriminate the degree of incontinence, since in our² and others'⁴ experience pelvic-floor muscle training seems to be more effective for mild and moderate incontinence.

We declare that we have no conflicts of interest.

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- 1 Glazener C, Boachie C, Buckley B, et al. Urinary incontinence in men after formal one-to-one pelvic-floor muscle training following radical prostatectomy or transurethral resection of the prostate (MAPS): two parallel randomised controlled trials. *Lancet* 2011; **378**: 328–37.
- 2 Manassero F, Traversi C, Ales V, et al. Contribution of early intensive prolonged pelvic floor exercises on urinary continence recovery after bladder neck-sparing radical prostatectomy: results of a prospective controlled randomized trial. *NeuroUrol Urolyn* 2007; **26**: 985–89.

A second letter was sent to Lancet on 6 April 2012, a letter which Lancet chose not to publish. We note that the Chief Editor of Lancet is a co-Board member of a drug law reform organisation of which two of the authors of the erroneous Lancet study which we have here addressed are also members as per http://www.icsdp.org/network/scientific_board.aspx.

Gary Christian
DFA Research Coordinator

The Lancet Editor

We have read the authors' response and respectfully repeat our request for retraction of the study on the grounds that the authors' conclusions are based on demonstrable fallacies.

The central fallacy which invalidates the study is the claim that the authors knew of no changes in policing that could otherwise explain their findings. We have previously demonstrated that there was a police crackdown commencing at the mid-point of the study period so effective that drug use indicators were reduced by 46%. This occurred precisely in the Vancouver city blocks where the highest concentrations of overdose mortality studied by the authors had previously occurred. These policing changes readily explain the 35% decrease in overdose mortality around Insite claimed by the authors.

The authors' response also incorrectly claims that the April 2003 crackdown ceased after 6 months, when Insite opened in September 2003. To support that claim the authors cite a City of Vancouver evaluation of the crackdown. However, if read in its entirety, this document clearly states, "as of August 2004, the initiative is still ongoing, albeit in a slightly modified form." [i][i] At best, the authors' response lacks the appropriate rigour.

Furthermore, we have forwarded a written statement by the Vancouver Police commander directing the ongoing crackdown throughout the second half of the Lancet article's study period ending 2005. This statement unambiguously contradicts the authors' response that the crackdown ceased in September 2003. There was, in fact, only a change of operational name for the policing crackdown (CET became BET) with no significant change in operational approach, personnel or strategy. The continuation of the crackdown to this day is beyond conjecture. On these grounds alone, the authors' central claim about the impact of Insite is rendered invalid. There are, however, other substantive errors in the authors' response.

Plummeting heroin use between 1998 and 2002, which the authors continue to deny in their response, is verified in another study of Vancouver's VIDUS cohort by the same authors. It states, "As indicated in Fig. 1, the proportion of participants reporting a non-fatal overdose has declined steadily since enrolment, with 21% of individuals reporting a non-fatal overdose in 1997 compared with just 6% in 2004. The most substantial decline occurred during 2001, with the proportion of participants reporting a non-fatal overdose declining from 12% to 5% during this year." [ii][ii]

Consistent with this, Vancouver experienced a 74% decrease in heroin mortality between 1998 and 2002, with non-fatal overdoses decreasing in the VIDUS cohort between 1997 and 2001 (as would be expected) by 76%, as per quote above. Yet the authors' response cites largely irrelevant VIDUS cohort *daily heroin use* figures rather than overdose percentages, in a study focusing on overdose mortality. Where Canadian heroin users were estimated to inject on average four times daily, daily use figures will remain relatively unchanged even

though the average number of daily injections declines along with a 75% reduction in heroin supply and a 75% reduction in overdoses.[iii][iii] Tracking non-fatal overdoses and overdose mortality is a more accurate measure of fluctuations in supply, as is done by these same researchers in two previously studies quoted in our analysis, and by Australian researchers correlating overdose mortality with a heroin drought.[iv][iv] Elevated heroin supply and elevated overdoses ended with 2001, making that year invalid for inclusion in the study period. Its inclusion creates the illusion of a subsequent decline in overdose mortality. In fact there is a trend towards an increase in overdose mortality from 2002 onwards, starting the year before Insite opened.

We also note that the authors' response claims there are flaws in our analysis. We refute these as follows.

1. Contrary to the authors' assertion, Vital Statistics coroner's data are never used in our analysis to infer any increases in overdose deaths in the 41 block area where the claimed 35% decline occurred. Rather, BC Coroner's data is used to show that there was an increasing trend in overdose deaths for the CONTROL AREA of the City of Vancouver, and the Vital Statistics coroner's dataset was used to show that the same increasing trend was true for the 400+ block area around Insite from 2002-2005.
2. Contrary to the authors' assertion, we did exclude the 5 of 155 Vital Statistics deaths, leaving the same 150 DTES non-intentional overdoses on which the authors deliberated. We thereby demonstrated increases in DTES area deaths for 400+ city blocks from 2002 to 2005 even after these 5 intentional/other deaths were excluded.
3. The authors are also incorrect in their statement that we failed to do an in-depth analysis of the 41 block area where the 35% decrease was alleged to have occurred. Rather, our analysis contains a map with the exact location of all 89 deaths within the 41 block area. We further demonstrated that two-thirds of these deaths fall within the 12 block area patrolled by the 48-66 extra police deployed since April 2003. This suggests that the majority of these deaths likely happened in the pre-Insite comparison period when these blocks were an 'open drug scene'.
4. We have noted elsewhere that, "When . . . increases in overdose deaths are compared against population growth in both Vancouver and the DTES the increases in deaths well overwhelm any changes in population. The Lancet study, at Table 2, calculates a 3% change in Vancouver's population between 2001 and 2005, yet drug deaths increased by a much greater 14% from 2002. The Lancet study calculated an 8% increase in population for the DTES, yet drug deaths increased by 37% from 2002. In the scenario where all 5 intentional/other deaths, as discussed previously, occurred in the DTES in 2005 alone, the increase in drug deaths would still be 18%, well beyond the 8% population increase for that area of Vancouver." [v][v]

In summary, in their response to our analysis, the authors have failed to satisfactorily address any of our criticisms. The Lancet Insite article therefore remains seriously flawed on multiple grounds. It should be retracted.

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[i][i] Dandurand Y et al., Confident Policing in an Troubled Community – Evaluation of the Vancouver Police Department’s City-wide Enforcement Team Initiative p 49 <http://www.vancouveragreement.ca/wp-content/uploads/ConfidentPolicing2004sm.pdf>

[ii][ii] Kerr T, Fairbairn N, Tyndall M, Marsh D, Li K, Montaner J, Wood E. Predictors of non-fatal overdose among a cohort of polysubstance-using injection drug users. Drug and Alcohol Dependence 87 (2007) p 40 <http://www.ncbi.nlm.nih.gov/pubmed/16959438>

[iii][iii] Canadian Government’s Final Report of the Expert Advisory Committee, Vancouver’s INSITE service and Other Supervised Injection Sites: What has been learned from the Research? See par. 4 of Background section <http://www.hc-sc.gc.ca/ahc-asc/pubs/sites-lieux/insite/index-eng.php#insite>

[iv][iv] WA DAO, Heroin trends tracking: relationships between indices of heroin and crime. DAO Monograph No. 3 pp 20-22 http://www.dao.health.wa.gov.au/DesktopModules/Bring2mind/DMX/Download.aspx?Command=Core_Download&EntryId=63&PortalId=0&TabId=211

[v][v] Pike G, Santamaria J, Reece AS, DuPont R, Mangham C, Christian G, Analysis of the 2011 Lancet study on deaths from overdose in the vicinity of Vancouver’s Insite Supervised Injection Facility. Journal of Global Drug Policy & Practice Vol 5 Iss 3, Fall 2011 <http://www.globaldrugpolicy.com/Issues/Vol%205%20Issue%203/Vol%205%20Issue%203%20sm.pdf>

From: John McKay [mailto:john_mckay@shaw.ca]

Sent: Friday, 23 March 2012 8:28 AM

To: 'Gary Christian'

Subject: Fw: Statement to Lancet

STATEMENT TO LANCET

Beat Enforcement Team (BET) - Vancouver Police Department 2003 - 2006

John Mc-Kay - then Officer in Charge (BET)

Downtown East Side Vancouver - Policing Rationale

The inception of what eventually became known as the Beat Enforcement Team (BET) occurred in early 2003. At that time the Vancouver Police Department recognized that the Vancouver Agreement between 3 levels of government with the so called " 4 Pillars approach" was going to have a major effect on the VPD’s ability to successfully police the Down Town East Side (DTES) of Vancouver. This was largely due to the harm reduction pillar which emphasized the value of the Supervised Injection Site which was going to be located in the heart of the DTES in the 100 block of East Hastings.

While the VPD could not at the time argue against the 4 Pillars approach – harm reductionists using statistics and opinion on European Model success – they believed that there had to be some control over the situation in the DTES because of the impact on the community once the dealers figured out that their clients were not being charged and indeed allowed to be in possession of the drugs. VPD feared that there would be a free for all and open warfare between dealers who wanted a greater share of the clientele. As well, the harm reduction philosophy might bring "drug tourists" into the area which would add to the policing problem.

Closely associated to the drug use in the DTES was the movement of stolen property into the local pawnshops of which there were 49 in the immediate area. Selling stolen property was a method of obtaining hard cash for the purpose of buying drugs.

In order to maintain some control over the potential outcomes of the new harm reduction philosophy the VPD began what was known as the Beat Enforcement Team. This unit was made up of 4 squads of police, administration staff, and a police Inspector totaling 65 personnel.

The unit consisting of 65 officers was originally named CET for Citywide Enforcement Team. The name was used because other parts of the city also wanted more beat cops so the effort in the DTES was disguised as a unit that could go anywhere to patrol, hence the name "Citywide Enforcement Team." The original concept under Inspector Doug Lepard, the OIC CET, and DCC, Bob Rich, was to have members stand on the corner and intercept drugs and stolen property. They had a high profile and there was some success with the mandate which was to disrupt the flow of stolen property etc.

The mission of BET was to interrupt the flow of stolen property and disrupt the trafficking of drugs in the area. As the officer in charge of the unit from September 2003 – September 2006 it was my role to achieve these goals.

In order to achieve these goals I spent as much time on the street as possible learning and from several good civilian contacts who had been working in the area for years I was able to glean a lot of background knowledge about the people and the issues around addiction. I implemented a combination of surveillance, undercover work, high presence uniform police and intelligence driven tactics. In a nutshell we shut down all but 7 pawnshops for failure to comply with the law on property and due to specifically targeted undercover operations we gained a lot of success in getting rid of the dealers. Many of these operations such as Operation Lucille, New Boy, became high profile media covered events.

It is my understanding that the effect of 65 police officers in the DTES is negated in the Lancet analysis produced by the harm reduction proponents. That attitude is much too convenient for them because the truth of the matter is that the police were integral to the lowered death rates by being on the street and in and out of the various Single Residence Occupancy hotels in which the addicts reside. The projects and contacts that police made in SROS and on the street with the mentally ill also helped to lower death rates because of the positive nature for the most part of the officers assigned to that beat.

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NSW & VICTORIAN INJECTING ROOMS

...definitively enriching the drug trade, failure to meet objectives



Central Issues & Compiled Evidence

1. 99% of Australians do not approve heroin use, thereby indicating they would not approve any government interventions aiding and abetting increased opiate use
2. Staggering numbers of overdoses in Australia's injecting rooms are caused by users experimenting with drug cocktails or increased opiate doses. This inevitably entails purchasing more drugs which must inevitably enrich local drug dealers
3. Research data indicates injecting rooms do not improve local amenity
4. Research data indicates injecting rooms do not reduce blood-borne virus transmissions
5. Injecting rooms uniformly have very poor referral outcomes
6. Injecting rooms have demonstrated a clear honey-pot effect, attracting dealers to the streets outside the facility, prompting expensive preventative policing operations
7. Policing operations have been mostly responsible for reductions in ambulance callouts for overdose in local areas, not injecting rooms
8. For the cost of saving 1 life in an injecting room, many users can enter rehab, saving lives



The failure of NSW and Victorian injecting rooms

According to the last 2016 National Drug Strategy Household Survey of 25,000 Australians, **99% do not approve of regular heroin use.**¹

While 55% of Australians surveyed support injecting rooms as an intervention² there has been a program of constant misinformation about injecting rooms by supporters fed to a gullible or complicit Australian media. If the same media reported the reality that injecting rooms are demonstrable accessories to the drug trade, condemnation would unquestionably be as high as the 99% disapproval rate of heroin use.

NORTH RICHMOND MSIR

Overdose rates

Overdose (OD) rate - **23.5 per 1,000 injections**³

Street OD rate - 0.2/1,000 injections (MSIC)⁴

MSIR OD rate – 102 times higher than normal street OD rates⁵

Testimony by ex-clients of the MSIC in rehab⁶ is that the overdose rates are so extraordinarily high because clients **experiment with higher doses** of drugs in the facility⁷

Experimentation with higher doses inevitably means that **more drugs are purchased from local dealers** to service the inordinate overdose rates, lining drug dealers' pockets. This conclusion is inescapable and is damning for injecting rooms

This makes the MSIR **a government-funded accessory to the North Richmond drug trade**, where extra drugs purchased created OD rates 102 times higher than normal

KINGS CROSS MSIC

Overdose rates

Highest OD rate – 14.6/1,000 injections (2010)⁸

Pre-MSIC street rate – 0.2/1,000 injections⁹

MSIC OD rate – up to 63 times higher than clients' pre-MSIC rate of OD¹⁰

Testimony by ex-clients of the MSIC in rehab is that the overdose rates are so extraordinarily high because clients **experiment with higher doses** of drugs in the facility

Experimentation with higher doses inevitably means that **more drugs are purchased from local dealers** to service the inordinate overdose rates, lining drug dealers' pockets. This conclusion is inescapable and is damning for injecting rooms

This makes the MSIC **a government-funded accessory to the Kings Cross drug trade**, where extra drugs purchased created OD rates 63 times higher than normal

NORTH RICHMOND MSIR

Public Amenity – MSIR Objectives (d) and (e)

The MSIR **failed** to improve public amenity with local residents reporting no reductions in discarded needles, and local businesses reporting increases¹¹

Public injection was reported by less residents and businesses after the MSIR opened¹², but increases in discarded needles inevitably entails more public injections. Policing crackdowns, which appear to have more so been during hours the MSIR was open, would likely have moved public injection to night-time when less people were around to see it

Reductions in Blood-Borne Virus Transmissions – MSIR Objective (f)

Failure to demonstrate that MSIR clients were less likely than other users to report using others' used injecting equipment¹⁷

Providing a gateway to drug treatment – MSIR Objective (b)

Failure to demonstrate any higher uptake of treatment services than other non-MSIR drug users

While 22%¹⁹ of MSIR clients at intake expressed a desire for referral to treatment, only 8% were in fact referred²⁰

Extensive policing to reduce honey-pot effect

Adding to the failure against objectives listed above, police complained of surging crime²⁴ around the MSIR, and residents of a honey-pot effect²⁵ where drug dealers were drawn to the streets directly outside the MSIR

The very high costs of the extensive policing added around these facilities around the time of their implementation **is a best-kept secret** concealed by injecting room evaluators/ reviewers from the media. Cost evaluations of injecting rooms worldwide never add these real and very high costs of policing to the costs of running these facilities

KINGS CROSS MSIC

Public Amenity – MSIC Objective 3

The heroin drought, which started 6 months before the MSIC opened¹³, drastically reduced discarded needles across the entirety of Australia. The MSIC's 4th Evaluation¹⁴ **failed** to demonstrate any reductions beyond those caused by the drought. The 2010 KPMG Evaluation¹⁵ made no attempt to get relevant data and failed to mention changed policing¹⁶ since 2001 which would undoubtedly affect needle counts

Reports by residents (1st Evaluation and KPMG Evaluation) of seeing less public injecting were unquestionably the result of the heroin drought and no account was taken by KPMG of changed policing since 2001

Reductions in Blood-Borne Virus Transmissions – MSIC Objective 4

Failure to demonstrate in any one of its many Evaluations any objective reductions in injection-related BBV transmissions¹⁸

Providing a gateway to drug treatment – MSIC Objective 2

Abnormally low levels of referral to treatment at only 11% of clients referred.²¹ A Scottish study of methadone users found 57%²² wanted to get clean, which would be similar to Australian heroin users. By comparison 22% of Victorian MSIR clients at intake expressed a desire for referral to treatment²³

Extensive policing to reduce honey-pot effect

The 1st MSIC Evaluation had ample data demonstrating a visible honey-pot effect²⁶ where dealers were drawn to the doors of the MSIC. Not one of the many MSIC Evaluations even mentioned the ongoing implementation of sniffer dog policing one month after the MSIC opened which aimed to move drug dealers out of the Kings Cross postcode

The very high costs of the extensive policing added around these facilities around the time of their implementation **is a best-kept secret** concealed by injecting room evaluators/ reviewers. Cost evaluations of injecting rooms worldwide never include these real and very high costs of policing to the costs of running these facilities

NORTH RICHMOND MSIR

Policing operations reduced ambulance callouts – MSIR Objective (c)

Failed to reduce ambulance callouts. On any of the streets of Melbourne, the MSIR's 112,831²⁷ opiate injections in its first 18 months would have caused just 26 overdoses, (25 non-fatal and 1 fatal) according to the MSIC's 1st Evaluation.²⁸ 19, at most, would likely be attended by an ambulance²⁹

Overdoses in the MSIR, which should have numbered no more than 26 anywhere else outside an injecting room, would reduce ambulance callouts in North Richmond by just 5%.³⁰ However the MSIR Review records the facility calling 30 ambulances to take their clients to hospital in 18 months³¹, which means **it increased**, not decreased, **ambulance callouts**

The review egregiously claimed callout reductions of 36%,³² which were clearly due to heightened police operations³³ around the MSIR

Save lives from fatal overdose – MSIR Objective (a)

On any of the streets of Australia, one heroin user will die for every 109,500 opiate injections.⁴¹ The MSIR recorded around 75,000 opiate injections per year in its first 18 months of operation, **clearly not enough to save even one life in 18 months**⁴²

For the \$6 million⁴³ spent by the MSIR to save one single life, the Victorian government could provide 73 optimally-funded residential rehab beds for a full year.⁴⁴ **The same funding can save one life (which can nevertheless be lost tomorrow injecting elsewhere) or make many users drug-free.**

The MSIR is multiplying policing expenditures with growing crime, while failing to stop overdoses by clients for the 58 in every of their 60 opiate injections they average OUTSIDE the MSIR.⁴⁵ Successfully rehabilitated users reduce the need for police expenditures and ambulance interventions as drug use is ceased altogether. Closure of the MSIR will immediately stop the mass experimentation with drugs currently happening, an experimentation which is likely to only promote more opiate-related deaths outside the facility.

KINGS CROSS MSIC

Policing operations reduced ambulance callouts

With less than 50,000 opiate injections per year³⁴ the MSIC would at best reduce overdoses in the Kings Cross community by 11 ambulance callouts per year³⁵

The MSIC's 2007 4th Evaluation claimed 80% reductions in ambulance callouts in Kings Cross against reductions of 61% throughout NSW as caused by the national heroin drought.³⁶ This was a reduction 31% better than the rest of NSW during the hours the MSIC was open. During the hours it was closed there was a 69% better reduction in callouts,³⁷ demonstrating that the **sniffer dog policing** of Kings Cross, introduced within a month of the MSIC opening, ³⁸ **was likely responsible**. NSW Parliament Hansard records that sniffer dog policing was active not only during the day, but highly active at night³⁹ into the hours shortly before dawn⁴⁰

Save lives from fatal overdose – MSIC Objective 1

On any of the streets of Australia, one heroin user will die for every 109,500 opiate injections. The MSIC averaged around 51,000 opiate injections annually over its first 9 years of operation⁴⁶, **clearly not enough to save even one life in two years of operation**

For the \$6 million spent by the MSIC to save one single life,⁴⁷ the NSW government could provide 73 optimally-funded residential rehab beds for a full year. **The same funding can save one life (which can nevertheless be lost tomorrow injecting elsewhere) or make many users drug-free.** The MSIC multiplies policing expenditures to stifle drug-related crime in Kings Cross, while failing to stop overdoses by clients for the 95% of injections they average OUTSIDE the MSIC. Successfully rehabilitated users reduce the need for police expenditures and ambulance interventions as drug use is ceased altogether. Closure of the MSIR will immediately stop the mass experimentation with drugs currently happening, an experimentation which is likely to only promote more opiate-related deaths outside the facility.

Endnotes

1. <https://www.aihw.gov.au/reports/illegal-use-of-drugs/2016-ndshs-detailed-data>

Table 9.7: Personal approval of the regular use by an adult of selected drugs, people aged 14 years or older, 2007 to 2016 (per cent)

| Drug | Persons | | | |
|---|---------|------|------|-------|
| | 2007 | 2010 | 2013 | 2016 |
| Tobacco | 14.4 | 15.3 | 14.7 | 15.7# |
| Alcohol | 45.3 | 45.1 | 45.1 | 46.0 |
| Cannabis | 6.7 | 8.1 | 9.8 | 14.5# |
| Ecstasy | 2.0 | 2.3 | 2.4 | 2.9# |
| Meth/amphetamine ^(a) | 1.2 | 1.2 | 1.4 | 1.2 |
| Cocaine/crack | 1.4 | 1.7 | 1.6 | 1.7 |
| Hallucinogens | 1.7 | 2.4 | 3.1 | 3.7# |
| Inhalants | 0.8 | 1.0 | 0.9 | 1.0 |
| Heroin | 1.0 | 1.2 | 1.2 | 1.1 |
| Pharmaceuticals ^(a) | 13.7 | 22.4 | 23.2 | 27.8# |
| Prescription pain-killers/analgesics ^(a) | n.a. | 13.0 | 12.6 | 12.7 |
| Over-the-counter pain-killers/analgesics ^(a) | n.a. | 14.3 | 14.5 | 19.1# |
| Tranquillisers, sleeping pills ^(a) | 4.1 | 6.4 | 8.2 | 9.3# |
| Steroids ^(a) | 1.7 | 2.2 | 2.2 | 2.4 |
| Methadone or buprenorphine ^(a) | 1.0 | 1.2 | 1.3 | 1.3 |

Statistically significant change between 2013 and 2016.

(a) For non-medical purposes.

Note: The list of response options changed across survey waves. Comparisons should be interpreted with caution. Source: NDSHS 2016

2. <https://www.aihw.gov.au/reports/illegal-use-of-drugs/2016-ndshs-detailed-data>

Table 9.22: Support^(a) for measures relating to injecting drug use, people aged 14 or older, by sex, 2007 to 2016 (per cent)

| Measure | Males | | | | Females | | | | Persons | | | |
|--|-------|------|------|------|---------|------|------|-------|---------|------|------|-------|
| | 2007 | 2010 | 2013 | 2016 | 2007 | 2010 | 2013 | 2016 | 2007 | 2010 | 2013 | 2016 |
| Needle and syringe programs | 63.8 | 65.2 | 64.6 | 64.8 | 70.2 | 71.8 | 69.6 | 68.9 | 67.0 | 68.5 | 67.1 | 66.9 |
| Regulated injecting rooms | 47.8 | 49.7 | 53.3 | 54.5 | 52.1 | 53.3 | 55.4 | 55.4 | 49.9 | 51.5 | 54.3 | 55.0 |
| Methadone/Buprenorphine maintenance programs | 65.0 | 66.2 | 63.6 | 65.1 | 70.5 | 72.3 | 70.5 | 70.6 | 67.7 | 69.3 | 67.0 | 67.9 |
| Treatment with drugs other than methadone | 66.2 | 67.5 | 63.7 | 65.4 | 70.9 | 71.3 | 68.4 | 68.7 | 68.5 | 69.4 | 66.0 | 67.0 |
| Trial of prescribed heroin | 32.2 | 34.6 | 35.2 | 36.5 | 33.6 | 35.0 | 32.9 | 33.6 | 32.9 | 34.8 | 34.1 | 35.1 |
| Rapid detoxification therapy | 76.7 | 75.9 | 67.2 | 67.5 | 80.9 | 80.0 | 71.7 | 71.3 | 78.8 | 77.9 | 69.4 | 69.4 |
| Use of Naltrexone, a drug that blocks the effects of heroin and other opiates/opioids | 73.5 | 75.1 | 66.4 | 65.8 | 76.0 | 75.8 | 69.5 | 66.7# | 74.7 | 75.5 | 67.9 | 66.3# |
| The availability of take-home Naloxone, a drug that reverses the effects of a Heroin/Methadone/Morphine overdose | n.a. | n.a. | n.a. | 56.1 | n.a. | n.a. | n.a. | 53.2 | n.a. | n.a. | n.a. | 54.7 |

Statistically significant change between 2013 and 2016.

(a) Support or strongly support (calculations based on those respondents who were informed enough to indicate their level of support).

Note: Question was modified in 2013. Measures taken to address problems associated with heroin use, was removed and measures taken to address problems associated with injecting drug use was reworded and new responses were added. Therefore comparisons to previous waves should not be made.

Source: NDSHS 2016

3. The MSIR [review](#) records that the facility had a total [116,802 supervised injections](#) (p x) in its first 18 months, of which [96.6%](#) (p x) were heroin injections which are subject to fatal overdose. This gives 112,831 heroin injections against 2,657 (p x) overdoses or 23.5/1,000 injections
4. Clients of the Kings Cross MSIC were considered by the 2003 [1st MSIC Evaluation](#) to be at higher risk of overdose than normal (p 62) and so the previous overdose rates of MSIC clients, as recorded when registering to use the facility, can well be used as normative for the MSIR. 44% (see p 8) of MSIC clients had overdosed before registering, with a heroin-use career spanning an average 12 years (see p 8) and a median average of three overdose episodes in the 12 years (see page 16). From this data, their average rate of overdose can be calculated. Using the MSIC Evaluation's own assumption of 'at least' three injections per day per dependent heroin user (see p 58), and keeping in mind that, for example, [8 injections per day](#) for heroin users is not extraordinary, we can calculate the number of injections per user per year (3 x 365 = 1,095 injections per year), then calculate one non-fatal overdose every 4 years giving a rate of 1/4,380 injections (4 x 1,095 injections) or 0.23/1,000. The real rate would be quite a deal lower given that 3 injections per day is a low estimate, and this is the rate for only 44% high risk clients in the MSIC, where the other 56% have no overdoses but many injections
5. Their staggering overdose rate of 23.5/1,000 injections can be divided by the normative rate of overdose (see

footnote 4) of 0.23/1,000 giving the result of 102 times higher than normal

6. See Hansard record of speeches by NSW MLC Gordon Moyes [file:///C:/Users/gxian/Documents/Drugs/Interventions/Injecting%20Room/ADRAAnalysis/Lobbying/Full%20Day%20Hansard%20Transcript%20\(Legislative%20Council,%2026%20June%202007,%20Proof%20-%20NSW%20Parliament.htm](file:///C:/Users/gxian/Documents/Drugs/Interventions/Injecting%20Room/ADRAAnalysis/Lobbying/Full%20Day%20Hansard%20Transcript%20(Legislative%20Council,%2026%20June%202007,%20Proof%20-%20NSW%20Parliament.htm) and by NSW Andrew Fraser MP [https://web.archive.org/web/20121102211713/https://www.parliament.nsw.gov.au/Prod/parliament/hanstrans.nsf/V3ByKey/LA20101021/\\$File/541LA217.pdf](https://web.archive.org/web/20121102211713/https://www.parliament.nsw.gov.au/Prod/parliament/hanstrans.nsf/V3ByKey/LA20101021/$File/541LA217.pdf) recording the observations of MSIC ex-clients on why the overdose rate is so imaginably high.
7. The [1st MSIC Evaluation](#) (see p 62) noted that "In this study of the Sydney MSIC there were 9.2 heroin overdoses per 1000 heroin injections in the MSIC, and this rate of overdose is likely to be higher than among heroin injectors generally. The MSIC clients seem to have been a high-risk group with a higher rate of heroin injections than heroin injectors who did not use the MSIC, they were often injecting on the streets, and they may have taken more risks and used more heroin in the MSIC." The evaluators never bothered to measure this inordinately high rate of overdose against MSIC clients' own histories of overdose or rates of overdose derived therefrom. The rates were high because of unchecked MSIC client experimentation with more drugs and drug cocktails – see speech by NSW Upper House MLC Gordon Moyes [file:///C:/Users/gxian/Documents/Drugs/Interventions/Injecting%20Room/ADRAAnalysis/Lobbying/Full%20Day%20Hansard%20Transcript%20\(Legislative%20Council,%2026%20June%202007,%20Proof%20-%20NSW%20Parliament.htm](file:///C:/Users/gxian/Documents/Drugs/Interventions/Injecting%20Room/ADRAAnalysis/Lobbying/Full%20Day%20Hansard%20Transcript%20(Legislative%20Council,%2026%20June%202007,%20Proof%20-%20NSW%20Parliament.htm) and by Andrew Fraser MP [https://web.archive.org/web/20121102211713/https://www.parliament.nsw.gov.au/Prod/parliament/hanstrans.nsf/V3ByKey/LA20101021/\\$File/541LA217.pdf](https://web.archive.org/web/20121102211713/https://www.parliament.nsw.gov.au/Prod/parliament/hanstrans.nsf/V3ByKey/LA20101021/$File/541LA217.pdf)
8. See 2010 MSIC Evaluation by [KPMG](#) (p 154) for the overdose rates per year up to 2010
9. See endnote 4 above
10. The MSIC overdose rate of 14.6/1,000 injections can be divided by the normative rate of overdose (see footnote 4) of 0.23/1,000 giving the result of 63 times higher than normal.
11. p 76 of the MSIR [review](#) states that "Local people record no difference in seeing discarded injecting equipment" Also, "There was an increase in the median number of discarded syringes seen by business respondents during the trial (six to 10 per month)" (p 76)
12. DFA notes that [the review's](#) cited (small) reductions in reported sightings of public injecting (p xx) are clearly countered by increases in publicly discarded injecting equipment (p xx) which inevitably indicates INCREASED public injecting. Policing crackdowns during [daytime](#) obviously increased night-time injecting, when public injecting is less likely to be observed by local residents or businesses. This increase in public injecting is witnessed by the increases in ambulance callouts at night (p 71)
13. The heroin drought commenced December 2000 https://www.researchgate.net/publication/237404353_The_Australian_Heroin_Drought_and_its_Implications_for_Drug_Policy and the MSIC opened May 6, 2001. Australia has never recovered from the heroin drought
14. <https://kirby.unsw.edu.au/report/sydney-medically-supervised-injecting-centre-msic-evaluation-report-4> see page 32ff
15. <https://www.health.nsw.gov.au/aod/resources/Documents/msic-kpmg.pdf> see p xi
16. Sniffer dog policing commenced 1 month after the MSIC opened (see speech by Clover Moore <https://www.parliament.nsw.gov.au/Hansard/Pages/HansardResult.aspx#/docid/HANSARD-1323879322-25542/link/111>) in the Kings Cross postcode and very successfully <https://www.zdnet.com/article/sniffer-dog-avoidance-a-wireless-app-with-bite/> moved dealers out of the postcode into neighbouring postcodes, particularly next-door Darlinghurst
17. MSIR [review](#) (p 100) states that "There is not a significant difference between MSIR service users and other people who inject drugs in reporting that they had injected with someone's used needle/syringe in the previous month."
18. 2010 MSIC Evaluation by [KPMG](#) (p 4) records that ". . . it is not possible however to attribute any change in infection notifications to the operation of the MSIC" –DFA notes that the KPMG Evaluation, in assessing evidence regarding blood-borne virus transmissions, made no mention of the obvious heroin drought which was responsible for less needles being distributed by pharmacies and needle & syringe programs, and which remained active in 2010 and beyond. Nor did they make any mention of sniffer dog policing driving dealers, drug purchases and their associated overdoses to other areas of Sydney


19. MSIR [review](#) p 50
20. MSIR [review](#) p 55
21. See p 17 https://drugfree.org.au/images/pdf-files/library/Injecting_Rooms/DFA_Analysis_Injecting_Room_2010.pdf
22. <https://www.tandfonline.com/doi/abs/10.1080/09687630600871987>
23. MSIR [review](#) p 50
24. <https://tpav.org.au/news/journals/2019-journals/june/safe-injecting-rooms>
25. <https://www.heraldsun.com.au/news/victoria/police-target-drug-traffickers-and-crime-in-richmond-during-operationapollo/news-story/c7b10e05340619b9282588ca81889bd9>
26. 2003 [1st MSIC Evaluation](#) p 146ff
27. See endnote 3
28. The 2003 [1st MSIC Evaluation](#) (p58) cited the Darke et al. study which found that there 1 fatal overdose in every 24 overdoses, the remainder being non-fatal overdoses. On this data we can calculate the number of injections per overdose, given that there is solid Australian [data](#) indicating that [one in every 100](#) dependent heroin users die each year from a fatal opiate overdose. If dependent heroin users are injecting 'at least' 3 times a day, as calculated by the 1st MSIC Evaluation (p58), there is one death for every 109,500 injections (3 injections per user per day x 365 days in a year x 100 users for which one injection will be fatal). There will be 24 overdoses per 109,500 injections, giving a rate of 1/4,563 injections, very similar to the previous overdose rates recorded by MSIC clients when registering to use the MSIC. Using the MSIC clients previous overdose rate of 1/3,480 injections we find that the 112,831 opiate injections in the MSIR SHOULD have only caused 26 overdoses, of which one would be fatal
29. Again we are being extremely generous – the Darke et al. study mentioned in endnote 28 found that an ambulance attended only 51% of their examined overdoses. We have more generously calculated according to the registration data of Kings Cross MSIC clients which had 74% of previous overdoses attended by an ambulance. Thus 19 of the 26 expected overdoses from 112,831 injections in the MSIR would have likely caused an ambulance callout. If we had calculated on Darke et al.'s 51% it would have been just 13 callouts that would be foregone by the presence of the MSIR
30. In the 18 months before the MSIR there were 382 ambulance callouts within a 1 km radius. If the (generous) 19 callouts are deducted, we would normally have expected the MSIR to reduce that number to 363 (388 minus 19 callouts), which is a 5% reduction
31. MSIR [review](#) p xi
32. MSIR [review](#) p 69
33. <https://www.heraldsun.com.au/news/victoria/police-target-drug-traffickers-and-crime-in-richmond-during-operationapollo/news-story/c7b10e05340619b9282588ca81889bd9>
34. The KPMG Evaluation recorded 604,022 injections (p ix) in 9 years, of which a maximum 76.5% (p 107) were opiate injections, averaging 51,275 opiate injections per year
35. With the 446,976 opiate injections over 9 years (see previous endnote) expected to produce an overdose for every 4,380 injections, (see endnote 4) the number of expected overdoses would be 102, or 11 per year over 9 years.
36. See the 2007 [4th MSIC Evaluation](#) p 24ff
37. In the Salmon et al. 2010 [study](#) on ambulance callouts, which replicated data from MSIC [Evaluation 4](#) compare data on daytime callouts versus callouts outside MSIC operating hours (p 680)
38. NSW Parliament Hansard, "Police Sniffer Dogs" 23 October 2001 <https://www.parliament.nsw.gov.au/Hansard/Pages/HansardResult.aspx#docid/HANSARD-1323879322-25542/link/11>
39. <http://www.mapinc.org/drugnews/v01/n1987/a09.html?4817>
40. See speech by Mrs A Megarrry <https://www.parliament.nsw.gov.au/Hansard/Pages/HansardResult.aspx#docid/HANSARD-1323879322-25542/link/11>
41. See endnote 4
42. The MSIR review recorded 112,831 heroin injections during the first 18 months (see endnote 3), averaging 75,221 injections for the first 12 months (it was actually less than that due to a slow startup for the MSIR). The MSIR needed 109,500 injections to claim one life saved, and 75,000 injections does not even come close
43. https://www.parliament.vic.gov.au/images/stories/committees/lrrcsc/Drugs_Final_Victorian_Government_Response_to_the_Parliamentary_Inquiry_into_Drug_Law_Reform_X1wNyVpZ.pdf records funding of \$4 million per year which gives \$6 million in 18 months
44. In August 2018 the NSW Legislative Council's Portfolio Committee No.2 (Health and Community Services) Report 49 recommended "That the NSW Government significantly increase funding to drug and alcohol related health services" (Recommendation 2). The NADA submission https://www.nada.org.au/wp-content/uploads/2019/03/NADA-Submission-NSW-AOD-Beds_120319.pdf recommended \$224.95 of funding per bed day for residential rehabs, which equals \$82,106 per annum or 73 bed years for the \$6 million to save one life in an injecting room. If patients are offered 6 months of rehab each over 140 users will have been assisted towards being drug-free, freeing them from the morbidity of non-fatal overdoses and freeing the community of crime and public nuisance
45. The MSIR review (p ix) indicates MSIR clients average 14 opiate injections per week which is 728 per year, or 60 per month on average. There were 112,831 heroin injections in 18 months recorded by the MSIR by the 3,936 clients, giving an average of 29 injections per client in 18 months or 19 per year, averaging a little over 1.5 injections per month. 58 of clients' average 60 injections per month were not in the MSIR.
46. The 2010 [KPMG](#) Evaluation recorded a total of 604,022 injections (p ix) in the 9 years evaluated, of which 76.5% were opiate injections (p 108). This gives 461,473 opiate injections, averaging 51,275 opiate injections annually.
47. In 2007 the MSIC cost \$2.7 million to operate according to the 2007 [4th Evaluation](#) (p35). With current operating costs unable to be identified from MSIC records or State budgets, \$3 million per year in 2020 is a very conservative estimate

The logo consists of a white, rounded, teardrop-shaped background. Inside this shape, the words "DRUG FREE AUSTRALIA" are written in a bold, dark blue, sans-serif font. "DRUG" and "FREE" are stacked vertically, and "AUSTRALIA" is positioned below them.

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Development and Guiding Principles of the Icelandic Model for Preventing Adolescent Substance Use

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Adolescent substance use—the consumption of alcohol, tobacco, and other harmful drugs—remains a persistent global problem and has presented ongoing challenges for public health authorities and society. In response to the high rates of adolescent substance use during the 1990s, Iceland has pioneered in the development of the Icelandic Model for Primary Prevention of Substance Use—a theory-based approach that has demonstrated effectiveness in reducing substance use in Iceland over the past 20 years. In an effort to document our approach and inform potentially replicable practice-based processes for implementation in other country settings, we outline in a two-part series of articles the background and theory, guiding principles of the approach, and the core steps used in the successful implementation of the model. In this article, we describe the background context, theoretical orientation, and development of the approach and briefly review published evaluation findings. In addition, we present the five guiding principles that underlie the Icelandic Prevention Model’s approach to adolescent substance use prevention and discuss the accumulated evidence that supports effectiveness of the model. In a subsequent Part 2 article, we will identify and describe key processes and the 10 core steps of effective practice-based implementation of the model.

Keywords: *adolescence; Icelandic model; implementation; practice-based evidence; prevention; substance use*

► INTRODUCTION

Preventing alcohol, tobacco, and other harmful drug use among youth remains an ongoing challenge, especially in many advanced economies of the world. From a public health perspective, the most sensible approach to prevention is to avert or delay the onset of alcohol, tobacco, and other drug use as long as possible. Early drug use impairs psychosocial and neurocognitive development and increases youth vulnerability to later use of licit and illicit substances, academic failure, high-risk sexual behavior, and mental health problems (Atherton, Conger, Ferrer, & Robins, 2016; Windle & Zucker, 2010), and is strongly predictive of later dependence (Kendler, Myers, Damaj, & Chen, 2013; Moss, Chen,

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& Yi, 2014). Nonetheless, despite the need for effective primary prevention, most programs and approaches fail to show long-term impact and societal benefits (Hopfer et al., 2010; Kumpfer, Smith, & Summerhays, 2008).

Although there are examples of prevention approaches that have demonstrated success, such as the Strategic Prevention Framework developed by Substance Abuse and Mental Health Services Administration (Anderson-Carpenter, Watson-Thompson, Chaney, & Jones, 2016) and Communities That Care (Hawkins et al., 2008), a separate noteworthy success story in primary prevention of substance use comes from Iceland. This article is the first of a two-part series that describes the theory- and practice-based processes associated with the successful implementation of the Icelandic Model for Primary Prevention of Substance Use. Here we discuss the development of the Icelandic Prevention Model (IPM), present a brief theoretical overview, and summarize the accumulated evidence of effectiveness of the approach in reducing rates of adolescent substance use in Iceland. This is followed by an introduction to the five guiding principles underlying the model. We conclude by placing the model and the evidence in support of its effectiveness in context within the wider literature of the field.

► MODEL DEVELOPMENT AND EVIDENCE OF EFFECTIVENESS

Context

In the 1990s, Iceland ranked comparatively high on adolescent alcohol, tobacco, and other harmful drug use as evidenced by results from the European School Project on Alcohol and Drugs (ESPAD)—a comparative study of 35 European countries conducted every 3 to 4 years (ESPAD Group, 2016). To illustrate, in 1999, the rate of ever smoking tobacco among 10th-grade youth in Iceland was 56% and 69% on average in Europe; the rate of drunkenness in the past 12 months was 56% in Iceland and 52% in Europe; and 15% had reported use of cannabis substances (hashish, marijuana) in Iceland, similar to other parts of Europe. For many years leading up to this point Iceland had been utilizing traditional methods of primary substance use prevention, namely, individual, school-based instructional and educational programs, with the aim of educating or leading youth away from initiating substance use (Palsdottir, 2003; Sigfusdottir, Thorlindsson, Kristjansson, Roe, & Allegrante, 2009). In response to the alarming rates of adolescent substance use in the mid-1990s and with sponsored funding from the government of Iceland and the Reykjavik City Council, a group of policy makers

and administrative leaders, elected officials, and social scientists came together to explore new ideas for initiating a different, bottom-up collaborative approach to substance use prevention that has since become known as the Icelandic Prevention Model (Sigfusdottir et al., 2009; Sigfusdottir, Kristjansson, Gudmundsdottir, & Allegrante, 2011).

Model Development

Since its formulation, the IPM has been grounded in classic theories of social deviance that were developed in sociology and criminology (Akers, 1977; Hirchi, 1969; Merton, 1938), rather than based in traditional health behavior change theories (Glanz, Rimer, & Viswanath, 2015). The mutual viewpoint of these deviance theories is that most individuals are capable of deviant acts but that only under certain environmental and social circumstances will those acts become common patterns of behaviors among dominant groups of adolescents. Major reasons for such behavioral patterns thus include (a) lack of environmental sanctions by the social environment (e.g., from parents and other adults), (b) low individual and/or community investment in traditional and positive values (e.g., high educational aspirations), and (c) lack of opportunities for participation in positive and prosocial development (e.g., organized recreational and extracurricular activities such as sports, music, drama, after school clubs, etc.). Thus, from this theoretical perspective, children are viewed as social products and not as rational individual actors, and hence alcohol, tobacco, and other drug use is viewed as attributes of the social environment (Sigfusdottir et al., 2009) and engrained in both risk and protective factors that comprise key determinants of the ongoing cycle of substance use.

Echoed by this theoretical view, the goal of the approach from the outset was to “mobilize society as a whole in the struggle against drugs” (Palsdottir, 2003), with emphasis on community engagement and collaboration leading to long-standing and gradual environmental and social change rather than short-term solutions. Rooted in research evidence from the social and behavioral sciences, the preventive cornerstone of the approach was to strengthen protective factors and mitigate risk factors at the local community level within each of the domains of parents and family, the peer group, the school environment, and leisure time outside of school (Nash, McQueen, & Bray, 2005; Scholte, Poelen, Willemsen, Boomsma, & Engels, 2008; Watkins, Howard-Barr, Moore, & Werch, 2006), all of which are potential domains of ongoing practice-based assessment and intervention (see Figure 1). The 10 core

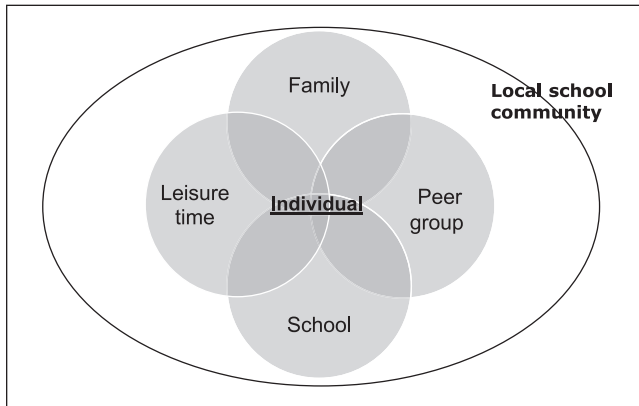


FIGURE 1 Domains of Community Risk and Protective Factors in the Icelandic Prevention Model

steps to this effective intervention process are outlined in the related second article within this issue of *Health Promotion Practice*.

Evaluation and Evidence of Effectiveness

Since the original development of the model, Iceland has led the decline in substance use in all of Europe. In 2015, the rate of ever smoking tobacco was 46% among 10th-grade adolescents in Europe but had plunged to 16% in Iceland; average rates of current alcohol use were 48% in Europe but 9% in Iceland; and average rates of lifetime use of cannabis substances remained at 16% in Europe, similar to 1999, but declined to 5% in Iceland (see Figure 2 for standard trend measures from the Youth in Iceland studies). In all instances, the 2015 rates in Iceland represented either the lowest or the second lowest of all 35 countries that participated in the ESPAD study that year (ESPAD Group, 2016). Corresponding to these changes in substance use, Iceland had also witnessed large reductions in risk factors and strengthening of protective factors. For example, 10th-grade students reporting parents knowing with whom they spend time in the evenings increased from ~50% in 2000 to just over 74% in 2016. Even more dramatic, while 80% of 10th-grade students reported having been “outside after midnight” once or more during the 7 days prior to the annual survey in 2000, this ratio had declined to approximately 31% in 2016. During the same time, participation in organized sports with a club or team four times per week or more often had increased from 26% in 2000 to approximately 37% in 2016 (Kristjansson et al., 2016). Using a quasi-experimental, group-based design, we conducted an evaluation to assess central elements of the IPM (Kristjansson,

James, Allegrante, Sigfusdottir, & Helgason, 2010). Municipalities that had consistently been a part of the model since 1997 formed the intervention group and were compared to those that had consistently been outside of the formal model. It should be noted that given the geographical isolation and small population of the country, potentially contaminating spillover effects from the model to outside areas could be expected. However, despite these challenges, the evaluation demonstrated a significant difference in group trends over time in smoking and alcohol use, parental monitoring, party lifestyle, and participation in organized sports, with the treatment group being favored in all instances.

Since the mid-1990s, much has changed in the adolescent environment in Iceland that has been influenced by widespread implementation of the model. Some of those changes are holistic and onetime alterations, while several notable others are ongoing and continuous. First, municipalities and schools that include over 80% of the country’s population now routinely utilize annually updated survey data to monitor trends and potential changes in substance use and risk and protective factors among youth and use this information to organize responses and set strategies for the year ahead. Second, most municipalities and many schools now employ designated personnel with dedicated time to engage in primary prevention activities. In addition, government-funded community nongovernmental organizations have been set up to strengthen and improve the collaborative aspect of parenting at the local school-community level. Finally, municipalities have as a matter of policy increased funding dramatically for recreational and extracurricular activities for children and adolescents, making such activities available to all through a user-friendly voucher system.

► **FIVE GUIDING PRINCIPLES**

The IPM is built on a foundation of five guiding principles (see Table 1). Each principle can be thought of as a unique dimension of an overall approach that provides direction for how each step in the community intervention process ideally should be implemented (see Kristjansson et al., 2019). Although different steps in the process may emphasize a given guiding principle more or less heavily, every step of the model should include each of these principles. When choosing among competing strategies, the guiding principles can be consulted as a means of identifying the strategy most in keeping with the intended design of the IPM and local needs. Below, is a brief summary of each of these principles and associated dimensions.

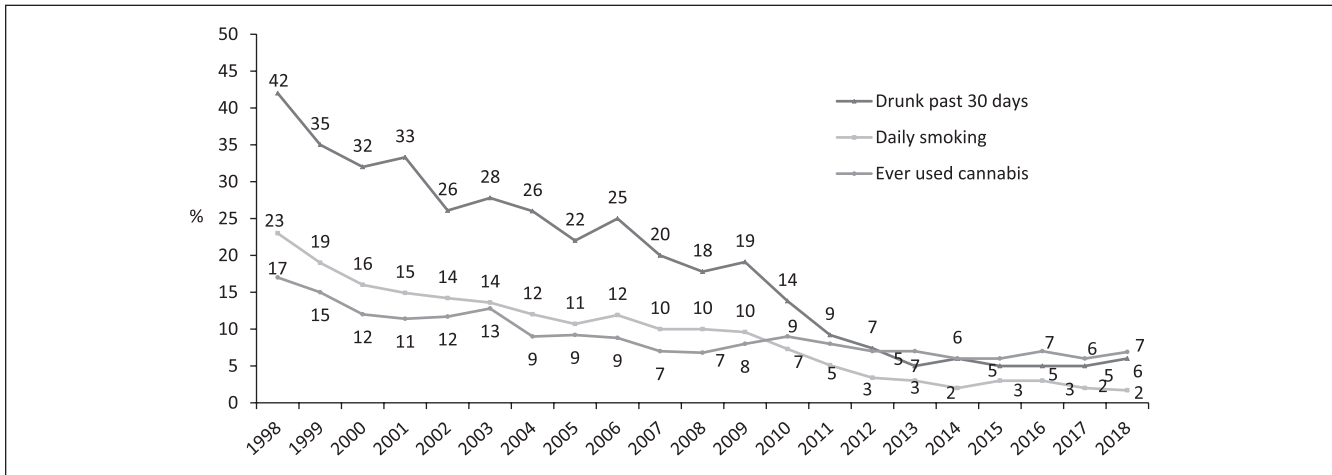


FIGURE 2 Annual Percentage of Self-Reported Substance Use Among Icelandic Adolescents, 1998-2018
SOURCE: Kristjansson et al. (2016).

TABLE 1
The Five Guiding Principles of the Icelandic Prevention Model

| | |
|---------------------|---|
| Guiding Principle 1 | Apply a primary prevention approach that is designed to enhance the social environment. |
| Guiding Principle 2 | Emphasize community action and embrace public schools as the natural hub of neighborhood/area efforts to support child and adolescent health, learning, and life success. |
| Guiding Principle 3 | Engage and empower community members to make practical decisions using local, high-quality, accessible data and diagnostics. |
| Guiding Principle 4 | Integrate researchers, policy makers, practitioners, and community members into a unified team dedicated to solving complex, real-world problems. |
| Guiding Principle 5 | Match the scope of the solution to the scope of the problem, including emphasizing long-term intervention and efforts to marshal adequate community resources. |

Guiding Principle 1: Apply a Primary Prevention Approach That Is Designed to Enhance the Social Environment

The model focuses on preventing the initiation of substance use by altering the social environment in a manner that reduces the likelihood that young people will initiate substance use. This approach therefore addresses the underlying causes of substance use initiation. By working to increase social and environmental protective factors associated with preventing or delaying substance use and decreasing corresponding risk factors, the model prevents substance use by intervening on society itself and across a broad spectrum of opportunities for community intervention. This “society is the patient” approach (Myers, 2008) prioritizes thoughtfully and intentionally altering the social, organizational, and cultural characteristics of communities as the primary means of inoculating young people against substance

use. Within this principle, accessing and/or hiring appropriate personnel to guide local team-building and bridging the use of research evidence to practical implementation will be central.

Guiding Principle 2: Emphasize Community Action and Embrace Public Schools as the Natural Hub of Neighborhood/Area Efforts to Support Child and Adolescent Health, Learning, and Life Success

The model’s primary unit of intervention is the neighborhood, which is defined as the service area assigned to a local school. The model uses an ecological approach that addresses family, school, peer, and community social influences and other opportunities within each neighborhood. Although schools are not primarily responsible for strengthening the neighborhoods and areas they serve, they do represent an essential hub for local activities designed to support the

health, well-being, and success of children and adolescents. As a result, strengthening connections between families, schools, and the community-at-large, and unifying those groups into a cohesive team devoted to preventing substance use, represents a core strategy of the IPM. Securing the collaboration and commitment of schools for the collection of data to routinely monitor trends in both substance use and risk and protective factors is therefore essential.

Guiding Principle 3: Engage and Empower Community Members to Make Practical Decisions Using Local, High-Quality, Accessible Data and Diagnostics

Local community members make all model-driven decisions based on hard data and neighborhood and school-specific diagnostics. The model thus relies on local data to (a) capture, focus, and sustain community attention on local factors essential to preventing substance use (b) guide the selection of strategies and the development of community capacity necessary to address the complex problem of substance use.

To accomplish this, the model uses data that are local, high-quality, and made accessible through quick and efficient processing and dissemination. Local data amplify community interest in what is happening with the young people living in local areas and neighborhoods, as well as motivating community action to address local problems. High-quality data strengthen opportunities to accurately describe, diagnose, and inform community decision making. Accessible and current data promote meaningful participation from the whole community by presenting information in a clear manner that is easily understood by most community members. Using local, high-quality, and accessible data allows a local prevention team to accurately describe how community characteristics relate to substance use in each specific neighborhood or school, to identify possible priorities for intervention, and to support well-informed community members as they use hard data to choose strategies most likely to be successful in their individual communities. Collaborating with community-based researchers and supporting them to collect, process, and disseminate regular data is essential to this principle.

Guiding Principle 4: Integrate Researchers, Policy Makers, Practitioners, and Community Members Into a Unified Team Dedicated to Solving Complex, Real-World Problems

In many public and community health interventions, the connections between researchers, policy

makers, practitioners, and community members are more theoretical than functional and practical. Although they may share the same goal, each group tends to function in isolation from the others and at varying proximities from the problem itself. The IPM takes a team-science-to-practice approach to prevention that integrates researchers, policy makers, practitioners, and community members into a team that works to solve real-world problems in specific areas or neighborhoods over long periods of time. Thus, each group maintains close proximity to each other and the problem itself. While working together to implement each of the 10 Core Steps of the Icelandic Prevention Model (see Kristjansson et al., 2019), each group not only offers unique skills and experiences necessary for solving local problems related to substance use but also does so in a manner that seeks to both influence and be influenced by other team members. For example, using this approach, researchers are open to ideas from policy makers, practitioners, and community members and often rely on their practice-based insights to guide future directions in data collection and interpretation of existing data. Conversely, policy makers, practitioners, and community members come to rely on researchers when collecting data, making data-driven decisions, and evaluating community progress. By establishing this kind of functional team dynamic, the model aligns the expertise and efforts of researchers, policy makers, practitioners, and community members to maximize the practical, real-world impact of their collective capacity. Clarifying and maintaining the importance of collaboration is the crux of this principle.

Guiding Principle 5: Match the Scope of the Solution to the Scope of the Problem, Including Emphasizing Long-Term Intervention and Efforts to Marshal Adequate Community Resources

The model recognizes that the social conditions that promote substance use among young people emerge from multiple, complex sources over time. For example, previously established social norms related to substance use; community economic conditions; the prevalence of depression, anxiety, and addiction among adults; and a lack of interesting and accessible structured leisure time opportunities may all contribute to a rise in the rates of substance use and abuse among adolescents. The rise of any one of these contributing factors is complex and usually occurs over long periods of time. Therefore, solutions designed to counteract, mitigate, or eliminate these social conditions must account for the scope and magnitude of those initial problems. Problems that take 10 years to develop are seldom solved in 10 weeks or

even 10 months. More often, decade-long social problems may take years to address and require long-term vision and planning, sustained attention and commitment, adherence to an iterative and repetitive approach, and long-cycle or permanently committed financial resources. Since the model is based on an ongoing effort to alter society in a manner that protects young people from substance abuse, it must also prioritize creating the community capacity and long-term commitments necessary to achieve this goal. Understanding and appreciating that primary prevention as seen through the lens of the IPM is a long-term strategy will be necessary to live up to this guiding principle.

► DISCUSSION

The IPM in many ways mirrors what Livingood et al. (2011) have called for and labelled as an applied “toolkit approach” to health promotion. Rather than relying on universal and prescriptive interventions, the toolkit approach assumes that communities vary greatly in strengths, opportunities, and resources. For health promotion practice this means that although the influence of specific risk and protective factors operates similarly across individuals (Hemphill et al., 2011), their prevalence and significance differ at the school-community level (Hawkins, Van Horn, & Arthur, 2004). This is particularly important for primary substance use prevention because it underscores the appropriateness of community-wide diagnosis of risk and protective factors, and the local tailoring of intervention activities (Livingood et al., 2011).

Instead of attributing the risks of substance use initiation among children and adolescents to individual choices, the IPM is designed to maximize the odds of healthy individual choices as default and therefore for greater population impact than typically achieved through efforts limited to individual-level programs. This aligns with the premises of the Centers for Disease Control and Prevention Health Impact Pyramid (Frieden, 2010)—the five-layer pyramid that represents a spectrum of changes from population-level socioeconomic factors at the base of the pyramid, to the individual-level counseling and education at the apex of the pyramid—and assumes an inverse relationship between the increased individual effort needed at the top and the potential population impact at the bottom. Above changes in socioeconomic factors, the fourth layer in the pyramid concerns itself with “Changing the Context to Make Individuals’ Default Choices Healthy.” In the context of the Health Impact Pyramid, this is precisely the position and focus of the IPM. However, changing community norms and culture takes time, and time is

commonly a scarce resource to planners, funders, and elected officials who seek immediate answers or solutions to community problems. Thus, mutual agreement and understanding among stakeholders that the IPM is a long-term approach is essential for success.

In reviewing the five guiding principles of the IPM, it becomes apparent that individual elements of the model are not new. The key difference between the IPM and other prevention approaches concerns its processes and reliance on collaboration between representatives from sectors that usually do not interact or engage much with one another: researchers, policy makers, practitioners, and community stakeholders. At the local level, everyone is needed at the table to work in dialogue under the realization that each of these entities represents an important function in the system, and therefore each is also limited in their scope and strengths. Thus, a central theme in the approach is community engagement and collaboration to foster an environment that is resistant to substance use, assuming that the risk of substance use initiation among children and adolescents grows out of the social environment (Akers, Krohn, Lanza-Kaduce, & Radoceovich, 1979; Hirci, 1969; Merton, 1938; Sigfusdottir et al., 2009). Thus, instead of facilitating behavior change at the individual level through educational and/or instructional programs, as is more common in traditional prevention work, the IPM assumes that changing the environment will generate less risk-prone individuals in the long term. It is therefore not a top-down program but a bottom-up community-building collaborative approach that is organized for long-term action, change, and maintenance of change.

In conclusion, the IPM has been in development and practice-based refinement for 20 years (Palsdottir, 2003; Sigfusdottir et al., 2009) and has demonstrated strong evidence of effectiveness in reducing substance use among Icelandic adolescents. Since the initiation of the *Youth in Europe* project in 2006 (Kristjansson, Sigfusson, Sigfusdottir, & Allegrante, 2013; Sigfusdottir, Kristjansson, & Agnew, 2012), the approach has been disseminated and scaled—in part or in whole—in several other countries, cities, and municipalities (Kristjansson et al., 2013; Kristjansson et al., 2017). During this time, we have learned which challenges most commonly impede full implementation and subsequent results. These challenges include inadequate organization and poor coalition building at the local level, limited funding and personnel with protected time to devote to primary prevention, low levels of political and administrative support and/or distrust in research, poor data collection preparation with schools and/or confusion about individual roles, low participation in community meetings and failure to garner wide community support and engagement, extended time between data collection and

report dissemination, confusion about data ownership and rights to distribution, limited interest in community engagement beyond informational meetings, lack of organizational and community-based strategies to identify and work on selected priorities, limited availability for structured leisure time activities and low commitment to improve/add opportunities, and insufficient time allowed to facilitate long-term changes. Part 2 in this series will examine these challenges and the respective steps we have found necessary to take in overcoming them when implementing primary prevention of adolescent substance use.

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REFERENCES

- Akers, R. L. (1977). *Deviant behavior: A social learning approach* (2 ed.). Belmont, CA: Wadsworth.
- Akers, R. L., Krohn, M. D., Lanza-Kaduce, L., & Radoceovich, M. (1979). Social learning and deviant behavior: A specific test of a general theory. *American Sociological Review*, *44*, 636-655.
- Anderson-Carpenter, K. D., Watson-Thompson, J., Chaney, L., & Jones, M. (2016). Reducing binge drinking in adolescents through implementation of the Strategic Prevention Framework. *American Journal of Community Psychology*, *57*(1-2), 36-46.
- Atherton, O. E., Conger, R. D., Ferrer, E., & Robins, R. W. (2016). Risk and protective factors for early substance use initiation: A longitudinal study of Mexican-origin youth. *Journal of Research on Adolescence*, *26*, 864-879. doi:10.1111/jora.12235
- European School Project on Alcohol and Drugs Group. (2016). ESPAD report 2015: *Results from the European School Survey Project on Alcohol and Other Drugs*. Retrieved from Luxembourg Publications Office of the European Union website: <http://espad.org/sites/espad.org/files/TD0116475ENN.pdf>
- Frieden, T. R. (2010). A framework for public health action: The Health Impact Pyramid. *American Journal of Public Health*, *100*, 590-595. doi:10.2105/ajph.2009.185652
- Glanz, K., Rimer, B. K., & Viswanath, K. (2015). *Health behavior: Theory, research and practice* (5th ed.). San Francisco, CA: Jossey-Bass.
- Hawkins, J. D., Catalano, R. F., Arthur, M. W., Egan, E., Brown, E. C., Abbott, R. D., & Murray, D. M. (2008). Testing communities that care: The rationale, design and behavioral baseline equivalence of the Community Youth Development Study. *Prevention Science*, *9*, 178-190.
- Hawkins, J. D., Van Horn, M. L., & Arthur, M. W. (2004). Community variation in risk and protective factors and substance use outcomes. *Prevention Science*, *5*, 213-220. doi:10.1023/b:prev.0000045355.53137.45
- Hemphill, S. A., Heerde, J. A., Herrenkohl, T. I., Patton, G. C., Toumbourou, J. W., & Catalano, R. F. (2011). Risk and protective factors for adolescent substance use in Washington State, the United States and Victoria, Australia: A longitudinal study. *Journal of Adolescent Health*, *49*, 312-320. doi:10.1016/j.jadohealth.2010.12.017
- Hirchi, T. (1969). *Causes of delinquency*. Los Angeles: University of California Press.
- Hopfer, S., Davis, D., Kam, J. A., Shin, Y., Elek, E., & Hecht, M. L. (2010). A review of elementary school-based substance use prevention programs: Identifying program attributes. *Journal of Drug Education*, *40*, 11-36. doi:10.2190/DE.40.1.b
- Kendler, K. S., Myers, J., Damaj, M. I., & Chen, X. G. (2013). Early smoking onset and risk for subsequent nicotine dependence: A monozygotic co-twin control study. *American Journal of Psychiatry*, *170*, 408-413. doi:10.1176/appi.ajp.2012.12030321
- Kristjansson, A. L., James, J. E., Allegrante, J. P., Sigfusdottir, I. D., & Helgason, A. R. (2010). Adolescent substance use, parental monitoring, and leisure-time activities: 12-year outcomes of primary prevention in Iceland. *Preventive Medicine*, *51*, 168-171. doi:10.1016/j.ypmed.2010.05.001
- Kristjansson, A. L., Mann, M. J., Sigfusson, J., Sarbu, E. A., Grubliauskiene, J., Daily, S. M., & Sigfusdottir, I. D. (2017). Prevalence of e-cigarette use among adolescents in 13 Eastern European towns and cities. *Public Health*, *147*, 66-68. doi:10.1016/j.puhe.2017.02.005
- Kristjansson, A. L., Mann, M. J., Sigfusson, J., Thorisdottir, I. E., Allegrante, J. E., & Sigfusdottir, I. D. (2019). Implementing the Icelandic model for preventing adolescent substance use. *Health Promotion Practice*. Advance online publication. doi:10.1177/1524839919849033
- Kristjansson, A. L., Sigfusdottir, I. D., Thorlindsson, T., Mann, M. J., Sigfusson, J., & Allegrante, J. P. (2016). Population trends in smoking, alcohol use and primary prevention variables among adolescents in Iceland, 1997-2014. *Addiction*, *111*, 645-652. doi:10.1111/add.13248
- Kristjansson, A. L., Sigfusson, J., Sigfusdottir, I. D., & Allegrante, J. P. (2013). Data collection procedures for school-based surveys among adolescents: The Youth in Europe Study. *Journal of School Health*, *83*, 662-667. doi:10.1111/josh.12079
- Kumpfer, K. L., Smith, P., & Summerhays, J. F. (2008). A wakeup call to the prevention field: Are prevention programs for substance use effective for girls? *Substance Use & Misuse*, *43*, 978-1001. doi:10.1080/10826080801914261
- Livingood, W. C., Allegrante, J. P., Airhihenbuwa, C. O., Clark, N. M., Windsor, R. C., Zimmerman, M. A., & Green, L. W. (2011). Applied social and behavioral science to address complex health problems. *American Journal of Preventive Medicine*, *41*, 525-531.
- Merton, R. (1938). Social structure and anomie. *American Sociological Review*, *3*, 672-682.
- Moss, H. B., Chen, C. M., & Yi, H.-Y. (2014). Early adolescent patterns of alcohol, cigarettes, and marijuana polysubstance use and young adult substance use outcomes in a nationally representative sample. *Drug and Alcohol Dependence*, *136*, 51-62.
- Myers, D. J. (2008). Epidemiologists, our patient is society. *New Solutions*, *18*, 107-109.
- Nash, S. G., McQueen, A., & Bray, J. H. (2005). Pathways to adolescent alcohol use: Family environment, peer influence, and parental expectations. *Journal of Adolescent Health*, *37*, 19-28.
- Palsdottir, D. (2003). *Drug-free Iceland: 2002 final report*. Retrieved from https://www.landlaeknir.is/servlet/file/store93/item10661/IAE_final2003.pdf

- Scholte, R. H. J., Poelen, E. A. P., Willemsen, G., Boomsma, D. I., & Engels, R. C. M. E. (2008). Relative risk of adolescent and young adult alcohol use: The role of drinking fathers, mothers, siblings, and friends. *Addictive Behaviors, 33*, 1-14.
- Sigfusdottir, I. D., Kristjansson, A. L., & Agnew, R. (2012). A comparative analysis of general strain theory. *Journal of Criminal Justice, 40*, 117-127. doi:10.1016/j.jcrimjus.2012.01.001
- Sigfusdottir, I. D., Kristjansson, A. L., Gudmundsdottir, M. L., & Allegrante, J. P. (2011). Substance use prevention through school and community-based health promotion: a transdisciplinary approach from Iceland. *Global Health Promotion, 18*, 23-26. doi:10.1177/1757975911412403
- Sigfusdottir, I. D., Thorlindsson, T., Kristjansson, A. L., Roe, K. M., & Allegrante, J. P. (2009). Substance use prevention for adolescents: The Icelandic model. *Health Promotion International, 24*, 16-25. doi:10.1093/heapro/dan038
- Watkins, J. A., Howard-Barr, E. M., Moore, M. J., & Werch, C. C. (2006). The mediating role of adolescent self-efficacy in the relationship between parental practices and adolescent alcohol use. *Journal of Adolescent Health, 38*, 448-450.
- Windle, M., & Zucker, R. A. (2010). Reducing underage and young adult drinking: How to address critical drinking problems during this developmental period. *Alcohol Research & Health, 33*, 29-44.