Te Hiringa Mahara | Mental Health and Wellbeing Commission

Alcohol and Other Drug harm reduction literature review

August 2026

Prepared for Te Hiringa Mahara - Mental Health and Wellbeing Commission by
Dr Rose Crossin, Dr Brin Ryder, Ms Ella Sims, and Dr Jai Whelan.
Department of Public Health, University of Otago (Christchurch)

University of Otago
ŌTĀKOU WHAKAIHU WAKA

ISBN 978-1-0671478-4-6 (online version and docx)

Te Hiringa Mahara - Mental Health and Wellbeing Commission was set up in February 2021 and works under the Mental Health and Wellbeing Commission Act 2020. Our purpose is to contribute to better and equitable mental health and wellbeing outcomes for people in Aotearoa New Zealand.

For more information, please visit our website: www.mhwc.govt.nz

Crossin, Rose; Ryder, Brin; Sims, Ella; and Whelan, Jai (2026). Alcohol and Other Drug harm reduction literature review. Te Hiringa Mahara – Mental Health and Wellbeing Commission: Wellington, New Zealand.

Published: August 2026.

Contents

Table of figures

Acknowledgements

The authors are grateful to the peer reviewers for their thoughtful and constructive feedback on the earlier draft of this report, and to the Te Hiringa Mahara staff for their guidance and input. The authors also affirm that no generative AI tools were used in the drafting or finalising of this report.

This report was finalised in May 2026, and the data is correct at the time of writing, while noting that this evidence base continues to evolve.

Document purpose and scope

This literature review summarises current evidence for what works to reduce alcohol and other drug (AOD) harm, with a focus on relevance to Aotearoa New Zealand (NZ). This was created for Te Hiringa Mahara, to support their development of a position statement and approach to alcohol and other drug harm reduction.

This review aims to answer:

- What are the known harms, and drivers of harms, associated with alcohol and other drugs in NZ?
- What legislative, policy, and practical approaches (nationally and internationally) are shown by evidence to be effective for reducing alcohol and other drug harm?
- What approaches and interventions could reduce harm from alcohol and other drugs in NZ?

The background sections of this review aim to provide contextual understanding of AOD harm, and to provide knowledge on harm reduction development, principles, and practice.

As per agreement with Te Hiringa Mahara, the following are out of scope for this review:

- Supply reduction for any drugs other than alcohol
- Cigarettes, vapes, or tobacco products
- Prevention approaches, including education
- Any intervention that is forced or coerced, including drug treatment

Limitations

This was not designed to be a systematic review, or to capture every piece of evidence that is currently published. Rather, it was intended as a summary of evidence of what works, illustrating key points and examples using academic literature.

It is acknowledged that there is a 'privilege' implicit in what knowledge gets published and what does not, and that this may introduce bias whereby effective interventions are not evaluated and do not get formally published. Lack of evidence is not intended to imply lack of efficacy.

Our professional and academic expertise was added to knowledge in an effort to synthesise key themes, and to highlight gaps in the evidence, and to also emphasise studies that strongly utilised lived experience, for consistency with harm reduction principles.

Abbreviations and acronyms

AOD – alcohol and other drugs

ATS – amphetamine type stimulants

AUD – alcohol use disorder

AUDIT – alcohol use disorder identification test

BBV – bloodborne viruses

EAT – enhanced agonist therapy

HAT – heroin assisted therapy

HCV – Hepatitis C virus

HIV – human immunodeficiency virus

IM – intramuscularly

IN – intranasally

LAP – local alcohol policy

MAP – managed alcohol programmes

MCDA – multicriteria decision analysis

MI – motivational interviewing

MPA – minimum purchase age

MUP – minimum unit pricing

NIROA – non-injecting route of administration

NSP – needle and syringe programme

NZNEP – New Zealand needle exchange programme

NZ – Aotearoa New Zealand

OAT – opioid agonist therapy

OR – odds ratio

OST – opioid substitution therapy

OUD – opioid use disorder

PP – pharmaceutical psychostimulants

PWID – people who inject drugs

PWUD – people who use drugs

QALY – quality adjusted life year

RCT – randomised control trial

ROA – route of administration

RR – relative risk

SCS – safe consumption sites

SES – socioeconomic status

SIF – supervised injecting facility

SIH – supervised injectable heroin

SIPP – safer inhalation pipe provision

SSAA – Sale and Supply of Alcohol Act NZ

SSP – safer smoking programme

SUD – substance use disorder

THN – take home naloxone

Executive summary

The aim of this review was to provide background knowledge on drug harm in Aotearoa New Zealand (NZ), harm reduction principles and programmes, and summarise the evidence on 'what works' to reduce drug harm. Almost 75% of NZ adults report consuming alcohol in the past 12 months, and almost 20% report using at least one illegal drug. Therefore, drug use is not an uncommon phenomenon, but an issue impacting a wide range of people. Though not all drug use is harmful, harm can arise from use, and impact both the person using the drug, and others (including family, friends, community, and society more broadly). Diverse harms are possible, including health impacts, psychological impacts (including substance use disorders), impacts on relationships, crime, and economic cost.

Drug harm does not affect all people equally, and often it is people who are already vulnerable or marginalised who are disproportionately impacted. Structural determinants of health impact drug use and harm, as does the environment in which drug use occurs. Drug policy is in and of itself a potential source of drug harm, and the risk of criminalisation for drug use can exacerbate harm and reduce help-seeking, while increasing stigma. Equally, harm can arise from highly commercialised regulatory models, in which public health controls are relaxed in favour of market-driven outcomes. In recognition that drug harm is not solely attributable to individual choice, but rather a complex interaction between the drug itself, the person using the drug, and the environment in which drug use occurs, a public health approach to drugs is emerging as an evidence-based way to reduce harm. This includes treatment, regulatory controls, and harm reduction as part of a suite of complementary responses and interventions. Importantly, a criminal justice response to drugs is not considered part of a public health approach.

Harm reduction is one aspect of a public health approach to drugs, which is both a set of a principles and a range of programmes, which aim to reduce harm from drugs while not requiring abstinence. Harm reduction principles are centred around human rights, dignity, and empowerment for people who use drugs. Harm reduction has evolved over time as a response to prohibition, and is frequently community-driven (particularly in the outset), with programmes responding to the harms that are pressing at a particular point in time. Programmes include needle and syringe programmes, drug checking, overdose prevention, and safe consumption spaces, among others. Indigenous harm reduction recognises that harm must be understood and addressed within a broader context, including the effects of colonisation and marginalisation on drug harm. Concepts important to Indigenous people such as land, spirituality, cultural practices and norms, and history then become integral to harm reduction efforts, with an emphasis on holistic care and community involvement. Indigenous harm reduction should be grounded in Indigenous understandings of health and wellbeing, cultural knowledge, relationality, and utilise Indigenous pedagogies. It is vitally important that Indigenous leadership be integrated and empowered within healthcare and harm reduction systems so that these may be positively influenced by experiential knowledge of racialisation, thus helping to address longstanding mistrust of health systems and centre equity and social justice.

With this background understanding in mind, this review integrates multiple aspects of a public health approach to drugs, including harm reduction programmes, and how harm reduction can be integrated with treatment. It includes discussion of legal models that may reduce policy harm from illegal drugs, and collates evidence on the ways in which alcohol regulation could better reduce harm. The scope includes alcohol and illegal drugs, but excludes nicotine and tobacco products. Given that alcohol is the only drug within scope that is currently legally regulated in NZ,

the regulation section is specific to alcohol. Prevention, while vitally important within a public health approach, was outside the scope of this review. This is because prevention efforts are aimed at reducing the uptake of drugs, rather than reducing harm for people who are already using drugs.

Across all studies it is vital to acknowledge the limitation of conducting a literature review, which will by definition decide what knowledge is and is not valid. An evidence appraisal tool was used for consistency, but it should not be inferred that a low GRADE score means that an intervention does not work, rather that the certainty is lower. Many interventions for indigenous harm reduction, and community-based harm reduction never have the opportunity to be evaluated or published, this does not make them invalid or their knowledge any less relevant. There are also inherent challenges in evaluating interventions that may be illegal, yet effective at reducing drug harm.

For drug treatment, Cochrane reviews were used as the primary evidence source. Significant variation in intervention design, comparisons, outcome measures and study populations make it difficult to draw strong conclusions about the efficacy of individual treatments, this was a common theme across all drugs and treatment approaches discussed. There were a very small number of studies conducted in NZ, while this does not mean the treatments would not be effective it does somewhat limit the applicability. A key consideration for NZ would be for treatment acceptability and accessibility, and ensuring equitable access to evidence-based and culturally appropriate care. Examples of incorporation of harm reduction within treatment were able to be found, and peer support was a strong contributor to the success of these programmes. A key finding from these studies was the importance of collaboratively designing outcome measures that could include abstinence, but where abstinence was not the only possible outcome. Strong engagement with lived experience brought more nuanced outcome measures for these programmes, reflective of the harm reduction principles of choice and empowerment. The role of peers is also important for recovery capital and are able to provide support and community as a person navigates their recovery journey.

A wide range of harm reduction programmes were included in the review, some of which are available in NZ currently (e.g. drug checking) and others which have a strong international evidence base, but are currently not available in NZ (e.g. provision of non-injecting equipment, or safe consumption spaces). Evidence for harm reduction programmes is generally consistent, though may be of lower certainty due to inherent biases in the literature towards medicalised models, and the observational and community-based nature of harm reduction studies. For the harm reduction interventions currently available in NZ – needle and syringe programmes, and drug checking – evidence is consistent with international knowledge and there is strong evidence of both effectiveness and cost-effectiveness. Naloxone has less availability in NZ, particularly intranasal, and this programme is relatively new, therefore, the evidence base is smaller. For harm reduction programmes that are not available in NZ currently, such as safer equipment provision, safe(r) supply of drugs, and supervised consumption facilities, caution must be taken when applying international evidence to NZ. The literature strongly signals that harm reduction interventions are strongest when co-designed with communities and with fulsome and meaningful engagement with people who use drugs, therefore, while evidence suggests that these interventions are likely to be effective in NZ, designing for local context would be vital. This must build upon knowledge of indigenous harm reduction principles and practices, in order to be culturally appropriate and acceptable to communities. For all harm reduction programmes, evidence becomes even more sparse when considering different priority population groups.

Future research and evaluation needs to consider access and acceptability for these programmes by rainbow communities, youth, different ethnicities, women, rural communities, and disabled people. It is particularly important to highlight that prisoners are considered a priority population, but are specifically excluded from accessing evidence-based harm reduction care in NZ.

All evidence points to harm reduction interventions being cost-effective; however, these interventions receive less than 2% of drug policy funding in NZ, despite recent evidence showing that community attitudes strongly support greater investment in this area of drug policy (Crossin, 2025). A significant barrier to implementation of harm reduction strategies is current NZ legislation, and programmes that have been shown to be effective internationally may not be permissible under current legislative settings. It is therefore important to acknowledge the role of drug law as both a source of drug harm, and a means by which harm could be reduced.

Examples are provided of indigenous harm reduction programmes both in NZ and internationally, which were available in both the academic and grey literature. However, it is important to note that many successful Indigenous initiatives are likely not documented in this way due to resource constraints, workplace priorities, or general misalignment with Western academic incentives. Similarly, a lack of documentation or evaluation is also likely a product of structural inequity and underfunding, leaving little room for public documentation. Indigenous providers are often required to use predetermined Western metrics to secure and maintain funding. This could put pressure on providers to change or dilute their interventions to ensure institutional survival, and could undermine the relationship building and maintenance that is often critical to Indigenous healing. Therefore, the true scale of the success of Indigenous-led approaches is likely underappreciated. This suggests that policymakers in NZ must look beyond traditional outputs and engage directly with community-led reporting and practice-based evidence to understand what is working for the Māori community and support evaluation and documentation that is consistent with te ao Māori.

This report presents a summary of the literature, but is not an exhaustive list of all academic and grey publications, and any omission of a study from this report is not intended to suggest that it is not valuable or effective. It is also acknowledged that this body of evidence is evolving constantly, and this report should not be read as a static ‘point of truth’, rather a summary of current knowledge, which could change.

A public health approach to drugs recognises drug harm is a health and social issue that is constructed and maintained by pressures outside of an individual’s control. Regulation, treatment, and harm reduction can work together as part of a complementary set of interventions, underpinned by principles that uphold the rights and mana of people who use drugs, and informed by lived and living experience of drug use. Harm reduction is a pragmatic and evidence-based way to reduce the potential harmful impacts of drugs and harm reduction interventions should be invested in as a way of supporting New Zealanders and their health and wellbeing, without judgement or stigma, but with respect and love.

Understanding drug harm

In this section a summary of drug harm in Aotearoa New Zealand (NZ) is provided. This includes discussion of what is drug harm, who experiences it, and how it can be quantified. The different sources of drug harm are then discussed, and the impact of legal status on the types and level of harm experienced. This work is premised explicitly on the concept that drug use and harm are not synonymous. Drug use does not always result in harm. Conversely, harm from drug use can affect others (including family, communities, and wider society). Therefore the prevalence of drug use in NZ is only briefly discussed, and the focus is predominantly on harm.

Drug use in New Zealand

Alcohol is the most commonly used drug in NZ. Data from the NZ Health Survey shows that in 2024/25, 74.9% of those aged 15 and over (approx. 3,250,000 people) had consumed alcohol in the last year, and 22.2% of past-year drinkers have a hazardous drinking pattern (Ministry of Health, 2025b). This is measured using the Alcohol Use Disorders Identification Test (AUDIT)[1] (Saunders et al., 1993). Hazardous drinking patterns are inequitably distributed; with those who are male, Māori, have a disability, and experience socioeconomic deprivation, more likely to report hazardous consumption (Ministry of Health, 2025b).

Understanding the prevalence of illegal drug use is somewhat more challenging, due to limitations in data sources. The last detailed population-level study of drug use in NZ (Te Rau Hinengaro) is almost 20 years old (Oakley Browne et al., 2006), and the NZ Health Survey does not currently provide data that quantifies use of any illegal drug, but rather reports prevalence of use drug by drug for cannabis, cocaine, ecstasy / MDMA, amphetamine-type stimulants (noting that the definition excludes MDMA), sedative or sleeping pill, hallucinogen, or opioid use. However, accepting that cannabis is the most commonly used illegal drug in NZ, in 2024/25, at minimum, 14.1% of those aged 15 and over (approx. 610,000 people) used an illegal drug in the past 12 months (Ministry of Health, 2025b). This number is likely to be higher, but the survey does not currently cite a figure for 'any illicit drug use', and some people who use other drugs may not use cannabis[2]. Using NZ Health Survey data, the prevalence of use of all illegal drugs in NZ is either stable or increasing; none are decreasing, in contrast to alcohol consumption which is showing a small declining trend (Ministry of Health, 2025b). These findings are consistent with a globally high drug supply (United Nations Office on Drugs and Crime, 2025). Survey data also have some limitations, in that respondents are less likely to report stigmatised and/or illegal behaviours, and sampling frames may exclude those who are most disadvantaged or marginalised (Johnson, 2014).

Drug use in NZ and any associated harm is linked to the local drug market and influenced by both availability and cultural/social norms. For example, there is relatively low supply of imported opioids and a culture of producing 'home-bake'[3], which changes the nature of the potential harm (Harris, 2013). NZ has also historically had a higher supply of methamphetamine, whereas

[1] AUDIT was developed by the World Health Organisation, and includes measures of consumption as well as harm (e.g. have you or someone else been injured as a result of your drinking).

[2] The recently published Action Plan to Reduce Substance Harm included a bespoke analysis of NZ Health Survey data, which stated that just under 20% of New Zealander's had used an illicit drug in 2024/25, which is consistent with the assumptions above (noting that most people who used illicit drugs also consumed alcohol). Report available from: https://www.health.govt.nz/system/files/2026-03/action-plan-prevent-reduce-substance-harm-2026-2029.pdf

[3] Heroin produced from pharmaceutical codeine or morphine.

cocaine was expensive and relatively unavailable, though this has changed in recent years, with cocaine availability increasing (as measured by surveys of use, drug seizures and wastewater testing; (New Zealand Drug Foundation, 2025a; Wilkins, 2026)). Because of this, the nature of drug harm should not be seen as static, and harms that are not considered significant at the moment, could become more prevalent with changes to the drug supply.

Motivations for drug use

A fundamental principle of harm reduction is the acceptance that drug use has been, and will continue to be, a part of human society (National Harm Reduction Coalition, n.d.-b); that there never has been and never will be a 'drug-free world'. This does not preclude an individual choosing not to use drugs, or choosing to stop using drugs, but accepts that drug use will not be eradicated. Therefore, to understand drug use through a harm reduction lens requires some discussion of why people use drugs.

The drive for humans to alter their consciousness and seek out feelings of intoxication has been described by some scholars as a fundamental human urge; alongside hunger, thirst and sex (Siegel, 2005). While this is not universally accepted, and critics argue that intoxication is not critical for survival, nevertheless there is a long evolutionary and social history of humans (and other mammals) intentionally consuming intoxicating substances (Saah, 2005), which has persisted across cultures and times.

At an individual level, there can be diverse motivations that result in a person initiating drug use, maintaining use, and continuing use even through experiences of harm. These are described in the literature in different ways, including benefits, expectancies, and motivations. It is also important to note that some motivations may be better described as 'perceived benefits' rather than 'objective benefits', or that some benefits are highly contextual and time-dependent, for example, drugs may be used to alleviate stressful or negative states, while actually worsening them across time (Cox & Klinger, 1988; Fergusson et al., 2009). Therefore, the term 'motivations' is used here.

Motivations for use can be diverse, both to enhance positive feelings and suppress negative states. This duality led to the development of the four-factor drinking motives model where the source of the motivation is described as internal or external, and the expected valence is positive or negative (Cox & Klinger, 1988). The four-factor model was developed specifically for alcohol, and there is not such a well-established common framework for drug use motivations that applies across drug types and different cultural contexts. There have been considerations of applying the motivational model of alcohol use to tobacco and cannabis, which concluded that "despite strong similarities in motivations, some motives for tobacco and cannabis do not fit" (Cooper et al., 2016) The current literature includes items such as; enhancement, sociability, conformity, anxiety-coping, depression-coping, boredom-coping, self-expansion, and performance (e.g. energy, concentration, sexual performance) (Biolcati & Passini, 2019), among others[4].

There are different theories or constructs that seek to explain why someone might use drugs, including theories of rational choice from behavioural economics that emphasise a drug's ability to produce a particular effect, when compared to other available mechanisms for producing the

[4] Work is underway in NZ to explore motivations for drug use from the perspectives of those with lived experience, led by Prof. Boden, Dr Crossin and Dr Whelan from the University of Otago. This should be published in early 2027.

same result. This theory creates space for both harm and benefit to occur, whereby the short-term benefit of drug use is being weighed against the potential for harm. Dependence can also be understood in this way, if relief from (or avoidance of) withdrawal symptoms is considered a benefit or motivation of drug use for a person with a substance use disorder.

Defining drug harm

Drug harm can be understood as the negative consequences of drug use. Harm can impact both the person using the drug, and others (including family, community, and society). Harm can also be both acute (e.g. overdose) or chronic (e.g. alcohol-related liver disease). The concept of harm is an important one, because many jurisdictions, including NZ, organise illegal drugs into classes on the basis of their harmfulness (which then influences the potential criminal penalty) and because the goal of 'minimising harm' is frequently cited as a policy goal (e.g. the NZ National Drug Strategy (Inter-agency Committee on Drugs, 2015)). The current scheduling of drugs in NZ is inconsistent with evidence of their harmfulness (Crossin et al., 2023).

Despite its conceptual importance, there is no universally accepted definition or set of measures for drug harm, perhaps reflective of the fact that individuals and population groups may conceptualise and experience drug harm in different ways. Drug use is sometimes used as a proxy measure for drug harm, but as previously noted, there are significant flaws to this approach. Using use as a proxy for harm may also have unintended consequences, by focussing any efforts at harm minimisation only towards reducing drug use, and by increasing drug-related stigma. The stigmatisation of drugs and people who use drugs should be considered as a harm in and of itself, but can also perpetuate harm by pushing people who use drugs into secrecy and reducing help-seeking, as well as damaging relationships, decreasing sense of worth, generating stress, and contributing to marginalisation (Ahern et al., 2007; Lloyd, 2013).

Part of the challenge in understanding drug harm is that it is contextual, and can be influenced by the type of drug, modes of consumption, use patterns, individual-level factors, and social and environmental context. MacCoun and Reuter provide a taxonomy of drug harm in the 2001 book Drug War Heresies, which lists almost 50 types of harm, divided into Health, Social and Economic Functioning, Safety and Public Order, and Criminal Justice (MacCoun & Reuter, 2001). This three-dimensional model also describes who bears the harm, and what is the primary source of the harm.

The problem of how to consistently assess potential harmfulness was then developed further by David Nutt and colleagues in their 2007 paper (Nutt et al., 2007), which consisted of nine parameters under three primary categories; the physical harm to the individual user caused by the drug, the tendency of the drug to induce dependence, and the effect of drug use on families, communities and society. This framework was then updated and used to complete a study of drug harm using multi-criteria decision analysis (MCDA) in the United Kingdom (Nutt et al., 2010), with the types of harm organised into the framework below (Figure 1). It is important to note that dependence on a drug is one type of harm, but not the only harm, and recognises that harm can occur for those who use a drug but are not dependent and would not meet clinical criteria for a substance use disorder.

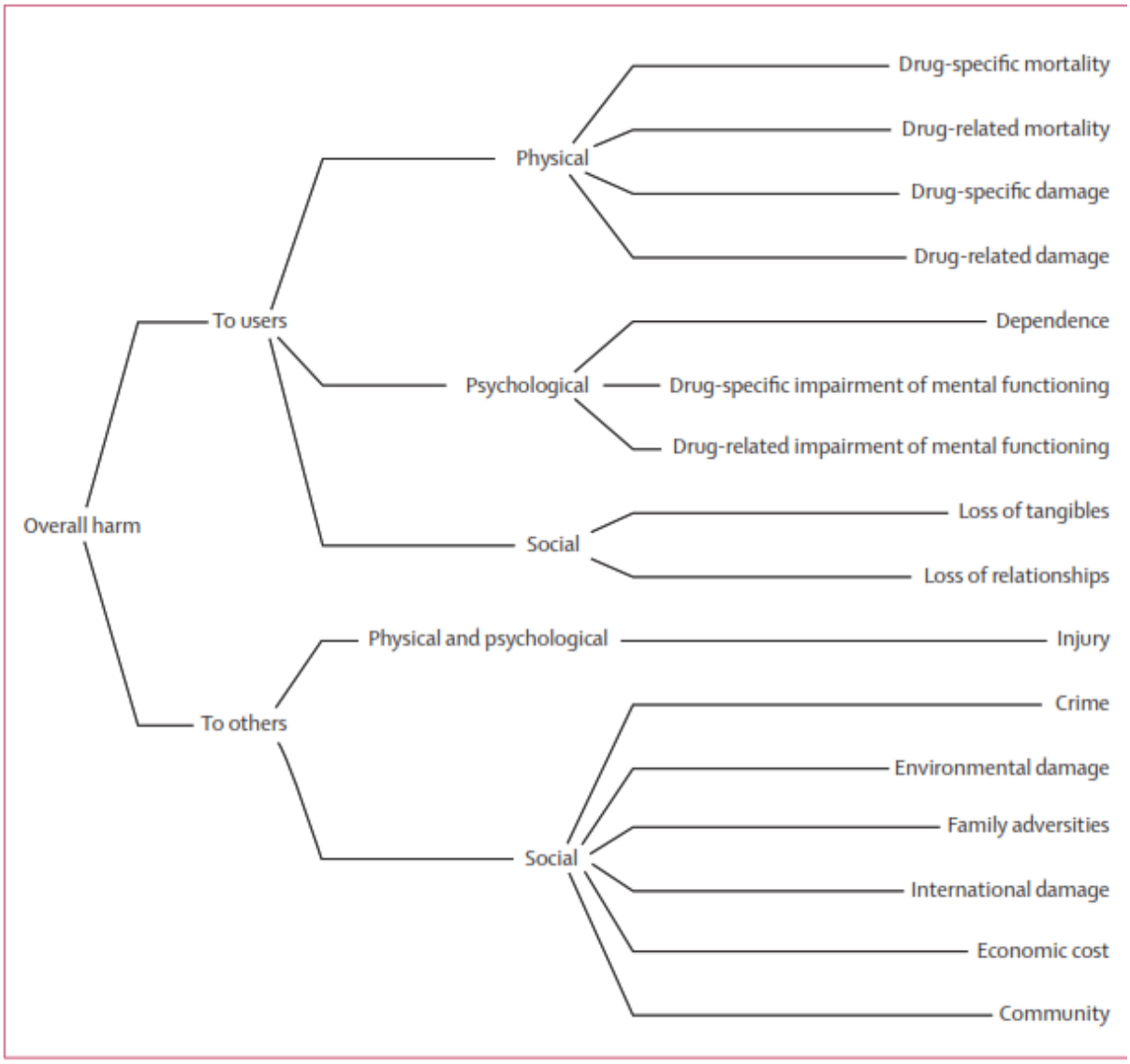

Figure 1 – framework for organising harm criteria, cited from (Nutt et al., 2010).

While the UK drug harm ranking study was undertaken by a panel of experts, subsequent studies found that there was high agreement on harmfulness when assessed by people who use drugs (Morgan et al., 2010). The MCDA approach to assessing drug harm was subsequently undertaken in the European Union (van Amsterdam et al., 2015), Australia (Bonomo et al., 2019), NZ (Crossin et al., 2023), Canada (Crépault et al., 2026), and the US (Broman et al., 2026).

While these previous studies have been impactful in terms of health promotion and in framing policy and advocacy discussions, the previous applications of the MCDA methodology to drug harms are not without criticism (Caulkins et al., 2011; Rolles & Measham, 2011); the four main criticisms are:

1. Lack of specific population group analysis;
2. The MCDA analysis is undertaken primarily by experts;
3. Benefits of drug use are not considered;
4. Harms caused by drugs are not differentiated from harms caused by drug policy.

Work is being done in NZ to address the issue of lack of specific population group analysis, with a Māori conceptualisation of drug harm currently in development, but as yet unpublished, and

the Health Research Council recently awarded a grant to Rose Crossin and Joe Boden from the University of Otago to develop and validate a framework and series of measures for youth drug harm (project commenced in October 2025).

One of the other significant challenges in this approach more generally is how to take prevalence of use of a drug into account. At an individual level, it is possible to consider which drugs have the potential to cause more or less harm. However, when considering harm at a population level, it becomes difficult to disentangle the effects of prevalence; whereby a drug that is less harmful at an individual level may have high overall levels of societal harm because many people use it. Different MCDA studies have dealt with this issue in various ways; the Canadian study adjusted for prevalence of use (Crépault et al., 2026), while the Australian study did an assessment without prevalence and then adjusted for prevalence in a sensitivity analysis (Bonomo et al., 2019). Accounting for prevalence was not possible for the NZ study because consistent use data were not available for all drugs, and therefore prevalence of use had to be accounted for within the assessment of some criteria (Crossin et al., 2023).

Measuring drug harm

One of the reasons for the MCDA method being commonly used is because, even assuming that there is an agreed definition of what drug harm is, there will not be data available to measure all types of harm. Some types of harm, particularly those with medical and justice outcomes, are easier to measure, and therefore, administrative data exists for them. This is also true for more commonly used drugs. However, a 2022 data stocktake found that harm data on less commonly used drugs, and harm to others, are sparse in NZ (Crossin et al., 2022). Therefore, the MCDA method uses expert knowledge, comparative assessment, and consensus as a means of overcoming data gaps.

Don Weatherburn published a thoughtful commentary in 2009 that outlined the challenges of having a 'harm minimisation' goal for any drug policy, which emphasised the issues when trying to define and measure harm (Weatherburn, 2009). His commentary concludes that these are important problems, but there is a bigger issue in that in taking efforts to reduce some types of harm, others may be overlooked, or increased. Therefore, one potential way of moving this issue forward would be to discard a generic overarching policy goal like 'harm minimisation' but instead be explicit about exactly which types of harms the aim is to reduce (Weatherburn, 2009).

The challenges in measuring harm may be one of the reasons that drug use is measured as a proxy. At a population-level and for some drugs, there may be a tighter correlation between use and harm. For example, a study of alcohol consumption in NZ youth found that when use decreased, harm also decreased (Ball et al., 2024). In contrast, however, an earlier study by the same team had shown elevated alcohol harm among Rainbow youth in NZ even after adjustment for drinking patterns (Ball et al., 2022). There are very few studies that comparably measure both use and harm, which would allow for an estimate of the correlation between the two; this is a major limitation in the literature.

It is noted, however, that there are three pieces of work (at least) that are seeking to address this knowledge gap in NZ. While none are currently published, study leads are listed here so that additional information could be sought:

1. Prevalence of harm in the Christchurch Health and Development Study (Prof. Joe Boden): this study is aiming to map existing data sources to different types of drug harm and then compare these to use.

2. Substance Outcome Harm Index (Prof. Chris Wilkins): a new harm index, looking to measure risk of harm to individuals, for further information on scope and methods see: https://search.informit.org/doi/full/10.3316/informit.T202511210000219000748757 7
3. Youth drug harm in NZ (Dr. Rose Crossin): this project will be taking a participatory youth-led approach to first build an understanding of youth harm using qualitative methods, then a framework will be created, and youth drug harm will be measured using a population-level survey, see: https://www.hrc.govt.nz/resources/research-repository/defining-and-measuring-drug-harm-youth-aotearoa-new-zealand

Drug harm in New Zealand

While acknowledging the limitations of the MCDA method, the challenges of accounting for prevalence of use, and that this study was based on best available knowledge and expertise at a point in time, the New Zealand drug harm ranking study is currently the most fulsome assessment of drug harm that applies across drug types in NZ (Crossin et al., 2023). The MCDA method was used to assess drug harm for the total population, and separately for youth (aged 12-17).

In this study, 23 drugs were scored against 17 harm criteria, and those criteria were then evaluated using a swing weighting process. This study included tobacco products and vapes, noting that these are out of scope for this review. There were three significant changes to the criteria from the original UK MCDA study (Nutt et al., 2010). In the NZ study, two original criteria 'drug-specific impairment of mental functioning' and 'drug-related impairment of mental functioning' were collapsed into a single criterion, because the panel could not meaningfully separate them. Additionally, two new criteria were added to better reflect a Māori worldview. The development of these new criteria began with an online survey promoted during an online conference for Māori working in the drug sector. The opportunity to complete the survey was offered to volunteers who attended the conference, and to a targeted group of Māori experts. The survey asked respondents to evaluate each of the existing criteria and their relevance to Māori, in addition to any changes that should be made to the criteria, and gaps in terms of drug harm from a te ao Māori perspective. The responses from this survey were then collated and anonymised before being assessed by a Māori consultant (K. Maynard) who used the feedback to review the criteria and develop two new criteria: intergenerational harm, and non-physical/spiritual harm.

Non-physical/spiritual harm is a harm to self, defined as: *Extent to which the use of a drug negatively impacts on mana, wehi, tapu, ihi, mauri, wairua, ahua/aura; lowers ihi rangaranga (energetic vibration) and increases vulnerability to wairua poke (negative entities/demons). Also includes impacts on reputation, identity, potential (e.g., through imprisonment or criminal conviction, reduced ability to fulfil cultural obligations).*

Intergenerational harm is a harm to others, defined as: *Extent to which the use of a drug, directly or indirectly impacts on future generations (e.g., mana of the family/whānau, transmission of addictive behaviours, loss of knowledge and connection to whakapapa (genealogy), tikanga (customs/way of doing things) and culture.*

This study found that alcohol was the most harmful drug to NZ, with methamphetamine second. These were the only two drugs where harm to others was higher than harm to self (Figure 2).

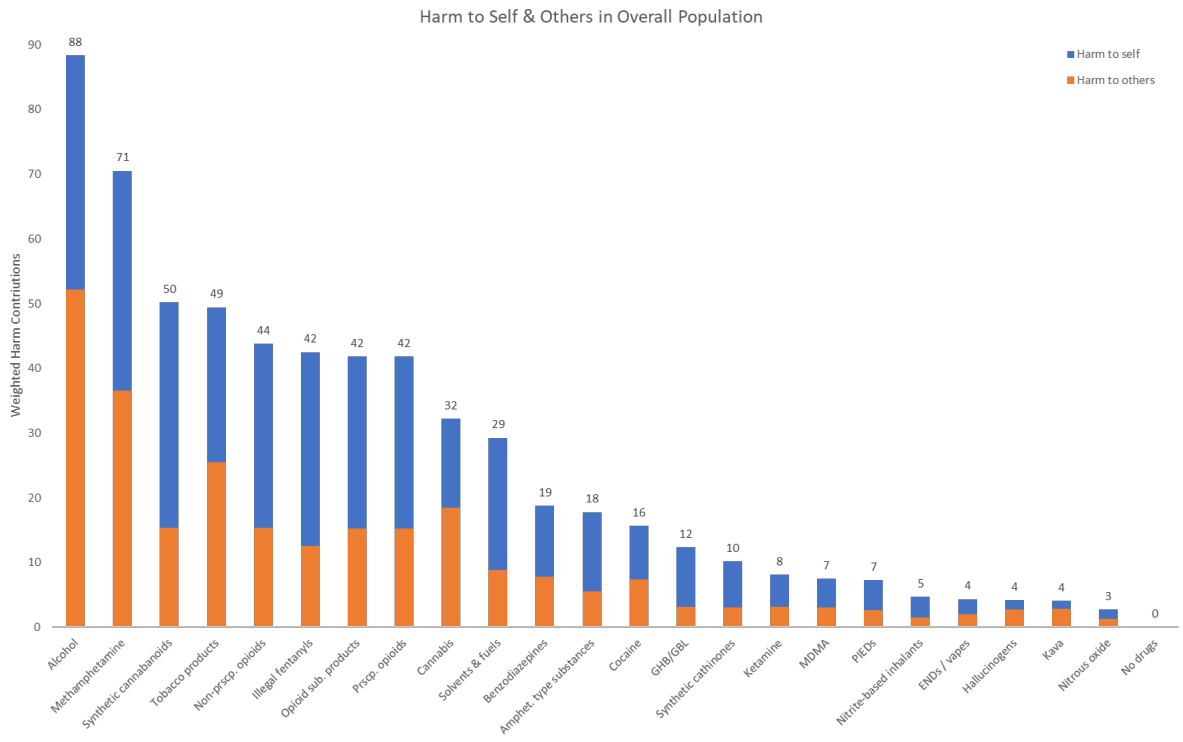

Figure 2 – Drug harm study findings for total NZ population (Crossin et al., 2023)

Some drugs, e.g. alcohol, had scores that were high across a diverse range of harms, whereas for others, the scores were dominated by particular types of harm. For example, the opioid categories were dominated by four significant types of harm; drug-related mortality, loss of tangibles, loss of relationships, and family adversities (all except family adversities are harms to self). In contrast, cannabis, which is the next drug in the ranking is significantly lower on drug-related mortality, similarly high for loss of tangibles (e.g. loss of income or employment), and higher than the opioids for intergenerational harm.

If we consider some of the key harms that contemporary NZ harm reduction services aim to minimise (without suggesting that this is optimal practice), many programmes would be primarily aiming to target:

- Drug-related mortality – e.g. fatal overdoses, death related to a bloodborne virus
- Drug-related damage – e.g. non-fatal overdose, harm from bloodborne virus

The highest ranked drugs for drug-related mortality (that are within scope of this review, provided in order) are alcohol, illegal fentanyls, non-prescription opioids, synthetic cannabinoids, prescription opioids, opioid substitution products, and methamphetamine.

The highest ranked drugs for drug-related damage (that are within scope of this review) are alcohol, synthetic cannabinoids, methamphetamine, illegal fentanyls, non-prescription opioids, prescription opioids, and opioid substitution products.

Sources of drug harm

While it is relatively easy to understand how the pharmacological effects or actual use of a drug has the potential to cause harm to the person using it, the sources of drug harm are substantially more nuanced and complex than that. Ethan Nadelmann's 1989 paper was one of the first academic works that clearly established prohibition as a source of drug harm, separate to drug

use itself (Nadelmann, 1989). This idea was expanded by MacCoun and Reuter (2001), who describe three sources of drug harm; use of the drug, illegality of the drug, and enforcement of the drug laws. The separation between costs of illegality and costs of enforcement recognises that trade in an illegal commodity can still result in harm, even if the law were not being enforced.

The idea that drug policy and drug law are sources of harm was subsequently expanded on and applied to legal drugs by the Global Commission on Drug Policy (2014), using the U-shaped curve (Figure 3), where harm is high in both a prohibition and free-market environment. This model emphasises that drug policy itself can be a source of drug harm, while also noting that harm in a regulated environment is not zero, and that policies can still have unintended consequences and create inequity. For example, the legalisation of cannabis in some countries has increased profits for companies, while restricting access to the market for some population groups.

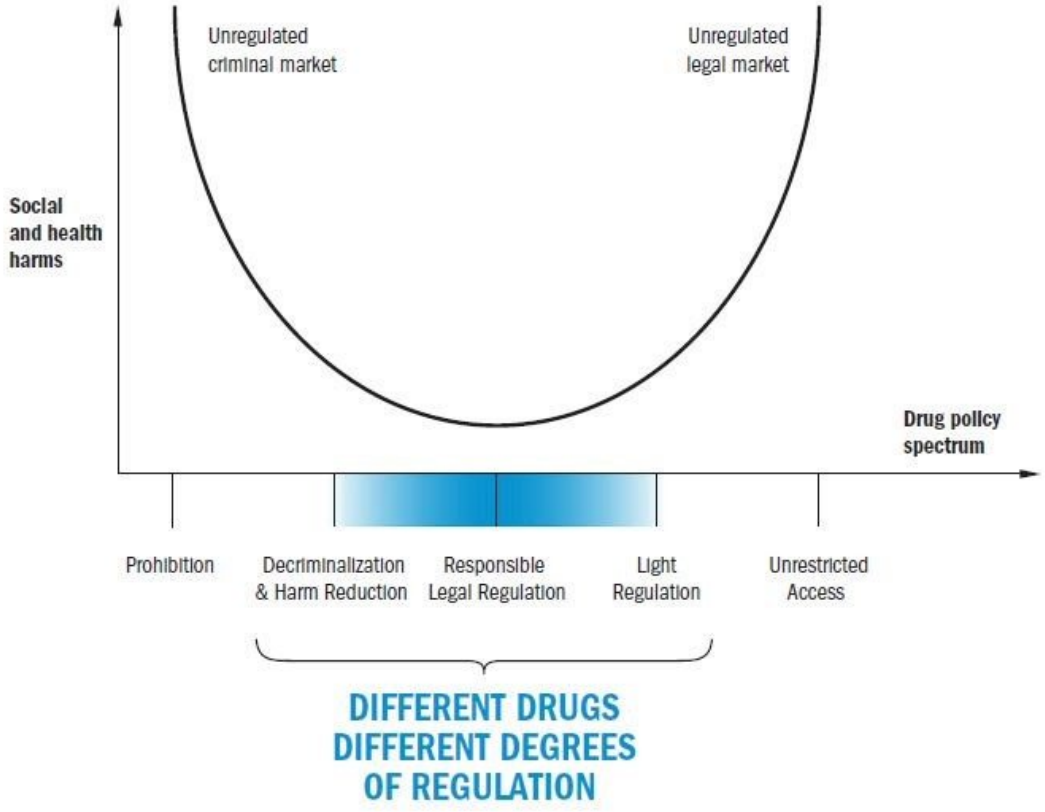

Figure 3 – Sources of drug harm (Global Commission on Drug Policy, 2014)

Norman Zinberg's 1984 book Drug, Set, and Setting (Zinberg, 1984) was another leading piece of work that challenged the idea that the drug use experience, whether beneficial or harmful, is not solely attributable to the characteristics of drugs themselves, but that 'set' (the state of mind of the person using the drug) and 'setting' (the physical and social contexts of use) are equally important. Both this and earlier work by Becker (1974) focussed on hallucinogenic drugs, though the concepts can apply more widely.

Applying these concepts specifically to drug harm enables identification of the types of harm that different drugs can present, and where such harms may arise from. For example, drug related

harms would include harm arising from the purity, dose, route of administration, and pharmacological effect of a drug. Harms arising from 'set' can consider other individual-level factors may be factors such as age, gender, ethnicity, co-morbidities, mood, etc. Harms arising from the setting or context would include issues like drug laws, availability of and access to support services, geographic location, social norms and stigma. These sources of harm can intersect and influence each other, for example, risks arising specifically from injecting a drug may become more severe in a prohibition environment where greater barriers to support exist. Understanding the inter-relationship between these influences and subsequent harms also helps to build an understanding of harm reduction's origins, because it was largely seeking to reduce drug-related harm that is produced within a prohibition context.

This broader view of how drug harm is created or reduced led to the idea of 'risk environments', led by Tim Rhodes (2002), which conceptually aligned a public health approach and harm reduction, through recognising that change must be implemented at individual, community and ecological/societal levels. In doing so, it moves responsibility for harm reduction beyond that of an individual person who uses drugs, recognises that structural inequality and vulnerability are themselves significant contributors to drug harm, and that broader social interventions are needed to create the 'enabling environment' in which harm reduction can be effective. The model rejects an 'individual responsibility' framing, in which a person using drugs is the only one with responsibility for harm and harm reduction. Later work on risk environments described harm as a matter of 'contingent causation', in which harm is contingent on the interaction between individuals and their environments (Rhodes, 2009).

The risk environments model helps to build an understanding of why the same use of the same drug could result in different harm, depending on who is using the drug and their context of use; later described in the literature as an 'intersectional risk environment' (Collins, Boyd, et al., 2019). There is a significant body of evidence that emphasises the intersectional nature of drug harm, including, but not limited to factors such as gender, ethnicity, indigeneity, housing status, gender identity (Collins, Bardwell, et al., 2019; Patton et al., 2022). These studies not only highlight inequitable outcomes, but emphasise the need for tailored responses to population groups. This would include consideration of how stigma intersects with both drug use and indigeneity (Pegler et al., 2025; Sivak et al., 2023). However, a challenge to this exists in that the inclusion of 'lived experience' can sometimes fail to recognise the intersectional and plural experiences that people bring. It is important that lived experience knowledge and involvement reflects a diversity of views from PWUD. These ideas continue to be developed, with social harm theory being integrated into drug policy and harm reduction, which enables greater exploration of how policies and legislation impact people and communities, and the influence of social and structural power (Dertadian & Askew, 2024).

In parallel, there has been recent work exploring and defining what it would mean to take a 'public health approach' to drug use. The foundation of this approach is that it moves beyond purely individual-level responses, and recognises social and structural determinants of harm (Crepault et al., 2023; Mathias et al., 2025). Increasingly, a public health approach to drugs has focussed on harm reduction (Crepault et al., 2023), and harm reduction principles are evident in the recently published conceptual framework on a public health approach to drugs (Figure 4) (Mathias et al., 2025).

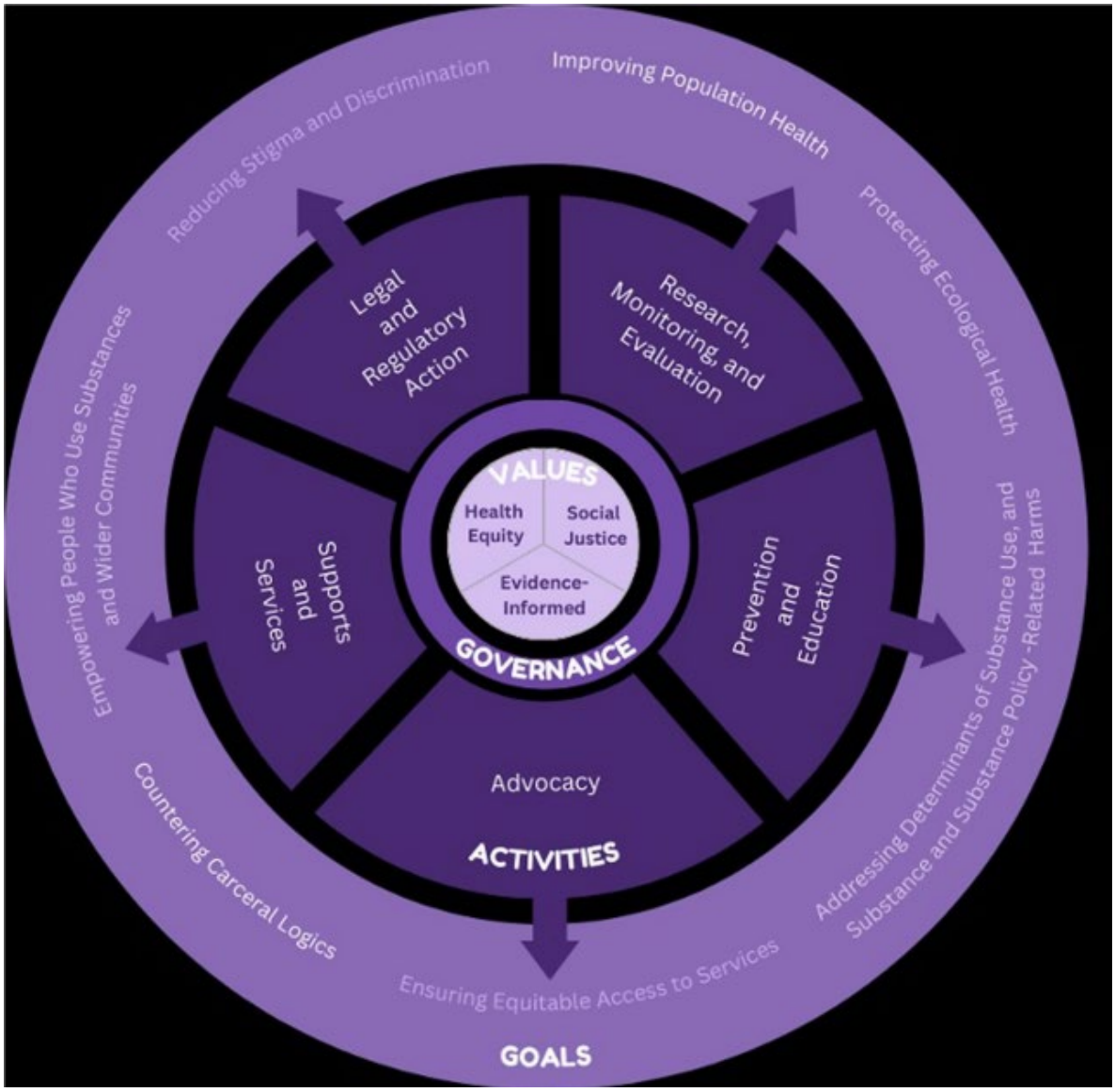

Figure 4 – Conceptual framework for a public health approach to substances (Mathias et al., 2025)

Worked examples of drug harm and sources of harm in New Zealand

Here we take a 'vignette' approach to integrate these concepts of harm and the sources of harm with NZ data. These are not intended to represent all types of harm, but are rather intended to illustrate different types of harm, inequities in harm, and sources of harm.

It is also important to note that these examples are not intended to stereotype individuals or particular demographic groups, but to demonstrate the complexity of these scenarios, and how harm can arise from societal context and structural determinants, and how intersectionality can influence drug harm. These case vignettes could be applied to other priority populations; for example, the CNS depressant example could be considered for veterans or rural communities, and the risk of overdose is known to increase post-prison release (Bukten et al., 2017). These vignettes do not intend to imply that the demographic described are the only groups at risk of harm.

These vignettes were written by the authors building from both lived experience and academic literature; all people in the vignettes are fictional.

CNS depressant overdose

L grew up with parents who weren't really approachable. They went to a good school and were expected to get high grades and perform well in sports. They broke their leg when they were 17 during a rugby game; it was a bad break, requiring surgery. They were prescribed opioids for pain relief post-surgery and really liked the way it made them feel. After school, they enrolled at University, but found the pressure was intense and it exacerbated their anxiety and they constantly had issues sleeping. They went to their GP repeatedly, and were eventually prescribed a short course of benzodiazepines, which helped a lot. But when they went back to their GP and asked for a repeat, the GP was reluctant and would not agree to a new script. However, they did prescribe pregabalin for ongoing pain issues, following the leg injury, and this helped L a bit and incidentally also helped them sleep, if they took it at night.

Many months down the track, L was really struggling. Anxiety, chronic pain, and insomnia were starting to impact their grades. They knew they needed help, but didn't want to appear weak in front of their parents, and didn't want to go back to their GP because they'd already asked for a prescription and been told no. They eventually found someone through friends of their flatmate who was able to source benzodiazepines, and their flatmate also gave them some leftover tramadol that they had not thrown out from years ago. L was a little worried about the benzodiazepines because they never actually saw the box, and did consider going to a drug checking service. But the nearest service that offered it was several hours drive away, and they figured that because it was in a tablet form and was a pharmaceutical drug it would be ok.

One Friday night, L was drinking at home, and started to feel really low and depressed. They told their flatmate that they had had enough and were going to bed. L tried to sleep, but were feeling awful, so even though they had already taken their prescribed pregabalin that day, they took another one. But 30 mins later, they were still awake, with their leg hurting. They were desperate for sleep and for the pain to stop, so they took some of the benzodiazepine and tramadol tablets too.

Their flatmate looked into the room after they'd walked past L's door and heard them snoring loudly. They saw L in their bed on their back, snoring and occasionally making a gurgling noise. They were a bit worried and contemplated trying to wake L up, but then they saw the packet of tramadol they'd given L on the bedside table. They tiptoed in, took back the pack of tramadol and flushed the rest down the toilet. They didn't look too closely at L, but figured that they were probably just a bit drunk and would sleep it off, so closed the door again and hoped for the best.

Key facts for NZ:

Primary reference source is the drug overdose reports produced by the NZ Drug Foundation (New Zealand Drug Foundation, 2024)

- In 2024, 148 people died of an unintentional drug overdose
- The three most common drugs detected in unintentional overdose deaths between 2016 and 2024 were; opioids, alcohol, and benzodiazepines
- The risk of overdose increases when multiple depressant drugs are taken at once, and 93% of deaths involving opioids also included at least one other depressant drug

Key contributors to harm in this example:

- Unmet healthcare needs, including pain and sleep issues
- Co-morbid mental health issues

- Medical stigma and concern about help-seeking
- Unavailability of drug-checking
- Misconceptions about safety of pharmaceutical drugs
- Unregulated supply of drugs leads to unknown strength and purity
- Lack of knowledge regarding effects of multiple depressant drugs
- Lack of bystander knowledge on signs of an overdose and recognition when it has occurred
- Lack of 'Good Samaritan' protections, creating a barrier to seeking medical help for potential drug-related harm [5]

Methamphetamine harm

M (she/they) grew up with parents who fought often, frequently neglecting M's nutrition and school attendance. They were eventually uplifted into state care. Changing homes several times was stressful, particularly as none of them supported M's identification as a queer person. They struggled daily; with their identity, difficulty making friendships, mental focus and chronic exhaustion throughout schooling, and were often excluded from class. They decided to move out of care just before they were due to '*age out*' anyway, and found they were more readily accepted by street communities.

They were first offered a puff of methamphetamine by an acquaintance, who said it helped to stay vigilant, and in better spirits. They found that the euphoria provided relief from regular overwhelming feelings of shame and suicidality. They thought injecting was disgusting, but transitioned when their local dairy selling 'flower stem' (a.k.a. 'oil burner') pipes was shut down.

Injecting didn't cause the frequent burns, cuts or awful cough they used to get from smoking, but could produce fevers, abscesses, visible bruising and scars on their arms, hands and feet. They could never anticipate how strong '*a dose*' was until it took effect, often ending up taking too much, or getting no high at all. People they know were falling unconscious after some doses, and nobody could tell them why, or how to avoid it.

M has no stable housing, but guys on dating apps eagerly offer them a place to stay and show up at M's usual spots offering drugs if they'll get in a vehicle. Sometimes they're offered the drug repeatedly if they'll stay longer than a night. They know it's best not to use methamphetamine several days in a row, but when they're too tired to find a new place, it helps - especially to not think so much about the things strangers make them do in exchange. Sometimes they go 3 or 4 days without eating much, or sleeping at all, which causes them worsened feelings of depression on the comedown, hallucinations that make it difficult to see or tell what's real, and horrific voices that encourage physical self-harm. Even when they try their best (and manage) to only use once in a few days, they've been taken to ED for "dirty hits"[6] wound care, and bouts of psychosis more times than they can count. They recently learned about hepatitis and got tested, but the hospital staff never found a way to get back in touch, and haven't brought it up again. M has heard of human immunodeficiency virus (HIV), but never realised they're at-risk. They peeked at their hospital chart once; the first page just said "IV drug user" with no other notes. Every healthcare worker treats them with suspicion, even though they've never asked for drugs.

The only times M has seen more than a few hundred dollars at once are when a dealer fronts them (provides in advance, expecting repayment for) a larger quantity of methamphetamine, on the

[5] Noting that this is a rapidly evolving situation, with legislation passing its first reading in the NZ parliament on 29 April 2026.

[6] bacteraemia; germs getting into their bloodstream

promise they'll on-sell the extra to clear their debt. At first, this seemed better than other forms of payment, but the threats and violence they experienced turned out even worse, and lots of their friends have been arrested for dealing lately. They don't know of any way to change their life.

Key facts for NZ

- An estimated 56,000 people aged 15+ (1.3%) reported past-year amphetamine-type stimulant use in 2023/24; 29% of past-six-month methamphetamine users reported daily or near-daily use (up from 19% in 2022/23) (Ministry of Health, 2025a), with social harm conservatively estimated at ~$1.5B in 2024 (Ministry of Justice, 2025).
- More than 90% of people surveyed who inject drugs in NZ have experienced injecting-related injuries or diseases (40% reporting >10); 63% have never sought medical attention for these, including 32% of those experiencing severe injuries (Potter et al., 2025).
- Methamphetamine was ranked the second most harmful drug in NZ (after alcohol) in a 2023 multi-criteria decision analysis (Crossin et al., 2023), with harm over-represented in areas of socio-economic deprivation and among Māori (New Zealand Drug Foundation, 2025a).
- Although discretionary 'health-based' approaches were introduced in 2019 prosecutions in 2025 were the highest in a decade.

Key contributors to harm in this example

- Childhood adversity and state care: family disruption, state care, and other adverse childhood experiences predict alcohol and drug harm (Bax, 2021; Mongan et al., 2025).
- Disproportionate violence toward takatāpui whānau: Gender-diverse people in NZ more often report psychological distress and greater odds of substance use compared with cisgender peers (Yee et al., 2025).
- Gender: international evidence links methamphetamine to gendered transactional risks and intimate-partner violence (Guggisberg, 2010).
- Unaccommodated neurodevelopmental differences: Autism spectrum and 'attention deficit / hyperactivity' disorders are strongly linked both to drug-taking as self-medication, and in the form of substance use disorders (Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation, 2024b).
- Stigma across healthcare, policing, housing and employment: Most NZ people who inject drugs (PWID) do not seek medical attention for injecting-related injuries; anticipating stigma and mistreatment, often leading to delayed care (Potter et al., 2025). People who use drugs (PWUD) leaving prison face stigma and significant financial and social barriers to employment (Welwean et al., 2025) and housing - as few as half of people leaving prison in NZ settle into long-term accommodation (Low et al., 2025). Māori are disproportionately charged for drug offences in NZ, while discretionary 'health-based' determinations made by NZ Police tend to favour non-Māori more often
- Follow-up for unhoused PWUD: Contact between PWUD and health services is often fragmented, and routine follow-up (e.g. bloodborne virus (BBV) testing) commonly fails (Potter et al., 2025)
- Chronic poverty, deprivation, acquisitive crime: methamphetamine use is concentrated in NZ's most-deprived neighbourhoods; women living in the most-deprived areas are >10-times as likely to report past-year amphetamine use than those in the least-deprived (New Zealand Drug Foundation, 2025a)
- The 'user-supplier' spectrum: Supplying substances to others – whether 'socially' or more 'professionally', can blur the distinction between 'user' and 'dealer'. In particular, debt-

bondage and coerced on-selling contribute to increased risks of violence, interactions with law enforcement, and carceral outcomes (Coomber & Moyle, 2014; Foulds & Nutt, 2020).

- Chronic use: Weekly methamphetamine use increases likelihood of involvement in violence (as victim or perpetrator) (Foulds et al., 2020). Sleep deprivation across multi-day binges is also a key driver of methamphetamine-induced psychosis.
- 'Smoking' risks - especially from makeshift pipes: Cuts, burns, haemoptysis, BBVs from sharing. 82% of the UK Safe Inhalation Pipe Provision (SIPP) cohort reported symptoms attributable to crack cocaine[7] use, with rates of each harm disproportionately affecting women (M Harris, 2026).
- Injecting risks: More than 90% of people surveyed who inject drugs experience injecting-related injuries or diseases; 40% had experienced more than 10 of these, and 63% had never sought medical attention - including 32% who had experienced a severe injecting related harm (Potter et al., 2025).
- Unregulated drug supply: Real and perceived[8] experiences of inconsistency (potency) and adulteration (e.g. corrosive chemical) lead to injury, and normalisation of expectations of harm taking drugs - much of which could be mitigated by safer information and services.

Additional populations – there are intersecting harms between drug use and those already experiencing inequitable health outcomes, which magnify risks and negative impacts. For example:

- Māori and Pasifika: Tāne and wāhine Māori are 2.16-times and 2.86-times (respectively) more likely to report past-year amphetamine use than non-Māori men and women (New Zealand Drug Foundation, 2025a). Māori bear disproportionate methamphetamine-related harm including premature death, criminal-justice penalties and intergenerational/whānau harm - disparities that are strongly influenced and perpetuated by systematic deprivation and structural racism (Crossin et al., 2023). Pasifika peoples also experience higher unmet treatment need and substance-related harm (Nosa et al., 2023).
- Prisoners: People who have been incarcerated have some of the highest reported lifetime methamphetamine use (56%) (Indig et al., 2017), substance use disorder or drug dependence (91%, up to 87-times the rate of the general population) (Bowman, 2016). Ex-prisoners in NZ are particularly vulnerable to death (by suicide) following release (Cunningham et al., 2022).

Alcohol harm

N lives in a rural region where vineyards and wine making are key attractions. N didn't consider herself a big drinker, in her younger years she would mostly drink socially with friends and there was the odd occasion where she would drink to the point of blacking out, although this was rare. After having children, N's opportunities for social drinking decreased. She found she had less

[7] Noting that crack cocaine is often inhaled, similar to methamphetamine, so the harms associated with this route of administration are comparable between the two drugs.

[8] Perceptions include community beliefs around 'sleepy meth' (where people taking methamphetamine feel very tired and lethargic), and this is particularly speculative around whether this is caused by adulteration of methamphetamine. NZ drug checking data have not yet corroborated e.g. fentanyl in methamphetamine, and stimulant adulteration with depressants remains generally isolated and speculative – described in a 2023 article by Aotearoa drug checking providers KnowYourStuffNZ, t., & New Zealand Needle Exchange Programme. (2023). What's going on with our methamphetamine? https://knowyourstuff.nz/whats-going-on-with-our-methamphetamine/.

spare time for herself, and having a few glasses of wine in the evening felt like the only way to carve out some 'me time' while also carrying out the bulk of the care for her family. N has been drinking this way for 10+ years, and often finds herself thinking about a wine after work. Two years ago, N had a breast cancer scare. Thankfully, scans and further testing have shown she does not have breast cancer, but the experience prompted N to consider reducing her alcohol consumption. N struggles with feeling that alcohol consumption is her personal responsibility, while also noticing that alcohol is everywhere in her community. Being surrounded by vineyards means that alcohol is a common gift, it is always a prize in the school raffle or fundraisers, and social engagements seem to always involve drinking. While some of N's friends have been supportive of her reducing drinking, others question why N is worried, given the negative result of her tests. As a result, N sometimes feels uncomfortable at social events where her friends are drinking, as she worries about drinking to fit in with her peers. N hasn't found a solution to the centrality of alcohol in her social life, missing social events to avoid pressure to drink is socially isolating and negatively impacts her mental health, but so too does attending social events and fending off questions or expectations about her drinking.

N thought she would feel more control over drinking in her private home life and decided to try not having alcohol in her home to curb the routine of an evening glass or two of wine. She has since realised just how easy it is for her to access alcohol. She often stops by the supermarket on her way home from work to pick up something for dinner, and walking past the illuminated alcohol aisle at the front of the store makes it easy to say "oh I'll just grab a bottle while I'm here, or while my favourite brand is on sale". As well as the supermarket selling alcohol, there are three liquor stores within a 10-minute drive of N's home. N also knows that food delivery apps recently started delivering alcohol, so she doesn't even need to leave the house to get it.

N also worries about her son's access to alcohol, having recently turned 18. He used to drink underage occasionally with friends, whose older siblings supplied them with alcohol. Now, he can drink in the local pubs which are often open late and have deals on shots. He sometimes tells N about himself or friends injuring themselves after leaving the pub intoxicated. She worries that he might be engaging in other antisocial behaviour he doesn't want to tell her about.

Key facts for NZ

- 74.9% of people aged 15+ in NZ had an alcohol drink in the past 12 months. As defined by an AUDIT score of 8 or higher, 22.2% of these people had a hazardous drinking pattern, and 23.5% drink 6 or more alcoholic drinks on one occasion at least monthly (Ministry of Ministry of Health, 2025a)
- Taking into account physical, psychological, social, and economic harms, alcohol is NZ's most harmful drug (Crossin et al., 2023)
- Alcohol harms are disproportionately experienced; Māori are twice as likely to die from an alcohol related cause as non-Māori (Chambers et al., 2024)
- 2018 data identify alcohol as a cause in over 900 deaths, 1,250 cancers, and 29,282 hospitalisations (Chambers et al., 2024) (NB. even though data from 2018, likely to still be relevant)

Key contributors to harm in this example

- Easy access to alcohol (retail outlets, trading hours, cost, food delivery apps)
- Increased outlet density in lower socioeconomic status (SES) areas
- Focus on personal responsibility for drinking when we live in alcohol saturated environments

- Power of ‘big alcohol’ in influencing policy outcomes, relatively low power of communities in comparison.
- Push back against local alcohol policies (LAPs)
- Alcohol marketing and promotion
- Social narratives of ‘mummy’s little helper’ / normalising alcohol to deal with motherhood

Takeaway messages: drug harm

- Drug use is relatively common in NZ
- Types of drug harm are diverse, and can impact a person who uses drugs, as well as others
- Drug policy can be a source of drug harm and/or worsen drug harm
- Harm is not experienced by all people equally, and intersectionality can lead to inequities in harm
- A public health approach to drugs incorporates treatment, harm reduction and drug policy

Understanding harm reduction

Introduction to harm reduction

Put simply, harm reduction means making desired activities safer. Every person enjoys activities that carry risks, which they will not choose to stop. Modern society produces sunscreens and education for people spending time outdoors; condoms are recommended to reduce the risks of sexually transmitted infections and unplanned pregnancy; seatbelts help to make vehicle crashes less impactful; and lifejackets support use of waterways and oceans with lessened risk of drowning. Offering communities and individuals the means to reduce the risks of chosen activities is commonplace, but sometimes called things like 'health and safety' rather than harm reduction. For activities that are certain to continue, we choose to implement reasonable measures that reduce risk.

This same risk reduction approach can be readily applied to drugs. Drug '*harm reduction*' refers to policies, programmes, and practices that minimise the negative health, social and legal impacts of drug use - while vitally centring freedom from judgment, coercion in decision-making, or discrimination in places where people seek wellbeing. In contrast to prohibitionist approaches, this strategy forgoes focussing on strict abstinence-only outcomes, instead focussing on supporting self-determination and '*any positive change*', and does not require cessation (or maintained abstinence) from drugs as a pre-condition of support (Harm Reduction International, 2024b).

In this report, harm reduction refers to both principles, as well as formal programmes and practices that reduce harm from drugs.

Frequently, policies and programmes intending to minimise drug harm (e.g. '*harm minimisation*', '*harm prevention*') are experienced and perceived by people who use drugs (PWUD) as inaccessible, absolutist, and often punitive (including incarceration) in both intent and practice. Programmes may fail to recognise that people may not be ready or willing to stop using substances at any given time, creating a tension between abstinence goals and the need to "meet people where they are at".

Existing healthcare services for PWUD are often delivered as categorically hierarchical exercises: distinguishing charitable '*helpers*' (particularly clinical staff) and PWUD with less power '*being helped*'. This dynamic promotes stigma of drug use and marginalisation of PWUD, removing autonomy as a precondition of support (Ahern et al., 2007; Lloyd, 2013).

Clinical services often incorporate (or occur in connection to) the contexts, settings and attitudes of prohibition. When help-seeking and treatment carry connotations of shame, 'moral deficiency' or punishment; are required or determined by judicial and specialist addiction services; or delivered by personnel carrying stigmatising beliefs, treatment success (or 'compliance') is frequently defined as nothing less than complete and maintained abstinence. At best, traditional '*harm minimisation*' approaches may advertise tolerance of ongoing substance use, but predominantly with the goal of eventual abstinence.

Harm reduction, in contrast, embodies kaupapa and service frameworks that significantly depart from the traditions of '*disease-recovery'* and '*harm minimisation*'. Harm reduction services seek to redress hierarchical and paternalistic forms of treatment, offering acceptance; mutual respect; and non-judgmental care that prioritises autonomy, dignity and safety in replacement of shameful framings and strict adherence to abstinence (Hawk et al., 2017). This approach is deliberately distinct: creating positive, non-coercive, ongoing relationships that genuinely support wellbeing, whatever an individual's self-determined goals may be. Therefore, harm reduction can be more acceptable to PWUD than abstinence.

Historical development

Harm reduction has evolved through distinct era, each shaped by specific evolving harms associated with drug use and from drug prohibition. A consistent pattern unites these era: communities bearing the brunt of drug-related harm, and developing practical responses (often with little or no governmental support), followed by what is often precarious institutional recognition and funding (Harm Reduction International, 2024a; Harris, 2021). Although a comprehensive history of harm reduction development is beyond the scope of this report, a selection of harm reduction developments and events are outlined below.

Through the late 19th century, cocaine- and opium-based tonics were widely used for both medicinal and recreational purposes; Bayer's introduction of heroin (diacetylmorphine) in 1898 as a purportedly 'non-addictive' alternative to morphine and codeine marked the beginning of a cycle that would repeat through the next century (Cicero et al., 2014). As the potent dependence-forming properties of heroin became clear, international regulatory responses followed: the Hague Opium (1912) (League of Nations, 1912) and Geneva Conventions (1925) (League of Nations, 1925) sought to limit narcotics to medical uses. Meanwhile, adulteration of street heroin became ubiquitous.

Not all responses were punitive. The UK's Rolleston Committee in 1926 licensed physicians to prescribe heroin to people with dependence on it, where maintenance enabled them to live '*a normal, useful life*' – an early harm reduction principle, even if not yet named as such (Departmental Committee on Morphine and Heroin Addiction, 1926). In NZ, Māori kaitiaki and wardens emerged to respond to alcohol-related harm in communities - an early form of Indigenous community-led risk reduction (Fleras, 1981).

The mid-20th century saw prohibition globalised through the UN Single Convention on Narcotic Drugs (1961), with national legislation following (including New Zealand's Misuse of Drugs Act in 1975) (New Zealand Government, 1975). The United States' declaration of a '*War on Drugs*' in

1971 intensified and globalised this enforcement-focused model (Csete et al., 2016; Nadelmann, 1989).

History: Opioid substitution and needle exchange

The emergence of HIV / acquired immuno-deficiency syndrome (AIDS) in the early 1980s transformed harm reduction from scattered local practices into a global public health imperative. HIV transmission through shared injecting equipment created a crisis that prohibition could not resolve, and actively worsened - by driving injecting underground, and making sterile equipment scarce and illegal (Moses et al., 1995). Community responses were swift, and in 1982, the Dutch 'Junkiebond'[9] began distributing sterile needles and syringes without state authorisation. In a more formal context, the Merseyside harm reduction model in Liverpool - encompassing both needle and syringe provision (NSP) and opioid substitution therapy (OST)[10] - was established (Marlatt, 1996).

Legal frameworks began to follow, with NSP legalised in the Netherlands (1984), Australia (1985), the United Kingdom (1986), and NZ (1987), making the New Zealand Needle Exchange Programme (NZNEP) one of the earliest legally established and government-funded NSPs globally (and the first state-sponsored nationwide needle exchange) (Harris, 2021; Sheridan et al., 2005). Identification of the hepatitis C virus (HCV) in people who inject drugs (1989-1990) reinforced the urgency of these responses (Noller & Bourke, 2020).

History: Safe consumption spaces and overdose prevention

The introduction of OxyContin by Purdue Pharma in 1996 - marketed in parallel to the advent of a novel practice principle: that pain should be treated as a "*fifth vital [clinical] sign*" (Campbell, 1996) - precipitated a pharmaceutical opioid overdose crisis, particularly in North America (Van Zee, 2009). When regulatory clampdowns on prescription 'pill mills' withdrew pharmaceutical opioids from millions of people who had developed dependence, many turned to illicit heroin (Kennedy-Hendricks et al., 2016). The entry of illicitly manufactured fentanyl into street opioid supply chains from approximately 2013 transformed an addiction crisis into a mass casualty event (Zoorob, 2019), and the United States and Canada declared public health emergencies in 2016-2017 (Hodge et al., 2017).

This era drove rapid expansion of novel harm reduction interventions: from early naloxone distribution by the Chicago Recovery Alliance beginning in 1996 (Maxwell et al., 2006); Vancouver's Downtown East-Side unsanctioned Safe Consumption Sites (SCS)[11] from 1995; followed later by Insite (the first legally sanctioned North American SCS) in 2003 (Doberstein, 2022); and the first Good Samaritan law (providing amnesty to people who witness overdose and phone emergency services) in the United States in 2007 (Moallef & Hayashi, 2021).

[9] An organisation of PWUD

[10] Also sometimes called 'opioid substitution treatment'; this is a medical treatment where medications such as methadone or buprenorphine are prescribed to people who are dependent on opioids, in order to prevent withdrawal and reduce cravings.

[11] These are sites where people bring pre-obtained drugs and use them in a place where there are other people present, so that assistance is available if adverse effects, including overdose, occur.

History: Drug Checking

As early as 1973, published literature discusses how scientific support is valuable - and warranted - for PWUD to more readily know what they're taking. The earliest drug checking services arose in the United States (Analysis Anonymous) (Brown & Malone, 1973) (Renfroe, 1986). This early venture was followed in Europe by the Drug Information and Monitoring System in the Netherlands - operating informally from 1989, and formalised by the Dutch Ministry of Health in 1992 (Brunt & Niesink, 2011).

Similar community and government-supported services emerged across Europe through the 1990s and 2000s (Belgium's Modus Vivendi, 1993; Spain's Energy Control, 1997; Austria's ChEckiT!; France's SINTES; Switzerland's Zurich service from 2001), later networked via the Trans-European Drug Information project (TEDI) (Brunt et al., 2017). In Canada, drug checking developed in direct response to the fentanyl-driven opioid-toxicity emergency: a 2016–17 fentanyl-strip pilot at Insite preceded the October 2017 launch of the British Columbia Centre for Substance Use (BCCSU) province-wide FTIR+ (Fourier-Transformed Infra-Red spectroscopy, and other technologies e.g. test-strip) programme. This model is now a reference for point-of-care drug checking internationally, including NZ (Chayama et al., 2024; Hutton, 2021; Tupper et al., 2018).

Drug checking in NZ developed through community initiative, with KnowYourStuffNZ founded in 2015 to provide reagent-based (colour-changing chemical) services at festivals, operating until 2020 without legal authorisation. Following advocacy and evidence-building the Misuse of Drugs Act was amended in 2020-2021 to provide a legal framework for drug checking services using a variety of tools, *High Alert* was founded as an 'Early Warning System' (public-facing) component to inform PWUD of harmful detected formats drugs. Multiple organisations have since received funding to deliver drug checking services across the country, including the NZNEP (Hutton, 2022).

History: Regulating supply

Safer supply programmes[12] emerged in Canada from approximately 2016, initially as unsanctioned community responses, before being formalised into medical models during the COVID-19 pandemic, when isolation made solitary drug use significantly more dangerous (Gomes et al., 2022; Karamouzian et al., 2023). The detection of novel synthetic opioids including benzimidazole 'nitazenes' (distinct from fentanyl) from 2019 (Walton et al., 2022), and the emergence of non-opioid adulterant sedatives (such as medetomidine and xylazine; '*tranq*') (Palamar & Krotulski, 2024), have further underscored the urgency of interventions that address supply toxicity more directly.

Principles of harm reduction

Harm reduction recognises that not all drug use is harmful, and that (especially for people with dependence or addiction) improved health outcomes can be had without requiring (or even eventually achieving) abstinence. Creating safe spaces and conversations not only shifts the

[12] Definitions of safer supply differ, but generally refers to the provision of a known drug (which maybe a prescription medication) as a safer alternative to the illegal drug supply, which is volatile, unknown, and toxic. The different types of safer supply programmes are discussed in the literature review, along with the pros and cons of different models.

locus of control in care towards its recipients, but uniquely creates opportunities for early interventions, and meaningful engagement with people who can be disconnected from healthcare services.

Harm reduction is pragmatic (Hawk et al., 2017). As distinct from disease-recovery models, the framework recognises that many people are not ready or able to stop using drugs at a given time and seeks to reduce risks within that (more immediately accessible) framing. Without either condoning or condemning drug use, harm reduction acknowledges practical realities: that many people will continue to use drugs whatever the legal status, physiological risks, or other associated harms. 'Radical acceptance' affords the most authentic model for '*meeting people where they are*' without invoking punitive attitudes that (paradoxically) tend to worsen outcomes (Ahern et al., 2007; Rhodes, 2009). Building and preserving rapport enables positive change, without preconditions that may be unacceptable or unachievable for many who continue to use drugs. The spectrum of '*any positive change*' - including abstinence for those who want it - offers earlier opportunities for incremental and categorical success than the outcomes of recovery and 'sobriety' (Harm Reduction International, 2024b; Hawk et al., 2017).

Culturally, harm reduction is intended as a community-led model of care, but can be supported by governments within a public health approach to drugs. Mutual aid within and between marginalised communities affords cultural understanding and safety, reducing stigma (Harris, 2021). Solidarity with people who use drugs - '*aroha with no strings attached*' - provides the foundation for sustained service engagement, and for behavioural changes that individuals can more readily make if, as, and when they choose.

Harm reduction interventions are frequently delivered (and / or their development informed) by community members with lived and living experience of drug use ('peers'), operationalising the self-determination principle of "*nothing about us without us"* (Harris & Luongo, 2021). Peer-led services are somewhat intrinsically trauma-informed, and knowledge of PWUD perspectives and experiences - particularly regarding stigma and privacy needs - contrast with medical-hierarchical models to yield more relatable and personable opportunities for brief interventions (Hawk et al., 2017; Hay et al., 2017). Representation of PWUD in service planning and delivery demonstrates and creates social and cultural safety, creating sustained opportunities for support that are otherwise often foreclosed by stigma and shame. This experiential insight enables authenticity and trust in therapeutic relationships, particularly for people with distrust and negative experiences of traditional health services.

Harm reduction is concerned with justice. Drug prohibition reinforces structural discrimination in societies, tending to apply disproportionately toward people who are not pākehā/white; experiencing poverty; or otherwise politically marginalised (Dertadian, 2024). In NZ this pattern significantly criminalises Māori over non-Māori PWUD (Crossin et al., 2023; Reid et al., 2019). Against this, harm reduction aims to restore self-determination, autonomy around modalities of care, and the right to equitable health outcomes as matters of justice and human rights, seeking to remediate disparities through culturally appropriate service delivery for those most marginalised by judicial and medicalised approaches (McLachlan & Waitoki, 2024). The specific relationship between Indigenous peoples, prohibition, and harm reduction is addressed in further detail later in this section.

Harm reduction is of particular value in terms of equity in healthcare for people with divergent neurotypes (e.g. ADHD, ASD). A 2024 Drug Foundation report described experiences of neurodivergence and drugs , finding half the participants who had lived or living experience of drug use were diagnosed with ADHD; all experienced difficulty accessing healthcare and experienced significant untreated symptoms, leading many to 'self-medicate' as a coping strategy (Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation, 2024b)

Perhaps most Importantly, harm reduction insists upon empathy, respect, dignity for PWUD in therapeutic relationships (Hawk et al., 2017). PWUD are near-universally familiar with the framing of drug use as intrinsically negative, criminal, or morally deficient (Ahern et al., 2007; Lloyd, 2013). Harm reduction counters this framing by centring destigmatisation, safe conversations around drug use, the preferences and experiences of PWUD in operational decision-making, and ultimately shifting the locus of control in reducing drug harm toward those with the greatest understanding and 'skin in the game': affected individuals and communities (Harris & Luongo, 2021; Hughes et al., 2022).

Indigenous Harm Reduction

Despite the various successes of harm reduction, many mainstream approaches have been criticised for not accommodating Indigenous needs or preferences related to service delivery and wellbeing (Canadian Aboriginal Aids Network & Interagency Coalition on AIDS and Development, 2019). A general lack of culturally safe practices, in addition to structural, institutional, and interpersonal racism across healthcare and harm reduction services, are known to limit access and retention within services and the quality of care received (Godkhindi et al., 2022; Lavalley et al., 2020; Pegler et al., 2025). Furthermore, harm reduction is often conceptualised and practiced in a 'value-neutral', incremental, and individual health-behaviour focussed way, which deviates from the broader, emancipatory roots of harm reduction, does not align with Indigenous understandings of collective wellbeing practice, and does not address systemic issues that often give rise to drug-related harm in the first place (Canadian Aboriginal Aids Network & Interagency Coalition on AIDS and Development, 2019). In an ongoing settler-colonial context, the claim of 'value-neutrality' in healthcare often functions as a mask for the status quo, effectively ignoring the historical and political determinants of Indigenous health.

For Indigenous peoples, harm must be understood and addressed within a broader frame than that mainstream Western harm reduction is generally situated. This must include concepts important to Indigenous people such as land, spirituality, cultural practices and norms, history, and broader community members (McLachlan & Waitoki, 2024). Indeed, an emphasis on holistic care and community involvement has long been understood as critical for enhancing Indigenous wellbeing. Accordingly, Indigenous harm reduction should be grounded in Indigenous understandings of health and wellbeing, cultural knowledge, relationality, and utilise Indigenous pedagogies. Relatedly, it is important that Indigenous leadership be integrated and empowered within healthcare and harm reduction systems so that these may be positively influenced by experiential knowledge of racialisation, helping to address longstanding mistrust of health systems and centre equity and social justice (Hughes et al., 2022).

Importantly, processes of colonisation have been, and continue to be, major drivers of health and socioeconomic inequality, racism, trauma, incarceration, and problematic drug use for Indigenous peoples (Harm Reduction International, 2024b; Paradies, 2016; Reid et al., 2019). Indigenous peoples have faced, and continue to face, significant land displacement and

interpersonal violence, in addition to persecution for traditional or cultural use of substances which have been internationally criminalised (Burger & Kapron, 2017). Various scholars have highlighted the coloniality of prohibition-based drug policy, which enables settler state governments to impose control and enact violence upon minority Indigenous populations that continue to be systematically oppressed (Dertadian, 2024). Resultingly, issues such as the ongoing drug poisoning crisis in North America are experienced and understood by some Indigenous people who use drugs as a modern form of genocide rooted in coloniality and resultant inequities (Lavalley et al., 2024). As such, Indigenous harm reduction philosophy fundamentally calls for the end of prohibition and for ongoing decolonisation of drug policy (Daniels et al., 2021). Decolonisation (or indigenisation) of drug harm reduction is also required, as harm reduction can itself be viewed as a colonial construction within postcolonial states (Lasco, 2022). Similarly, reductionist harm reduction strategies that fail to address systemic issues arising in the context of colonisation are unlikely to be transformational for Indigenous wellbeing (McLachlan & Waitoki, 2024). Ultimately, it is widely argued that fundamental change across legal and social systems and practices must be carried out to achieve health equity, Indigenous sovereignty, and the full realisation of human rights. All of these outcomes are required in the NZ context by He Whakaputanga o te Rangatiratanga o Nu Tireni, Te Tiriti o Waitangi, and the United Nations Declaration of the Rights of Indigenous Peoples.

Examples of Harm Reduction programmes and services

As the landscapes of risk and harm from alcohol and other drugs have evolved, various types of harm reduction services have been developed to meet new challenges. Frequently beginning as unauthorised community activities, many have grown to receive formal acceptance and funding by states - particularly where programmes have become supported by medicalisation and the involvement of clinicians (Jeziorska et al., 2025). In this report, harm reduction activities are broadly categorised into the following branches, each examined in detail in the Literature Review.

1. **Regulate the supply**: Agonist therapies and safe(r) supply. By providing pharmaceutical or quality-assured alternatives to illicit substances, these interventions reduce exposure to a contaminated or unpredictable supply for people who are dependent or at high-risk.

2. **Prevent infection and injury**: Sterile needle and syringe provision (NSP) and safer smoking kit provision. These programmes aim to reduce blood-borne virus (BBV) transmission, injection site injuries and infections associated with shared or re-used equipment, while also increasing contact with community and referral to support services.

3. **Reverse poisoning**: Naloxone (and similar reversal agents). Community and clinical distribution of opioid antagonists enables first-responder and bystander-led reversal of overdose, restoring breathing long enough for further care

4. **Know what you're taking**: Drug checking services and early warning systems. Chemical analysis of obtained substances informs decision-making by the person using them, and can support timely public alerts about unexpectedly harmful substances in circulation.

5. **Don't use alone**: Supervised consumption and overdose prevention sites. Witnessed consumption - whether at a dedicated site or via phone-based services - ensures that a trained responder is present or available to respond in the event of overdose.

6. **Provide amnesty or remove criminal penalties**: Good Samaritan laws and supportive housing that does not require abstinence. These legal and structural protections reduce the

fear of prosecution (for bystanders) or of eviction (for tenants) that can otherwise deter people from seeking help or stable accommodation. Decriminalisation removes criminal penalties for personal possession or use.

Challenges to harm reduction

Harm reduction is not without genuine challenges. The most persistent critique is conceptual – frequently perceived as '*encouraging drug use*' or '*delaying recovery*' – perceptions which the available evidence does not generally support (Tse et al., 2022), but that still carry significant political and moral weight.

Conflicts can be found in the contrast between harm reduction approaches and more traditional clinical, community and cultural values around abstinence. Navigating these tensions requires genuine partnership between, and willingness to share decision-making power with, people of both of lived/living experience, and those with clinical and legislative authority.

When harm reduction services do gain authorisation and institutional funding, there is an ongoing risk of 'sanitisation', where the 'radical', community-driven ethos that made services effective is replaced by institutional priorities (Lasco, 2022). Metrics can displace relationships, and compliance can become required before care is offered. Solidarity is replaced by 'risk management,' and peer leadership is supplanted by credentialled professionals or 'charitable philanthropists' who lack lived experience (Godkhindi et al., 2022). This tension between authenticity and institutionalisation is not easily resolved, and requires ongoing vigilance by communities and funders alike.

Peer-led services may also bring complexity. Peers bring lived and ongoing experiences of navigating harm, collective grief, systemic abuse and neglect resulting in trauma and complex coping strategies. Adequate training, supervision, fair pay, and access to clinical support for peer workers are essential but frequently underfunded and there are significant challenges faced when aiming to value, train, and retain a peer workforce (Castedo de Martell et al., 2025).

Finally, harm reduction can be genuinely difficult to evaluate. Reviews describe evidence for the effectiveness of harm reduction interventions as limited (Palmateer et al., 2010) or even categorically unethical to measure by randomised-controlled trial (RCTs) where the benefits (i.e. prevention of mortality in safe consumption sites) are already so clearly evident (Reddon et al., 2020). While RCTs are considered the 'gold standard', this is within a western and medicalised paradigm, and may not represent the most appropriate or 'best' level of evidence in a harm reduction context.

Evidence bases are further constrained by the ethical and practical difficulties of randomised controlled trials in criminalised populations; reliance on proxy measures for indirect public health impacts; and by the privacy and anonymity concerns of populations whose potential identification through participation in research may carry legal consequences. Historical grievances between PWUD and researchers, including extractive and stigmatising research practices, create justified wariness toward data collection. Much of the evidence base derives from observational programme evaluations, natural experiments and time series, rather than interventional designs - particularly because services have often developed and operated in advance of their legalisation. These limitations can critically reflect the conditions under which harm reduction operates - rather than evidence of their ineffectiveness.

Despite NZ's achievements, harm reduction has remained constrained by the overarching prohibition framework of the Misuse of Drugs Act (1975). Supervised consumption sites cannot operate legally; distribution of safer smoking and snorting supplies is unlawful for any service provider (including the NZNEP), and while naloxone availability has improved in 2024 (to make ampoules available from needle exchanges without prescription), nasal sprays remain unfunded and less available than in countries experiencing more visible opioid crises (PHARMAC, 2024; Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation, 2024a).

Within NZ's national drug strategies, harm reduction has historically been positioned as a subpoint under '*Problem Limitation*' and '*Demand Reduction*' (Ministry of Health, 2015), embedded within a generally recovery and abstinence-oriented treatment framework, rather than recognised as a distinct strategic pillar with its own principles and priorities. Only in March 2026 has harm reduction (and early warning) begun to take a more prominent place as a first-line strategy in policy (Ministry of Health, 2026). NZ harm reduction services have seen no meaningful increases in funding in many cases, or contraction and restructure in others. In Canada, as of 2023-2026 funding and licenses to deliver harm reduction services have also contracted, shuttering programmes, particularly safer supply and safe consumption spaces (Magnuson et al., 2025).

Harm reduction looks different in a regulated drug supply, than in a 'black market' because some of the key harms (e.g. unknown substances, or criminalisation) are removed, and there are more opportunities to effectively regulate the supply of a drug, which are difficult in a black market. Alcohol, while associated with substantial health and social harms, operates under fundamentally different regulatory frameworks compared to 'other drugs'. In NZ, alcohol is regulated under the Sale and Supply of Alcohol Act (2012) (Nepal et al., 2020; Sanchez-Ramirez & Voaklander, 2018; World Health Organization, 2025), enabling interventions (e.g. density and trading hour restrictions, advertising controls, on-licence premises) that are structurally unavailable for prohibited substances (Ford et al., 2018; Randerson et al., 2018). Where 'harm minimisation' or 'harm reduction' language is employed in alcohol policy discourse, the legal and practical applications and outcomes differ substantially (McCambridge et al., 2014). It is important to recognise when the term 'harm reduction' is being used inappropriately, particularly if co-opted by harmful commodity industries. Harm reduction principles should be present if harm reduction language is used. Harm reduction can still apply to legally regulated drugs, particularly in relation to programmes where abstinence is not the goal. For example, managed alcohol programmes support harm reduction without requiring abstinence from alcohol.

Takeaway messages: harm reduction

- Harm reduction principles are programmes are intended to reduce the potential harms of drug use, without requiring abstinence
- Harm reduction has primarily arisen as a response to drug prohibition, and is led from the affected community
- Harm reduction emphasises the value of lived experience and upholds respect and care for people who use drugs
- Indigenous harm reduction recognises that colonisation and racism are drivers of drug harm, and creates a focus on community-led solutions

Literature review

Search methods and scope

This review includes international and NZ-specific literature. It is not restricted to academic papers, but also includes grey literature such as evaluation reports. Only evidence that was available in English language was included, and the focus was on studies from 2010 onwards. However, earlier studies were included if they included key findings of relevance.

This can be read alongside an annotated bibliography table, which includes details of all studies cited below. This includes a column on lived experience involvement; however, many studies were silent on this point, and may have included lived experience, but this was not documented. Understanding how and where lived experience was engaged with and incorporated throughout studies was generally poorly explained, and presents a significant knowledge gap, as well as an opportunity for improvement.

The scope of the searching was agreed in consultation with Te Hiringa Mahara, and did not include interventions targeted at prevention of uptake, any studies conducted in settings where treatment is coercive or forced, or studies related to nicotine products (including smoking and vaping). Abstinence was agreed as a potential outcome of interest, providing it was not forced.

Searches were conducted non-systematically, and academic databases were primarily used, including Embase, Ovid, Medline, PsycInfo, and PubMed. Key words were used for each intervention, considering synonyms and international terminology (e.g. needle and syringe programmes as compared to needle exchange programmes). Key authors were also used to identify studies, as well as strategies such as forwards and reverse citation searching. Searches were organised around intervention types, noting that some studies included multiple interventions; de-duplication occurred after the initial searching.

Where possible the focus was on including the highest level of evidence, which in many cases was systematic reviews and meta-analyses. This was particularly the case for treatment, as there are many randomised control trials (RCTs) of various interventions, and is a substantial body of literature in its own right. Therefore, this review focussed on Cochrane reviews for treatment interventions. Where systematic reviews were the main focus, any NZ specific studies within that review are highlighted (but not all individual studies within the systematic review or meta-analysis).

This literature review should not be read as a systematic list of all harm reduction intervention studies, rather a curated bibliography that was developed to meet the aims of this project.

The GRADE tool was used to appraise literature and rate the certainty of the evidence (Goldet & Howick, 2013). This is a systematic approach to evaluating literature certainty and is commonly used for healthcare evidence, particularly in relation to Cochrane reviews. There are many different tools available for critical appraisal, but selecting one for this review had inherent limitations as there were multiple different study types and methods in the literature, and tools often focus on a single method. However, while all tools are imperfect, the intent was to provide a structured means of appraising the body of evidence.

When using GRADE, the rating is applied to each outcome within a study, which presents challenges when outcomes are less clearly defined or there are multiple outcomes included. Therefore, the approach used for this review was to apply a rating to the overall study, not all

outcomes within the study. The GRADE tool begins with all outcomes being attributed a starting rating, which can then be up- or down-graded. Possible ratings are; High, Moderate, Low, Very Low. All RCTs begin with a baseline rating of High but can be downgraded. All non-RCTs begin with a baseline rating of Low, but can be up- or down-graded.

Potential reasons for downgrading are:

- Risk of bias
- Inconsistency (of results)
- Indirectness (applicability of evidence to outcome)
- Imprecision (of the effect size)
- Publication bias (of the included studies)

Studies can be downgraded more than one level, if required.

Potential reasons for upgrading are:

- Large magnitude of effect (strong association within observational studies)
- Dose Response (presence of a gradient)
- Effect of confounding factors

Studies were appraised using GRADE by a single rater, but could be flagged for review by another team member if unsure.

These reasons for up- or down-grading are weighted towards quantitative and controlled studies, which makes them less applicable to community engagement studies or those that have used qualitative methods. Therefore, in the sections below, narrative assessment from the study team is integrated.

Most importantly, a study receiving a Low or Very Low study should not be interpreted as 'bad', rather its wider applicability should be considered as more uncertain.

The decision was made to not apply the GRADE tool to the indigenous harm reduction studies, due to concerns about applying a Western tool, which is strongly embedded in quantitative and health system standards of evidence, to indigenous knowledge. The rationale for this is discussed further in the Indigenous harm reduction section of the literature review. Studies that included lived experience voice are also highlighted as having benefit and quality in a way that could not be recognised by the GRADE rating, while noting that it is possible that studies had engaged with lived experience throughout the research but not documented this in the published article.

Literature review results

The results of the literature review are consistent with a public health approach to drugs, which includes regulation and treatment, as well as harm reduction. Currently in NZ, only alcohol is legally regulated, therefore this is the only drug discussed in that section. The sections are:

- Regulating alcohol supply
- Harm reduction:
    - As integrated into treatment
    - Different types of intervention
- Legal models to support harm reduction
- Indigenous harm reduction

All studies within these sections are also in the annotated bibliography. Discussion and synthesis is presented alongside the studies, rather than in a separate conclusions section.

We acknowledge that categorising interventions can present challenges, and that the most effective interventions are sometimes programmes including multiple complementary interventions. The annotated bibliography contains details of where programmes contained more than one intervention.

This review is not intended to position treatment as distinct from harm reduction, or to discuss whether it is better to try to reduce supply of a drug or demand for that drug; rather this is intended as a review of the types of approaches that are available to reduce harm, under a public health approach to drugs. These approaches can and should work together.

Regulating the supply of alcohol to reduce harm

Alcohol is the only drug of those included in this review which is legal in NZ and therefore the only drug (within this review's scope) subject to supply regulation in a legal market. Harm reduction through alcohol regulation includes approaches such as minimum unit pricing, minimum purchasing age, trading hours, and outlet density. Included are 20 papers relating to alcohol supply reduction. Of these, seven were international, six were international and included NZ, and seven were NZ specific.

International findings strongly support the effectiveness of minimum unit pricing (MUP) as a harm reduction intervention (Boniface et al., 2017; Fitzgerald et al., 2024; Kilian et al., 2023; Maharaj et al., 2023; Taylor et al., 2018). Increases to MUP were associated with reductions in consumption (Boniface et al., 2017; Fitzgerald et al., 2024; Kilian et al., 2023), violence in night time precincts (Taylor et al., 2018), alcohol related morbidity and mortality (Boniface et al., 2017), and alcohol related hospitalisation (Maharaj et al., 2023). An NZ specific study found increasing MUP would likely reduce consumption among those who buy cheap alcohol (who have higher consumption rates) and prevent switching to a cheaper alternative (Falkner et al., 2015). They also reported concerns about stealing, or use of non-beverage alcohol in response to rising MUP were unsubstantiated (ibid).

In 1999, New Zealand's minimum purchase age (MPA) for alcohol was lowered from 20 years to 18 years. Gruenewald et al. (2015) found the lowered MPA was associated with an increase in frequent drinking at pubs and nightclubs among 18-19 year-olds and increased consumption in home drinking settings. At home drinking frequency among 16-17 year-olds also increased following the lowered MPA (ibid). Kypri et al. (2014) explored the impact of the 1999 MPA reduction on weekend assaults resulting in hospitalisation among young people aged 15-17 and 18-19. A subsequent study explored the same outcomes among Māori rangatahi (Kypri et al., 2015). For all young people, lowering the MPA was associated with increased weekend assaults resulting in hospitalisation. There was no evidence of an association between the same among Māori youth, although the author suggests this is likely due to lack of statistical power. The association of MPA with alcohol consumption is also internationally supported (Guindon et al., 2025).

Trading hours are a further way to restrict alcohol access, thereby promoting harm reduction. An international review of 26 countries found reduced trading hours had a direct effect on prevention of injuries, alcohol-related hospitalisations, homicides and crime (Sanchez-Ramirez & Voaklander, 2018). There is some evidence for reduced prevalence of assault or violence and motor vehicle mortality, although this is less well-supported (ibid). The evidence for trading hours reducing harm is supported by several international reviews (Fitzgerald et al., 2024; Taylor et al.,

2018; Wilkinson et al., 2016). Evidence for New Zealand is more limited; findings from Randerson 2018 suggest the impact of the Sale and Supply of Alcohol Act 2012 (SSAA) on the alcohol environment was minimal. Trading hours were identified as the only aspect of the SSAA which were successfully implemented between 2013-15 and served to slightly reduce alcohol availability in city centres (ibid).

The final approach to alcohol supply reduction is outlet density, which is strongly associated with markers of alcohol-related harm. Internationally, increased outlet density is strongly associated with increased crime and violence (Taylor et al., 2018). Evidence from New Zealand similarly links outlet density with police attended events (Cameron et al., 2012) and violence (Cameron et al., 2016). Less strongly, New Zealand evidence suggests a relationship between outlet density and child and adolescent harms (Baldwin et al., 2022).

There is strong evidence and consensus amongst public health professionals, community organisations[13], and healthcare workers about 'what works' to reduce alcohol-related harm. This advice has remained broadly consistent over time, and with the World Health Organization 'best buys' (World Health Organization, 2018). Importantly, there is also public support for stronger interventions to reduce alcohol-related harm in NZ (Peniamina et al., 2023; Shields et al., 2025). That these evidence-based interventions have not been implemented in NZ are suggestive of wider issues related to political processes and other implementation barriers.

Takeaway messages: alcohol regulation

- The alcohol environment is a key contributor to harm, and influences consumption patterns across the community
- The World Health Organization recommends that public health policy for alcohol should aim to reduce availability, increase the price of alcohol, and reduce marketing
- Evidence-based ways to reduce harm from alcohol are available to NZ, but have not yet been implemented.

Drug treatment approaches

Drug treatment approaches generally consist of psychosocial or pharmacological approaches, or a combination of both. Treatment is generally directed towards those experiencing substance dependence or severe harms, and have a goal of reducing demand for drugs, often with an endpoint of abstinence as the 'desired outcome'. This can fit within a public health approach to drugs, providing that this goal is not coerced or forced. Psychosocial treatment may include cognitive behavioural therapy, motivational enhancement therapy, skills training, contingency management, and integrated models of care, among others. Pharmacological treatments use pharmaceutical drugs to target brain receptors affected by addiction, and most fall under three overarching classes: (1) full agonist, (2) partial agonist, and (3) antagonist medications. Full agonists act as drug replacements and are used to maintain recovery. Partial agonists are similar and sometimes used for detoxification as the brain receptor is not stimulated to the same level. In contrast, antagonist medications occupy opioid receptors, preventing agonists from binding, and effectively blocking the 'reward' of drug use.

Evidence highlights the importance of combining pharmacological and psychosocial approaches to maximise positive outcomes (Mateu-Molla et al., 2025). Sociodemographic factors including

[13] Particularly referring to the evidence reviews and position statements of both Alcohol Healthwatch and Health Coalition Aotearoa.

age, sex, and ethnicity may impact the efficacy of pharmacological treatments, which must be tailored to individuals for the best outcomes (ibid). Harm reduction can be integrated within drug treatment settings, particularly when outcomes are developed collaboratively with clients and PWUD. This section focuses on what works to reduce harm within a drug treatment context. There are however challenges in interpreting this literature, particularly because treatment focussed literature typically focusses abstinence as the primary outcome measure and the evidence base is built upon RCTs. In contrast, harm reduction has a wider range of outcome measures beyond abstinence, and study designs include qualitative studies and surveys reflective of this broader view.

Summary of treatment evidence

This evidence base primarily comes from Cochrane reviews, which summarise RCTs to provide a conclusion about treatment efficacy. Much of this literature, therefore, comes from outside of NZ. For readers interested in treatment efficacy, the studies listed below can be referred to in the annotated bibliography and are summarised in the table below. For many of these studies, treatment efficacy is uncertain, and varies across population groups and outcome measures. It is also important to consider dropout rates for all treatment options and how long outcomes are measured and retained post-treatment.

Table 1 – summary of Cochrane reviews of treatment efficacy

Drug type	Type of intervention	Cochrane review references
Alcohol	Psychosocial	Hunt et al. (2019)
		(Klimas et al., 2018)
		McGovern et al. (2022)
	Pharmacological	Mellentin et al. (2023)
		Leone et al. (2010)
		(Amato, Minozzi, & Davoli, 2011)
		Mateu-Molla et al. (2025)
	Combination	(Minozzi et al., 2025).
Opioids	Pharmacological	Rahimi-Movaghar et al. (2013)
		(Minozzi et al., 2011)
		(Minozzi et al., 2014b)
		(Minozzi et al., 2020)
		(Kornør et al., 2025)
		Amato et al. (2013)
		(Rahimi-Movaghar et al., 2018)
		(Minozzi et al., 2014a)
		(Perry et al., 2025)
		Pani et al. (2011)
		(Gowing et al., 2011)
	Combination	(Amato, Minozzi, et al., 2011a, 2011b)
Cannabis	Pharmacological	(Bahji et al., 2021; Sharma et al., 2022)
		(Vuilleumier et al., 2022)
		(Preto et al., 2023)
	Combination	Gates et al. (2016)

		(Montgomery et al., 2017)
		Ghafouri et al. (2024)
Cocaine	Pharmacological	(Traccis et al., 2024)
		(Minozzi, Amato, et al., 2015; Minozzi, Cinquini, et al., 2015)
		(Castells et al., 2016)
		(Pani et al., 2011)
		Indave et al. (2016)
Benzodiazepines	Pharmacological	(Baandrup et al., 2018)
	Combination	(Darker et al., 2015)
Non-specific SUD treatment	Pharmacological	Temmingh et al. (2018)
		(Mellentin et al., 2023)
		(Scott et al., 2022)
		(Perry et al., 2015)
	Psychosocial	Hunt et al. (2019)
		Hides et al. (2019)
		(Roberts et al., 2016)
		(Schwenker et al., 2023)
		(Goldberg et al., 2021)
	Combination	(Ghetti et al., 2022)
		(Perry et al., 2019)

For treatment, overall, strongest benefits appear to be found in combination pharmacological and psychosocial interventions. The strongest body of evidence for alcohol treatment was combination psychosocial (CBT) and pharmacological (naltrexone) (Minozzi et al., 2025). For opioids, maintenance was better than detoxification for retention in treatment, and self-reported illicit opioid use. Most evidence for pharmacological treatments were in relation to naltrexone, buprenorphine, and methadone. Combination pharmacological and psychological interventions had positive effects on completion of treatment, use of opioids, and number of participants abstinent at follow-up (Amato, Minozzi, et al., 2011a, 2011b). Cannabis findings were very mixed, with no conclusive evidence for any particular treatment. Some positive evidence for N-Acetyl Cysteine (NAC) reducing craving strength and frequency, and promoting cannabis cessation, but needs better study design and more evidence (Sharma et al 2022).

While pharmacological evidence develops, it is important that age and stage appropriate / individualised psychological treatment continue to be utilised and improved (Ghafouri et al., 2024). Most interventions for cocaine use disorder showed no difference compared to placebo (Minozzi, Amato, et al., 2015; Minozzi, Cinquini, et al., 2015; Traccis et al., 2024). Some evidence exists for psychostimulants, but evidence is of low quality so needs further investigation (Castells et al., 2016). Similarly, for benzodiazepines, both included studies concluded existing evidence was poor quality, and more research is needed. (Baandrup et al., 2018; Darker et al., 2015). Mixed substance studies found oxytocin may reduce withdrawal symptoms and cue induced cravings, but needs stronger evidence (Mellentin et al., 2023). Individual-based psychological therapies with a trauma-focused component plus adjunctive SUD intervention were found to be more effective than treatment as usual but needs more evidence (Roberts et al., 2016).

Significant variation in intervention design, comparisons, outcome measures and study populations make it difficult to draw strong conclusions about the efficacy of a treatment, this

was a common theme across all drugs and treatment approaches discussed. There were a very small number of studies conducted in NZ, and while this does not mean the treatments would not be effective it does somewhat limit the applicability. A key consideration for NZ would be treatment acceptability and accessibility, and ensuring equitable access to evidence-based and culturally appropriate care. It is important to note that a NZ-specific study of methamphetamine treatment outcomes is currently underway, led by David Newcombe, and that further evidence arising from this study will be highly relevant and valuable (Newcombe et al., 2025).

Treatment needs to be tailored and implemented in the NZ context, where the majority of treatment is publicly funded and provided within the community (Te Pou, 2025). Services include counselling, access to OST, peer support services, outpatient programmes, and residential 'detoxification' services[14]. Withdrawal management can also be provided in specialised hospital units when required.

Integrated care

Rather than being a specific intervention, this section discusses case studies and best practice around the integration of harm reduction within other healthcare settings, including treatment. This section also includes discussion of how harm reduction outcomes, goals, and principles can be integrated into care. Much of this literature is based on case studies or expert opinion, rather than systematic reviews, and has a greater focus on what enables harm reduction to be integrated, and what best-practice can look like.

While this article is older, Denning presents a summary of strategies that can be used for implementing harm reduction within treatment settings, which can still have relevance today (Denning, 2001). Building on expert clinical opinion, the author advocates for integrating harm reduction goals within treatment and having more flexible approaches to supporting client needs (Denning, 2001). These implementation strategies were further expanded by Taylor et al., who outline ways in which harm reduction principles can incorporated into opioid use disorder treatment in order to promote a non-stigmatising programme and culture, and meet client needs (Taylor et al., 2021). Strategies include naloxone provision and providing advice on overdose prevention strategies as well as providing ‘treatment on demand’ in order to prioritise patient choice (Taylor et al., 2021).

There are other case studies and narrative reviews from Australia and the US (Boyle et al., 2025; Chang et al., 2023; Futterman et al., 2004; Ganetsky et al., 2025; Krawczyk et al., 2022; Laitman et al., 2014; Madden et al., 2021). What is common to all of these examples is the commitment to providing wraparound care and services, to create more equitable and patient-centred pathways, that promote long-term health and wellbeing. While some studies have a longer-term outcome that aims to promote retention in treatment, so that individuals, may, at some point seek abstinence-focussed treatment, they still emphasise the core principles of harm reduction in terms of meeting patients where they are at now, and providing unconditional treatment and care. A particularly useful case study to consider is that of an integrated treatment and harm reduction service in Barcelona (Parés-Badell et al., 2020). Whereas it can commonly be perceived that co-located treatment and harm reduction services may struggle with ‘competing’

[14] https://www.healthnz.govt.nz/health-topics/mental-health/alcohol-and-drug-addiction/alcohol-and-drug-services/community-treatment-services

outcomes, this case study emphasises that in fact, this integration can maximise access to both types of service (Parés-Badell et al., 2020).

Hawk et al. extend this work by explicitly developing six principles for effective integration of harm reduction into healthcare settings, by conducting qualitative interviews with clients of an HIV clinic (Hawk et al., 2017). The principles are; humanism, pragmatism, individualism, autonomy, incrementalism, and accountability without termination. For each, the authors present a definition, a description of how healthcare providers can deliver interventions informed by the principle, and examples of how each principle may be applied in the healthcare setting (Hawk et al., 2017). While developed in the US it is plausible to see how these principles could apply in an NZ healthcare setting, but may require amendment and additional consideration to ensure consistency with Te Tiriti. It is also important to note that this published work is what the RACP guidance on achieving a health-focussed approach to drugs[15] is built from for Australia and NZ; while not dismissing or undervaluing the work done in the US, it does highlight that the guidance for NZ physicians is built off US client knowledge and experience. Further work on these integration principles specific to NZ would be highly beneficial.

Wilson et al. co-designed a harm reduction intervention in the US with people who use drugs, who are then hospitalised (Wilson et al., 2025), recognising that hospitals can be seen as 'hostile environments' by people who use drugs. This case study provides a strong method and key principles that could be used to support similar projects in other settings, including NZ.

Beyond designing interventions or discussing principles for effective interventions, there is also a body of evidence that discusses how success is defined (Dale-Perera, 2017; Perri et al., 2026; van der Sterren et al., 2023). The European evidence review presents a potentially new paradigm, in which single goals such as 'recovery' or 'abstinence' or 'harm reduction' are insufficient to meet diverse client needs, though does not necessarily provide a clear framework for what the new goals should be (Dale-Perera, 2017). In contrast, (Perri et al., 2026) do present co-designed outcomes and success indicators from Canada, where clients emphasised the importance of including social measures including self-care and wellbeing in addition to health outcomes. The global scoping review conducted by Anke van der Sterren and colleagues is particularly relevant to the purpose of this review, in that it discusses the extent to which people who use drugs are involved in the development of outcome measures. They conclude that even when included, this can be at a relatively low level, and furthermore, only four measures were developed specifically for use in harm reduction settings (van der Sterren et al., 2023). This work presents an important knowledge gap and opportunity for improvement, by co-designing indicators or outcome measures specifically for harm reduction services, or for harm reduction within other healthcare services, by fulsome and detailed participation of people who use drugs.

Recovery capital

Recovery capital describes the factors that will help a person in their recovery, and is considered an important part of drug treatment[16] (Best & Hennessy, 2022). These factors might include social networks, relationships, or community, as well as determinants like transport, housing, or employment. 'Negative recovery capital' are the factors that might constrain or hamper an

[15] Available from: https://www.racp.edu.au/docs/default-source/advocacy-library/racp-position-statement-achieving-a-health-focused-approach-to-drug-policy-in-australia-and-aotearoa-new-zealand.pdf?sfvrsn=7f8a01a_20

[16] For a NZ definition of recovery capital, see https://kaitiaki.org.nz/article/recovery-capital-in-addiction-treatment-what-is-it-and-why-is-it-important/

individual's recovery. Conceptually, recovery capital is consistent with a harm reduction approach, in that it recognises the needs of the individual and their personal circumstances, and can include a discussion of their long-term goals and the supports needed to achieve these. Qualitative interviews with 30 people in recovery found that the need to manage (eliminate or reduce) negative recovery capital needed to occur alongside the creation of recovery capital, particularly in the early stages of recovery (Patton et al., 2022). NZ-specific research emphasised that barriers to recovery were both systemic and preventable, and that lived experience voices needed to be strengthened in order to enhance recovery efforts (Jowett et al., 2021). Updated clinical guidance for recovery capital in NZ addiction treatment has also been recently published and links to harm reduction principles and OST guidelines (Doncliff, 2025). Peers and peer support is strongly aligned with recovery capital, in that they provide community and connection, as well as bring lived experience of navigating a long-term recovery (or harm reduction) journey (Best et al., 2021; Castedo de Martell et al., 2025).

Takeaway messages: drug treatment

- Drug treatment approaches require adaptation to the NZ context and must be both accessible and acceptable to local communities
- Harm reduction can integrate with drug treatment, particularly when outcomes are determined collaboratively
- Done well, integrated services can increase access to both treatment and harm reduction services, rather than competing
- Peers can support building recovery capital
- There are important knowledge gaps about best-practice integration of harm reduction and treatment within NZ

Harm reduction approaches

This section covers harm reduction approaches that can occur outside of treatment for substance use disorders, and which are intended to reduce harm for PWUD while recognising that dependence is not the only harm to be reduced. Some of these approaches are already available in NZ and have NZ-specific literature available. Others are not currently available in NZ (or availability is limited), and in those instances, the applicability of the evidence to NZ is discussed.

For all of these programmes discussed in the following sections, it is important to highlight the value of peers, and that having a peer-led model increases the acceptability and efficacy of harm reduction services (Bardwell et al., 2018; Best et al., 2021; Castedo de Martell et al., 2025; Kennedy, Boyd, et al., 2019). The value of peers and lived experience applies to evaluation and research as well, not just the implementation of programmes, but it is important that research efforts offer genuine collaboration and engagement, and is not extractive, in order to build trust and give back to the communities most impacted by drug harm (Magdalena Harris, 2026b).

Preventing infection: Sterile needle and syringe provision (NSP)

Introduction

Needle and syringe programmes (NSPs), or needle exchange programmes are one of the most well-established harm reduction initiatives globally, and as discussed in the Background section, arose primarily out of the HIV crisis. This intervention is targeted towards people who inject drugs (PWID).

The intervention

At their core, NSPs provide sterile injecting equipment, so that the potential for infection is reduced, by reducing the number of people who either share equipment, or reuse their own equipment. Providing new equipment also reduces the risk of other wounds developing at the injection site, which then present their own infection risk. Beyond this, the NSPs provide concurrent benefits including peer support, safer injecting advice, harm reduction information, and can be a site at which other harm reduction interventions can be implemented in a safe and trusted environment, such as naloxone provision, BBV testing and treatment, or drug-checking.

Predominantly NSPs operate in community settings, though some countries also provide NSPs in prisons or custodial settings, which NZ does not. Community NSPs are frequently peer-led, which supports the acceptability and access for people who inject drugs.

Evidence of effectiveness

Because the NSPs are a well-established harm reduction, there is a significant body of knowledge that supports their effectiveness. There are ten systematic reviews, or 'reviews of reviews' that have been published since 2010 that consider the effectiveness of NSPs globally (Aspinall et al., 2014; Bouzanis et al., 2021; Davis et al., 2017; Des Jarlais et al., 2013; Fernandes et al., 2017; Jones et al., 2010; Killion et al., 2023; Lazarus et al., 2018; Platt et al., 2018; Yeh et al., 2023).

This body of evidence emphasises that NSPs are effective for the prevention of BBVs, including HIV and hepatitis at a population level. There is also evidence that NSPs are most effective when provided with high coverage and in multi-component programmes (Fernandes et al., 2017), particularly opioid substitution treatment (Platt et al., 2018).

It is also important to note that there is evidence that NSPs are safe and effective in prisons (Lazarus et al., 2018). Included in this review are five studies from Germany, Switzerland, and Spain, all of which were in programmes that were officially sanctioned prison NSPs. Outcome measures were varied including; HCV prevalence, HIV prevalence, new BBV infections, drug consumption, injecting site abscesses, and needle-sharing behaviours. The strongest collective evidence was for prevention of HIV and HCV, and very few negative consequences of these programmes were recorded (Lazarus et al., 2018).

Given the broad consensus that NSPs are effective, the important question then becomes what optimises NSP effectiveness? This could include setting, coverage, policies, or other services offered. A 2010 systematic review aimed to answer this question (Jones et al., 2010), but found challenges when synthesising the literature given that many were observational studies, varying outcomes of interest were included, and that intervention approaches were not provided in sufficient detail. What is clear though is that NSPs are most valued by clients when they are peer-led, and mobile sites and vending machines appear to be more acceptable to younger clients and those with higher risk profiles (Jones et al., 2010).

Relevance to Aotearoa NZ

Given that NZ was a world-leader in community NSPs there is a relatively larger local body of evidence for this harm reduction intervention (Gibson & Hutton, 2021; Hay et al., 2017; Horwitz et al., 2012; Noller & Bourke, 2020; Potter et al., 2025; Rijnink et al., 2022; Sheridan et al., 2005). Despite the intention to provide peer-led and supportive care, stigma remains an important barrier, particularly for women who inject drugs (Gibson & Hutton, 2021), though the NSPs remain a key site for seeking harm reduction information and support for injecting-related injuries in

comparison to other healthcare services where stigma is a substantial barrier to care (Potter et al., 2025).

Cost effectiveness

A 2021 cost-benefit analysis of the NZ needle exchange programme found that the programme returned $6.79 in benefits for every $1 invested, with the greatest monetary benefit being for avoided HCV in the community (Keen, 2021). It is also important to note that this modelling only included the initial person who was prevented from getting a BBV, not the flow-on effects of that person not being able to further transmit to other people, therefore, the benefits are likely to be higher. This is greater than the benefit-cost ration of 1.4 in the recent modelling study conducted for the Australian Capital Territory, though the authors of this work do acknowledge that their estimates are at the lower end of previous estimates and may be attributable to the fact that they did not consider HIV healthcare averted costs given that the very low population prevalence (Bowring et al., 2026).

Quality of evidence

According to GRADE the certainty of evidence for these studies ranged from Moderate to Very Low, but were primarily downgraded due to the diversity of outcome measures, and the fact that primarily they were observational studies that have a lower starting point. Despite this, the consensus among various systematic reviews should provide greater confidence in the outcomes.

Gaps and limitations

Existing knowledge gaps are in relation to:

- The nuances of what makes NSPs effective and what policies or practices may best support client health
- Outcomes beyond that of BBV prevention, particularly in relation to client wellbeing and access to supports and services
- Acceptability and access to NSPs for diverse population groups, including youth, women, gender diverse people, and disabled people
- There is no evidence of NSP effectiveness or implementation in prisons in many countries (including NZ), because the programmes are not provided in that context, though where they are provided, they are demonstrably effective

Reversing opioid overdose: Naloxone provision

Introduction

Naloxone is an opioid agonist used for treating opioid overdose, which works by reversing the effects of respiratory depression (McAuley et al., 2015). It is highly effective and carries minimal risk of harm (ibid). Naloxone can be administered intramuscularly (IM) or intranasally (IN), both of which have benefits and limitations. IN administration requires a higher rescue dose and carries a longer onset of action compared to IM administration (Yousefifard et al., 2020). Naloxone administrated intramuscularly is more efficient at reversing opioid overdose, higher-dose naloxone administered intranasally appears to have similar efficacy and no difference in adverse events (Chou et al., 2017; Dietze et al., 2019). The setting in which naloxone is administered is also important, as IN administration supports people in community settings without medical training to safely administer naloxone (Lewis et al., 2017; Yousefifard et al., 2020), whereas IM administration may be better suited for medical settings (Dietze et al., 2019). Current evidence suggests that training through community-based opioid overdose prevention

programs may support bystanders to administer naloxone in the event of opioid overdose (Clark et al., 2014). However, methodological limitations meant the effectiveness of these programmes in reducing fatal and nonfatal opioid overdoses is unclear and requires stronger evidence (ibid).

Strengthening the evidence base for naloxone delivery in community settings is challenged by ethical considerations; given the well-established effectiveness of naloxone for opioid overdose reversal, it would be highly unethical to withhold this treatment from participants in a control group (as required for an RCT study design) (Clark et al., 2014). However, the established effectiveness and lack of adverse events strongly support increasing access to naloxone in community settings (McAuley et al., 2015).

Take Home Naloxone: evidence of effectiveness

Take-home naloxone (THN) refers to naloxone kits distributed within a community setting and are usually paired with education on overdose recognition and naloxone administration (Chimbar & Moleta, 2018). THN is associated with decreased mortality among people who use opioids, and therefore there is strong support for THN as a form of harm reduction (ibid).

According to Spackman et al. (2025), every 10,000 THN kits in circulation was associated with a 23.9% reduction in opioid related mortality. An important consideration of this these findings is that they are based on a publicly available THN program, rather than only being available for those at risk of opioid overdose, and their family or friends (Spackman et al., 2025). Further evidence shows a reduction in fatal opioid overdose events among those engaged in THN programmes, fellow opioid users, and the wider community where THN is provided (McDonald & Strang, 2016). McAuley et al. (2015) calculated 'proportion of use' (PoU), and based on conservative estimates found a range of 5.2–13.1 naloxone uses every 3 months for every 100 PWUD trained. However, they also note PWUD can be a hard-to-reach population and to ensure naloxone is available at every overdose event, THN schemes should aim to distribute 20 times as many THN kits as opiate-related deaths (ibid).

THN programmes have faced a 'moral hazard' argument, that suggests provision of naloxone for opioid overdose reversal may encourage riskier drug use behaviour. These concerns appear to be unfounded, none of the seven studies reviewed by Tse et al. (2022) finding evidence of drug use increase associated with THN provision. Rather, some studies reported a mean decrease in days on which opioids were used, the quantity of opioid use, or the proportion of the population reporting use of opioids or other substances (Tse et al., 2022). Similarly, McDonald and Strang (2016) reported unanticipated benefits of THN programmes including entry into treatment, decreased drug use, and increased willingness to be tested for HIV and HCV. Provision of THN has further indicated cost-effectiveness, even given conservative estimates (McDonald & Strang, 2016). However, this needs to be explored further, as currently cost-effectiveness is largely assessed as a secondary outcome (Moustaqim-Barrette et al., 2021).

Cost-effectiveness

There is robust international evidence that take home naloxone programmes are cost effective. A 2018 UK study was modelled using IM naloxone distribution to people who use heroin (Langham et al., 2018). The study found that the programme would prevent 2,500 premature deaths with an incremental cost per quality-adjusted life year (QALY) gained of £899, as compared to a willingness-to-pay threshold of £20,000. This study did not include broader societal benefits, which would likely increase the cost effectiveness of the programme. A subsequent Canadian evaluation compared both intramuscular and intranasal naloxone distribution (Cid et al., 2024). Both formulations were cost-effective at a willingness-to-pay threshold of $140,000 Canadian

dollars / QALY gained. The incremental cost-effectiveness ratio was $50,984 per QALY for IM naloxone and $126,060 per QALY for IN naloxone (Cid et al., 2024). A recent evaluation from the state of New York estimated that naloxone provision and training had a return on investment of $3,219 for every $1 spent (Holtgrave et al., 2025). Bowring et al. undertook a fulsome cost-benefit analysis of harm reduction interventions for the Australian Capital Territory, of which THN was modelled as part of a package of interventions, and in isolation (Bowring et al., 2026). THN had the highest cost-benefit ratio of all modelled interventions in isolation, with a benefit-cost ratio of 16.4 (Bowring et al., 2026). Cherrier et al. pooled nine economic evaluations of community distribution of naloxone, and all studies concluded that this was cost-effective, with incremental cost-utility ratios ranging from $US111-58,738 per QALY gained (Cherrier et al., 2022). The authors of this study concluded that the consistency of these findings should strongly motivate the implementation of THN programmes (Cherrier et al., 2022).

Relevance to Aotearoa NZ

The current body of knowledge on intranasal naloxone is not currently directly applicable to NZ, given that it is not currently available due to lack of funding, however, that knowledge could be applied here should that funding situation change. Naloxone programmes are more advanced in countries that have had high rates of opioid use and overdose fatality, so much of the evidence comes from the UK, Canada, US, and Australia. However, injectable naloxone is currently available in NZ via NSPs.

Quality of evidence

Most of the studies of naloxone were evaluated by GRADE as low or very low. There are, however, two exceptions to this with studies from McAuley et al, and McDonald et al. (McAuley et al., 2015; McDonald & Strang, 2016). Both of these studies found that strong and consistent evidence supporting take home naloxone programmes for both providing positive outcomes and having relatively low risk. Study authors highlight the issues with robust evaluation, which is impacting the certainty within the evidence base.

Gaps and Limitations

Despite the evidence supporting THN for opioid overdose reversal, there are significant gaps in the literature regarding naloxone administration training strategies, and recommendations for policy and practice related to naloxone use and distribution (Moustaqim-Barrette et al., 2021). Currently, naloxone administration training largely appears in research as a secondary outcome, and best practice for this training is unclear. Similarly, regulation of THN (which affects availability) varies widely, from over-the-counter pharmacist provision to prescription only, to unscheduled drug.

There is no NZ-specific evidence related to naloxone provision, leading to local knowledge gaps around access, acceptability, and effectiveness. We were not able to identify any literature related to naloxone provision from a te ao Māori perspective.

Preventing injury: Safer equipment provision (non-NSP)

Introduction

Many harm reduction services have historically focused on the risks of overdose mortality among PWID – particularly from opioids (Tapper et al., 2023). Many of the same substances that drive overdose mortality when injected however, are also smoked or snorted.

Route of administration (RoA) significantly contributes to the risk profile of any given substance. 'Smoking' – or more accurately, vaporising and inhaling – and intranasal use are demonstrably safer than injecting across multiple harm domains: lower per-event overdose risk, less acute risk of infection, and generally reduced exposure to bloodborne viruses (BBV) including HIV and HCV (Eger et al., 2024; Syvertsen et al., 2025).

Non-injecting routes of administration (NIROA) provide multiple off-ramps away from injecting-related harms. They often precede a person's initiation of injecting; prevent transition to injecting; and support de-transition from injecting, when that is a person's goal (Harris et al., 2020; Kral et al., 2021). The North American drug landscape in particular has been characterised in recent years by fentanyl adulteration of opioid (and increasingly, stimulant) supplies (Syvertsen et al., 2025), contamination by potent sedatives like xylazine and medetomidine (Eger et al., 2024), and adulteration with industrial chemicals (e.g. corrosive cyclohexanamine in methamphetamine) (High Alert (DIANZ), 2025). This toxicity crisis has led to calls for shifting RoA away from injecting as a harm reduction intervention wherever possible.

Smoking a substance can offer PWUD benefits that injecting often would not. Qualitative information that becomes evident by 'smoking' includes distinct vaporisation characteristics - appearance, texture, colour, smell – that are intimately familiar to people who smoke substances regularly. This information can provide cues that allow a user to suspect adulteration, and interrupt administration before a harmful dose is fully consumed (McNeil et al., 2015; Persaud et al., 2013). Injected boluses offer categorically fewer cues for self-rescue in cases of high-risk adulteration.

The equipment that makes NIROA safer – this could include a wide range of utensils, including (but not limited to) borosilicate glass pipes, insulating mouthpieces, mesh gauze, push-sticks, snorting straws and 'snooters', dosing scoops, and rectal administration kits - sit awkwardly between illegality and unavailability across most jurisdictions. In the UK and NZ, any utensil intended to facilitate consumption of a controlled substance qualifies as 'drug paraphernalia', and is unlawful to supply under the respective Misuse of Drugs Act (M Harris, 2026; New Zealand Government, 1975). In some United States jurisdictions, smoking supplies are lawful or decriminalised, but federal harm reduction funding streams cannot be used to purchase them (Tapper et al., 2023).

The result is a global pattern in which the equipment that would most reduce harm for people who smoke or snort drugs is the least likely to be available - and where it is available, is rarely funded by the systems responsible for improving population health outcomes.

The intervention

Safer equipment provision (beyond needles and syringes, which are already provisioned through national needle and syringe programmes in many jurisdictions) refers to the supply of clean, individually-allocated, utensils designed for the three principal NIROA that afford the rapid uptake to the bloodstream highly desired by people with habitual, addictive and dependent relationships with their drug/s of choice:

- Inhalation via the respiratory mucosa (smoking / vaporising)
- Intranasal via the nasal mucosa (snorting)
- Rectal via the mucosa of the anus and rectum[17]

[17] Sometimes called "boofing", "shelving", "booty-bumping"

Of these, safer smoking equipment is the most established intervention category, with formal pilots and grassroots programmes operating in the UK (the in-progress Safer Inhalation Pipe Programme trial; SIPP), Canada (e.g. CATIE-supported distribution networks), and the United States (most notably Smokeworks). Safer snorting and rectal ('boofing') supplies are more recent additions to harm reduction best practice – the Canadian AIDS Treatment Information Exchange (CATIE) explicitly noted in 2023 that 'very little' information is available about the distribution of safer snorting supplies (Canadian AIDS Treatment Information Exchange (CATIE), 2023).

The mechanisms by which safer smoking equipment reduces harm are multiple and intersectional.

1. Availability of clean pipes eliminates the need for sharing utensils within use groups - pipe-sharing has been reported by over 50% of people who smoke substances in some studies (Elkhalifa et al., 2021; Tapper et al., 2023).
2. Robust borosilicate (e.g. 'pyrex') pipes and insulating mouthpieces prevent the burns, lacerations and mucosal injuries associated with makeshift implements (which otherwise often include lightbulbs and other broken glass, hot metal / foil, and plastic), which contribute to acute respiratory injury, haemoptysis (coughing blood), and entry points for BBV (Aaron et al., 2008; Grund et al., 2010).
3. As outlined above, the act of smoking itself (instead of injecting) provides a window of qualitative information about a drug / dose, sometimes allowing users to identify adulteration and self-rescue in a way unavailable in injecting drug use.
4. Equipment provision creates a service-engagement entry point parallel to that established for NSPs: offering contact, trust-building, education, and further health referrals.

By comparison, safer snorting equipment (single-use straws, 'snooters', dosing spoons, etc.) has a slightly narrower application: primarily reducing risk of person-to-person BBV transmission via shared mucosal-contacted surfaces, as well as supporting more accurate dosing (where dosing scoops are provided) (Aaron et al., 2008; Fernandez et al., 2016; Scheinmann et al., 2007).

Safer 'boofing' (rectal administration) kits are an emerging intervention with documented (but not exclusive) relevance in Rainbow communities and chemsex[18] contexts - but minimal published evaluation to date (Shang et al., 2023).

A useful analogy for expanding 'drug paraphernalia' offerings is condom distribution: the public health benefit of supplying clean barrier devices is self-evident, independent of whether or not its underlying activity is decriminalised. Prohibition is generally unable to prevent the activity - but can certainly prevent *safer* use, and obstruct research evaluations necessary to build the evidence base.

Evidence of effectiveness

The strongest review of safer-smoking-equipment evidence to date is the systematic narrative review by Tapper et al. in 2023 (Tapper et al., 2023), identifying 32 peer-reviewed studies across six countries (overwhelmingly from Canada; n=27) on safer smoking provision and education

[18] Chemsex (sometimes called Party'n'Play or PNP) is the term used to describe sexual activity between men under the influence of specific drugs, usually methamphetamine, and GHB/GBL, to enhance and stimulate the experience, source: https://bodypositive.org.nz/Pages/Alcohol_and_Drugs/Chemsex/

(a.k.a. Safer Smoking Programmes; SSPs). Across this heterogeneous evidence base of predominantly observational trial designs, the review found "*consistent evidence*" of:

1. *reduced sharing* of smoking utensils,

2. *reduced injection frequency* among dual-RoA users, and

3. *increased health service engagement* when safer smoking utensils were available.

Tapper's review pre-dates more recent and rigorous quasi-experimental work now emerging from the UK Safer Inhalation Pipe Project trial (SIPP; in preparation for publication as of April 2026). Compelling (albeit sparse) evidence for each outcome – available at the time of this report - is illustrated in this section.

Reducing transition to - and supporting de-transition from - injecting

In Seattle (USA), an SSP-based heroin pipe distribution programme found the proportion of clients exclusively injecting heroin fell from 43% to 32% over approximately nine months, with around 34% of those who used a programme-supplied pipe reporting reduced injection frequency (Fitzpatrick et al., 2022). The pre/post design and self-report measures warrant caution, and pipes from non-programme sources confound explicit attribution to the intervention specifically - however the direction and magnitude of effect are consistent with reports from other jurisdictions.

A complementary cross-sectional survey of the same sites (Reid et al., 2023) documented the demand-supply gap that motivates this kind of programme: only 11–12% of PWID had access to free safer smoking equipment, while among those without access, 28% of people who use heroin, 45% of those using methamphetamine and 49% of people using crack cocaine wanted it, and a majority of participants indicated that access would reduce their injection frequency. Bardwell et al. (Bardwell et al., 2021) provide qualitative evidence that smoking is preferred over injecting by some women in particular, including as a strategy to avoid risk of gender-based violence associated with injecting in shared and public settings.

Reducing pipe-sharing and BBV exposure

The most direct quasi-experimental test of whether safer pipe provision changes practice comes from the UK SIPP trial. In unpublished data - from Harris, Southwell and colleagues - safer smoking intervention ('case') sites reported a 35% reduction in participants using someone else's crack pipe, a 75% reduction in using homemade pipes, and were 50% less likely to inject any drug, relative to comparison ('control') sites (Magdalena Harris, 2026a), alongside improvements in other safer-practice indicators. As unpublished results, these indications warrant cautious interpretation - but these are the most direct test of whether pipe provision changes drug-taking behaviours currently available. The trial itself is peer-led, providing substantive lived/living experience grounding in design and implementation (see GRADE note below). An earlier descriptive study reported that participants always (or almost always) using a 'pyrex' (borosilicate) pipe rose from 7.0% to 27.3% following provision – a valuable improvement compared to the baseline frequency of using a homemade pipe (69.1%) (M Harris, 2026).

Reducing physical injury and respiratory harm

Direct evidence of injury reduction is even more sparse, but consistent. Prangnell et al. (2017) reported a significant 18% reduction (adjusted Odds Ratio = 0.82) in health problems from smoking crack among 1,718 people accessing a safer smoking equipment programme (Prangnell et al., 2017). Harris and colleagues' SIPP mixed-methods data on respiratory harm (n=733)

document the baseline disease burden this intervention seeks to address: among surveyed people who use crack in England, 60% reported respiratory symptoms, 36% had received a diagnosis of respiratory disease, and 19% had been hospitalised for a respiratory condition (Harris M, 2026).

In contrast, Fitzpatrick's Seattle evaluation (Fitzpatrick et al., 2022) did not find a reduction in self-reported pulmonary hospitalisations, nor in public injecting or needle re-use among those continuing to inject in addition to smoking - suggesting that pipe provision shifts route patterns and sharing behaviour most reliably when it replaces (rather than supplements) injecting.

Service engagement

Two recent studies provide converging quantitative and qualitative evidence that safer smoking equipment functions as a service-engagement tool - analogous to the well-established role of NSPs in bringing PWID into contact with health and social services. Chung and colleagues' 2025 national survey of US SSPs (n=429) found that 44% distributed safer smoking supplies, and that these programmes had significantly more participant encounters (adjusted rate ratio 1.62, 95% CI 1.19 to 2.20) and somewhat more naloxone distributed (aRR 1.26, 95% CI 0.91 to 1.74) (Chung et al., 2025). Sharpe and colleagues' 2026 SIPP qualitative evaluation in England (Sharpe et al., 2026) found that equipment provision facilitated new contact with services (including being nearly 3-times as likely to visit treatment services (Magdalena Harris, 2026a) and begin disclosing crack use; that quality workforce training enabled relationship-building and further referral; and that peer networks were essential alongside service provision to reach those least connected to formal services already. Together with Eger and colleagues' 2026 qualitative interviews with 41 staff at 27 US SSPs (Eger et al., 2026) - which identified fentanyl adulteration and COVID-19 as the principal drivers of US adoption - these studies form the strongest available evidence for service engagement as a tangible outcome for supplying safer paraphernalia.

Acceptability and demand

Acceptability studies consistently show high degrees of willingness to use safer smoking facilities and equipment where available. Up to 69% of clients across studied settings indicated they would use spaces that support safer inhalation (Shannon et al., 2006), though this willingness is contingent on the availability of equipment itself (Cortina et al., 2018). Reid 2023's demand data (Reid et al., 2023) corroborate this from the demand side. Eger (2026) and the SIPP trial both document staff perspectives and barriers: including funding and legal restrictions, stigma, and concerns about the evidence base - with successful programmes deploying incremental piloting, productive relationships with law enforcement, and diversified funding to navigate these constraints (Eger et al., 2026; Harris M, 2026).

Safer snorting equipment

Evidence is comparatively thin, and largely confined to a biologically plausible basis for nose-to-nose BBV transmission. Aaron and colleagues' 2008 study (Aaron et al., 2008) demonstrated detectable HCV RNA on ‘simulated-use’ straws, and on secretions from people with active HCV infection - establishing mechanistic plausibility for HCV transmission via sharing of straws. Population studies have shown HCV prevalence ranging from 2.3% to 35.3% in non-injecting drug use populations, though with an inconsistent association with implement sharing specifically (Scheinmann et al., 2007). A study focused on pregnant people - a population already at elevated risk - documented straw sharing as a risk for HCV exposure (Fernandez et al., 2016). CATIE's 2023 statement explicitly notes the absence of evidence evaluating snorting supply distribution (Canadian AIDS Treatment Information Exchange (CATIE), 2023).

Safer rectal administration

The Boston OBAT implementation/feasibility study (Shang et al., 2023) is one of the few peer-reviewed publications including safer rectal administration kits as a distinct category. This is an emerging area of practice without published outcome evaluation. Insufficient evidence currently exists to GRADE – however there is likely to be benefit in addressing this risk and intervention, particularly for priority populations within which 'chemsex' is most classically associated (Lyu, 2023).

Cost effectiveness

Formal cost-effectiveness analyses for safer equipment provision are even thinner. Eger and co. (Eger et al., 2026) discuss cost as an implementation barrier - particularly for durable borosilicate pipes, which are more expensive than alternatives - but does not present formal economic analysis. The Boston OBAT implementation paper provides one indicative unit-cost estimate of approximately US$1,021 per month for a small clinic across all kit types (Shang et al., 2023). Chung 2025's finding that equipment-distributing programmes also distribute more naloxone and have more participant encounters provides an indirect efficiency argument: even before the putative savings afforded by this specific intervention, safer smoking equipment provision appears to extend the reach of existing services and interventions, rather than competing with them (Chung et al., 2025). A formal cost-benefit analysis of harm reduction interventions in the Australian Capital Territory (Bowring et al., 2026ACT-CBA) models several intervention types but did not separately cost safer smoking provision. This is a clear evidence gap relative to other harm reduction interventions, where cost-benefit ratios are generally better established.

Relevance to Aotearoa New Zealand

NZ's legal context closely parallels the UK's: most utensils distributed with knowledge or intent to consume a (non-alcoholic) substance qualifies as paraphernalia and is unlawful to supply under the Misuse of Drugs Act 1975 (New Zealand Government, 1975). The constraints this imposes are concrete on an operational level. In NZ, drug checking services are equipped and permitted to distribute micro-scoops (of roughly measured / known quantity) for the purpose of performing test strips on a sample, but the same scoop is unlawful to distribute for the purpose of accurately dosing or administering that same substance. Paper straws are lawful to distribute for drinking beverages (alcoholic or otherwise), but are explicitly not lawful for any other RoA - including for any euphemistic purpose (e.g. "tiny drinks", or "nose beersies"). Safer smoking pipes are at times available from small-scale retailers under other euphemistic descriptors (e.g. "flower stems", "oil burners"); however, these sales remain unlawful, and distributors are liable to be prosecuted.

The substance landscape in NZ differs materially from the dominant evidence base. NZ has historically had a smaller cocaine market than the US or UK, although wastewater and Customs seizure data suggest this is changing (Dirga, 2026). Despite recent increases in the availability of cocaine, methamphetamine remains the most commonly injected stimulant (Whelan & Crossin, 2025). The implication for evidence translation is that the SIPP and Tapper findings - which overwhelmingly describe crack-cocaine use contexts - establish a mechanism and need, but not necessarily direct translation to a methamphetamine-dominant market. The evidence base for methamphetamine-specific safer smoking equipment is materially thinner. Australian work on stimulant smoking patterns (e.g. Bartlett 2026's documentation of rising amphetamine injection at the Sydney Uniting MSIC, from 2% in 2001–2011 to 50.1% by 2024 (Bartlett et al., 2026))

provides some regional comparison, but does not directly evaluate methamphetamine-smoking equipment provision.

Existing NZ infrastructure provides a plausible delivery vehicle. The NZNEP are willing and could theoretically host equipment distribution under a parallel model to the existing NSP arrangement if legal reform enabled it; the workforce, premises and client relationships are already in place. Equity considerations apply here: the burden of makeshift implements (lightbulb pipes, foil, broken glass, shared straws, repurposed kitchen utensils) likely falls disproportionately on people with the least access to alternatives – a disparity that intersects with Te Tiriti obligations to ensure protection for Māori and rangatahi. Published material on safer-equipment provision through a te ao Māori lens is currently missing.

Quality of evidence base

GRADE: No randomised controlled trials, meta-analyses, or Cochrane reviews of safer equipment provision exist as of April 2026. The evidence base is composed of one systematic narrative review (Tapper et al., 2023), several quasi-experimental studies (most notably the unpublished SIPP main outcomes), cross-sectional surveys, and qualitative implementation studies.

- *Safer smoking equipment - reduction in initiation of, or transition to, injecting*: Low. Main downgrade domain across the body of evidence is indirectness: most studies are based in crack-cocaine-dominant contexts, a substance-class mismatch when applied to NZ's prevalence of MA use.
- *Reduction in pipe-sharing and BBV-relevant practices*: Low. Unpublished work provides the strongest signal for reduction of pipe sharing.
- *Service engagement*: Low. Service engagement is nice but still a proxy for improved outcomes; benefits for naloxone distribution are positive but imprecise.
- *Reduction in respiratory harms and burn injuries*: Very Low. Single uncontrolled programme evaluation and small effect sizes with self-report bias and no well-controlled comparisons.
- *Safer snorting equipment*: Very Low. Mechanistic plausibility (Aaron et al., 2008) and ecological/cross-sectional prevalence data only.
- *Safer rectal administration kits*: Insufficient evidence. Single feasibility study reports the intervention as deliverable; no outcome data published (Shang et al., 2023).

Despite the intrinsically 'Low' quality of emerging evidence, a consistent pattern is found: harm reduction-aligned improvement of health outcomes most clearly intersect with higher-quality evidence in interventions with longer evaluation periods / endpoints. The interventions newest to formal evaluation (or most constrained by illegality of paraphernalia / evaluation), are *necessarily the ones with the lowest GRADE ratings* - even where the mechanism, acceptability/demand, and observed effects are in consistently positive direction. Low GRADE ratings reflect the novelty of the intervention, not necessarily the magnitude of the underlying harm, or plausibility of the benefit.

Gaps and limitations

- No high-quality controlled evidence exists for BBV outcomes, respiratory health, or overdose mortality for any NIROA equipment intervention.
- No evaluation studies of safer snorting distribution programmes (CATIE 2024 explicitly endorses this as a documented gap rather than a weakness of the present review).
- No evaluation studies of safer rectal administration kits beyond initial feasibility.

- No formal cost-effectiveness analyses of safer equipment provision as a standalone or integrated intervention.
- No NZ-based evaluation of any safer equipment provision programme; no te ao Māori-specific or Kaupapa Māori evaluation data could be identified; the existing legal framework precludes generating this evidence without legislative change or exemption.
- Substance-class indirectness is the most consistent limitation: heroin and crack cocaine dominate the published evidence base, while MA dominates the NZ stimulant landscape. The mechanism is likely transferrable, but requires local evaluation.

(Eger et al., 2026) captures the implementation-side barriers consistently across the international literature - funding, legal restriction, stigma, and concerns about the evidence base - and notes that successful programmes have used incremental piloting and diversified funding strategies to navigate them. The NZ context contains all four constraints; legal reform is the binding one.

Know what you're taking: Drug checking

Introduction

Drug checking (sometimes called pill testing) is a harm reduction intervention that is intended to reduce harm by providing data on the strength or purity of a drug to the person who is intending to take it, so that they might make informed choices. This could be to not take the drug at all, or to alter their consumption practices to make this use safer. Drug checking should be conceptualised as an intervention that exists in direct response to prohibition, in which an unregulated black market for drugs is inherently volatile and uncertain, and would not be required in a regulated drug market.

The intervention

Drug checking interventions can be broadly categorised as front-of-house or back-of-house. In this review we primarily focus on front-of-house testing where there is direct contact with the person intending to take the drug. Back-of-house testing refers to testing of samples that have been detected, or seized, or confiscated, to conduct surveillance or identify population-level drug trends. Communication can then be indirectly conducted with people who use drugs, by issuing alerts or updates about high-risk drugs. NZ has an integrated warning system (High Alert), which pools diverse information sources. Drug testing can be conducted at fixed or mobile sites, and is supported by recent technological advances including handheld devices that can analyse drugs using very small samples. The benefit of front-of-house drug checking is that generic harm reduction advice can be individualised and made much more specific when it is backed up by data from a specific person. It also enables peer provision of drug-checking and harm reduction information, which increases the relevance and appropriateness of the messaging for people who use drugs, and ensures that advice is non-judgmental and safe.

It is also important to note that drug-checking services are often 'intended' to be used by the person who is going to use drugs, however, there is evidence that some people who supply drugs are also using the services (Gonzalez-Nieto et al., 2026). This recent study from Canada found that 16.2% of all service users were drug sellers, who were using drug checking to mitigate risks associated with the illicit drug market, including overdose, and were acting to improve the safety of their customers (Gonzalez-Nieto et al., 2026). While knowledge gaps remain about what actions drug sellers are taking in response to drug checking results, this presents an opportunity to move harm reduction more 'upstream' and preventing high-risk drugs from reaching consumers.

Evidence of effectiveness

There are three systematic or scoping reviews of drug-checking that are included (Giulini et al., 2023; Grace Rose et al., 2023; Maghsoudi et al., 2022). The strongest evidence of efficacy comes from a 2021 systematic review of 90 studies from Australia, US, and Europe, which included both off-site and on-site testing. Because they included a wide range of outcome measures (over 50), results are difficult to collectively synthesise, however, there was good evidence that drug-checking influences behavioural intentions and the actual behaviour of people who use drugs, when results are unexpected (Maghsoudi et al., 2022). Giulini et al. provide valuable insights on implementation strategies, and the types of drug checking that are most effective (Giulini et al., 2023). Through pooling 51 global studies, they conclude that services that provide personalised interventions and advice can most positively influence behaviour change and minimise harm. Similarly, Grace et al. published a scoping review in 2023, which while only including US studies, primarily looked at implementation and contextual factors that influence efficacy. They conclude that there is a need for highly accurate, quantitative results, and service accessibility was identified as an important factor (including location, integration with other services, mobility, and hours of service), as was trust that needed to be built between services and clients (Grace Rose et al., 2023).

Cost effectiveness

Given the relative novelty of drug checking globally, which has been supported by both technological advancements and legislative change, high quality cost-benefit data are sparse. In a modelling study conducted in the Australian Capital Territory, drug checking services were not shown to be cost-effective in the current conditions, though authors note the difficult in measuring the impacts of these services on market surveillance and overdose prevention, however, it is important to note that the authors also modelled the impacts of a change in the drug market where synthetic opioids become more prevalent, and in this scenario, drug checking became highly cost-effective with a benefit to cost ratio of 14.0 (Bowring et al., 2026).

Relevance to Aotearoa New Zealand

Drug checking is legally provided in NZ, and is available at fixed and mobile sites. An evaluation of the NZ drug checking legislation has been commissioned and is currently in-progress, which will provide highly relevant insights to effectiveness, cost-effectiveness, and opportunities for service improvement. Even without this evaluation, local evidence suggests that the service is averting potential harm (New Zealand Drug Foundation, 2025c).

NZ-specific evidence does suggest that the service is acceptable to people who use drugs and that they are altering their behaviour in response to findings (Brokenshire, 2022; Mayer et al., 2025; Whelan, Noller, et al., 2024; Whelan, Ward, et al., 2024).

Quality of evidence

While the certainty of evidence as assessed by GRADE is predominantly Low to Moderate, this may improve as the body of evidence grows, and is influenced by the wide range of outcome measures and diverse models for drug checking, which make synthesising findings challenging. It is important to highlight though that the NZ specific evidence was informed by people with lived and living experience of drug use, which provides greater certainty that the programme is working to reduce harm.

Gaps and limitations

Drug checking needs to be tailored to the local context and the current drug market, which means that evidence may become outdated as these change. For example, more is known about drug checking of 'festival drugs' like MDMA in the NZ context and less about testing of drugs for synthetic opioids, however, if the drug market changed, then drug checking would need to be responsive to new populations and their needs.

Regulate the supply: Safe(r) provision of desirable substances

Introduction

Access to a regulated supply of a desirable substance can be a decisive enabler for high-risk PWUD to engage with healthcare services. Where a state service can provide a known (-chemically, -potency, or both) alternative to the illicit market (which is also made more toxic by unknown drugs, unknown strengths, and volatility), the window for healthcare engagement can be widened dramatically - not by persuasion or coercion to stop using, but by immediately relieving the daily uncertainty, logistical and economic precarity that comes with regularly sourcing illicit drugs (Strang et al., 2012).

This section reviews regulated-supply interventions across a spectrum: from

1. Highly-medicalised '*enhanced agonist therapies*' - particularly supervised injectable heroin-assisted treatment (SIH/HAT) and pharmaceutical psychostimulants, through
2. Prescribed safer opioid supply (Canadian 'SOS' programmes), to
3. Fully de-medicalised peer-led 'safe' supply model; e.g. the Vancouver Drug User Liberation Front (DULF)

The evidence landscape across these interventions is complex. Evidence 'quality' is dramatically inverted relative to the values of harm reduction: the most clinical end (SIH/HAT) has the strongest RCT evidence base, whereas the most harm reduction values-aligned example (DULF / peer-led compassion clubs) has the 'weakest' evidence - not because the effectiveness is in doubt, but because legal and political constraints largely preclude evaluations that would generate higher-grade evidence.

The intervention

Regulated-supply interventions share a common basic rationale: providing a quality-assured pharmaceutical (or at least known-composition) alternative to illicit drugs. Services aim to reduce overdose risk; displace illicit/street market participation; and create durable engagement with healthcare and psychosocial support.

From this common base, the interventions diverge sharply however: in how prescriptively they are delivered; who is permitted to deliver them; and what role abstinence plays as a goal in models of care. A useful taxonomy distinguishes three points along this continuum: 1. enhanced agonist therapy, 2. safe(r) supply, and 3. 'safe' supply. All three sit downstream of (but emerge as distinct from) traditional opioid agonist / substitution therapy (OAT/OST) e.g. methadone and buprenorphine for OUD maintenance - reviewed earlier (and considered as a type of Treatment).

NZ already provides OAT/OST through specialist addiction / community alcohol and drug services. Methadone and buprenorphine are favoured for their capacity to suppress withdrawal and craving *without* producing the euphoric effect of street opioids, and are tolerated by many people - but rejected by others, precisely because the desired psychoactive effect is suppressed. The regulated-supply continuum reviewed in this section begins where traditional OAT/OST ends

- specifically, with people for whom traditional (first-line) agonist therapies have not been sufficiently effective / acceptable / desirable to retain PWUD in treatment.

This tiered 'taxonomy' describes how the field has self-organised; in practice, programmes often merge somewhat across categories. The categorisation is most useful for explaining why the evidence base looks the way it does (Do et al., 2026).

Enhanced agonist therapy (EAT)

Stringent medicalised models delivered by clinical staff, in clinical settings, under direct supervision.

Defining features include: pharmaceutical-grade prescribing of a substance that produces desirable psychoactive effect (unlike buprenorphine, and to some extent, methadone); supervised on-site administration; concurrent maintenance therapy (typically methadone) to prevent withdrawal between doses; and tight inclusion criteria (most commonly, treatment-refractory OUD after two or more failed standard applications of traditional OAT).

The two main forms of EAT (with distinct divergence in respective evidence bases) are:

- Supervised injectable heroin (SIH) / heroin-assisted treatment (HAT): Prescribed pharmaceutical diacetylmorphine (heroin), administered up to three times daily under clinical supervision, alongside methadone or hydromorphone maintenance to prevent withdrawal (Ritter et al., 2025; Strang et al., 2012). Hydromorphone has increasingly been used as an alternative opioid in recent Canadian trials - in part because of demonstrated non-inferiority compared to heroin (see SALOME below), and because its regulatory pathway are less constrained than for heroin itself.
- Pharmaceutical psychostimulants (PPs) for stimulant use disorder: e.g. lisdexamfetamine (a pro-drug activated by red blood cells), dextroamphetamine, methylphenidate (MPH), or prescribed as replacement therapy for cocaine and amphetamine-type stimulant (ATS) use disorders. Unlike SIH/HAT, this is *not* an established evidence-based standard of care anywhere in 2026; it remains experimental, and a focus of ongoing research.

Among safer supply regimes, enhanced agonist therapies are perhaps the most acceptable to policymakers, and the most readily licensed under existing regulatory frameworks. These preserve clinical authority over; dosing, route of administration, and monitoring for compliance. Correspondingly, these treatment formats are the most evaluable in randomised controlled trials - hence the entirety of high-quality systematic reviews and meta-analyses are concentrated here.

Clinical appeal in this avenue comes with reciprocal downsides in practice: structural constraints (clinical trial registration, medical supervision, biometric and urine monitoring, restricted dispensing windows, abstinence from concurrent benzodiazepine or stimulant use, punitive discharge for adherence failure) (Bell et al., 2017; McNair et al., 2023) make these interventions inflexible, and ultimately inaccessible / unattractive to many of the PWUD who would most likely benefit from them. High attrition bias is consistently noted in these trials - often acknowledged by the authors themselves. This commonality may be viewed as a structural detriment of the design, or as a population characteristic - or perhaps more honestly, both (Pérez-Mañá et al., 2013). In either case, the effect is that 'high-quality' trials fail to retain PWUD, detracting from the certainty of findings.

Safe(r) supply (clinical-led)

Medicalised community models developed and delivered by clinical staff alongside peer workers - designed to integrate harm reduction principles with prescribing authority.

Health Canada defines safer supply as "*providing prescribed medications as a safer alternative to the toxic illegal drug supply to people who are at high risk of overdose*". These interventions emerged initially from the London Intercommunity Health Centre 'Safer Opioid Supply' (SOS) programme in 2016; was formalised by the Canadian Association of People Who Use Drugs (CAPUD) in 2019; and expanded under emergency public health authorisation during the COVID-19 pandemic, becoming incrementally embedded in clinical practice guidelines in coordination with the British Columbia Centre on Substance Use (BCCSU) (Do, 2026).

In contrast to enhanced agonist therapies, safe(r) supply programmes generally aim to align with harm reduction principles as a philosophy of care - acknowledging that this mode of treatment is not necessarily 'safe', but *safer* than unsupported use of street drugs.

As a key distinction against EAT programmes, safe(r) supply operationalises the harm reduction principle of autonomy by offering adjunctive maintenance therapy - but without *requiring* it. Format diversity (e.g. hydromorphone tablets, fentanyl patches, slow-release oral morphine) and flexibility around prescribing (including until recently, take-home doses) extends further than clinical models to "*meet PWUD where they are*", rather than expecting and demanding stringent compliance for enrolment in trials.

Wraparound services: primary healthcare, social workers, BBV prevention, housing support - often remain as integral offerings, and the evaluative framework reflects this: outcomes commonly include not only reduction in toxicity/events and treatment retention, but also housing stability, food security, contact with primary care, reductions in acquisitive crime (e.g. theft for sale to purchase drugs) and self-reported wellbeing (Atkinson, 2023; Haines & O'Byrne, 2023; Kolla, 2023; Ledlie et al., 2024; Sprakes, 2024).

This greater breadth of outcomes represents both a substantive distinction and benefit of the model of care, and a complication to the evidence base: with up to 50 distinct outcome measures reported across programme evaluations (Siefried et al., 2020). While this diversity represents a genuinely humanistic approach to trial design, it makes meaningful meta-analyses dramatically less feasible or well-powered. Research of safe(r) supply is therefore concentrated in scoping reviews; individual programme evaluations; and qualitative work - designs that tend toward *Low* or *Very Low* GRADE ratings, somewhat irrespective of effect size or consistency.

In 2025, BCCSU updated its 'prescribed alternatives' clinical bulletin to recommend directly-observed dosing as standard, phasing out the 'take-away' models that characterised COVID-19 pandemic era programmes (British Columbia Centre on Substance Use, 2025). This change occurred in response to concerns around (documented) diversion of safe(r) supply hydromorphone tablets in communities - a real and policy-relevant concern, particularly as diverted tablets can reach people not enrolled in treatment programmes, potentially contributing to paradoxical overdose / adverse outcomes.

Witnessed dosing reduces flexibility, and can reproduce some of the access barriers of traditional OAT/EAT, but does reflect a clinically responsible (and evidence-responsive) recalibration rather than a retreat from the underlying kaupapa. The distinction matters for policy consideration: safe(r) supply programmes were not ended to quench diversion concerns; rather, it's more that delivery models were tightened responsively to community concerns and risk of harm.

'Safe' supply (community-led)

De-medicalised models delivered by peers - the most authentic application of the harm reduction principle "*nothing about us without us*" in service design.

CAPUD defines this end of the regulated supply continuum as a "*legal and regulated supply of drugs with mind/body altering properties that traditionally have been accessible only through the illicit drug market*". The defining feature is low-barrier distribution of drugs that are pharmaceutically unregulated, but of known (drug checked) composition, often through 'buyers' or 'compassion' clubs, including substances that are not prescribable in a pharmaceutical form in their respective jurisdiction (heroin, cocaine, methamphetamine). Vancouver's Drug User Liberation Front (DULF) is the canonical example (Kalicum et al., 2024).

These models are categorically grassroots and peer-led, operating without legal authorisation - which makes them particularly vulnerable to disruption by law enforcement and changes in government policy. Participants are not required to pursue abstinence, obtain medical approval, or submit to surveillance. Human rights, autonomy, dignity, and drug user liberation are treated as first-principles.

The trade-off is that this model is - by definition - difficult or impossible to research to a high standard of evidence. Not because the interventions don't work, but because the legal precarity that defines them is incompatible with research infrastructure and ethical approval. The single peer-reviewed quantitative evaluation of a 'safe' supply intervention to date - Kalicum and colleagues' 2024 analysis of DULF compassion club enrolment - is correspondingly small (n=47), but with a direction and magnitude of effect that are striking, described further below.

Evidence of effectiveness

Evidence is presented by intervention category: enhanced agonist therapy (where the evidence is strongest; SIH/HAT), safe(r) supply (mixed trial designs but consistent direction), to 'safe' supply (sparse but suggestive of community-led benefits).

EAT: SIH / HAT - Reduction of illicit drug use and retention in treatment

Across Cochrane reviews (and Cochrane-criteria meta-analyses), SIH combined with flexible methadone significantly improves treatment retention and reduces illicit heroin use in treatment-refractory populations, compared with methadone maintenance alone.

Ferri et al.'s 2011 Cochrane review pooled eight studies (n=2,007) and found a relative retention ratio of 1.44 (95% CI 1.19-1.75) favouring SIH (Ferri et al., 2011). Strang and co.'s 2015 systematic review and meta-analysis of six RCTs reached the same conclusion, using stricter inclusion criteria (Strang et al., 2015). McNair's 2023 review of nine RCTs across eight studies (n=2,331) added that the retention advantage widens with longer follow-up (time in treatment as dose-dependence) from a 1% - 19% advantage at 6-9 months, to at least 27% by 12 months - and that 5 of 8 studies showed superiority for HAT over methadone in reducing illicit drug use by 13% - 47% (McNair et al., 2023). Smart and Reuter's 2022 review of RCTs documented consistent reductions in 'criminal activity' (median odds ratio 0.45 across 10 RCTs), with the strongest effects on drug-related and property offences (Smart & Reuter, 2022).

EAT: SIH / HAT - Reduction of mortality and serious adverse events

Effects on mortality are favourable but imprecise: Ferri 2011 reported a non-significant protective effect (relative risk of 0.65 (95% CI 0.25-1.69)), a result consistent with later reviews. Serious adverse events (SAEs) were unfortunately reciprocated, with a significantly higher rate of medication-related SAEs compared to methadone (relative risk of 13.50, 95% CI 2.55-71.53 in Ferri 2011 - though confidence intervals were wide / imprecise) (Ferri et al., 2011).

Reduced mortality (but with regular risk of adverse events) is consistent across reviews and authors conclusions: SIH is effective for treatment-refractory heroin dependence compared to methadone, but requires clinical infrastructure to manage a higher risk profile than traditional/oral OAT. This is the principle that justifies the supervised model that has shaped implementations across Switzerland, Germany, the Netherlands, the UK, Spain, and Canada (Ferri et al., 2011; Strang et al., 2015).

EAT: Hydromorphone

The Canadian SALOME trial (summarised in Bahji 2018) demonstrated non-inferiority of injectable hydromorphone compared with injectable heroin for retaining refractory participants in treatment, with a more favourable SAE profile (3 overdose events from hydromorphone vs. 11 from heroin) (Bahji & Bajaj, 2018). This finding offers a bridge between Enhanced Agonist Therapy methods and safe(r) supply, upon which hydromorphone became the principal opioid prescribed in Canadian 'SOS' programmes.

Other opioid agonists (SROM, dihydrocodeine, oral heroin, opium tinctures)

Slow-release oral morphine (SROM), evaluated in Ferri 2013's Cochrane review of three small studies (n=195), shows possible reductions in other opioid use, lower withdrawal symptoms than methadone (COWS score 2.2 vs 4.8, as a measure of severity of opioid withdrawal), and patient preference (7 of 9 in one study), but insufficient data to draw firm conclusions, and a higher rate of SAEs than methadone (Ferri et al., 2013). Dihydrocodeine (Carney et al., 2020) showed no significant difference over methadone or buprenorphine on reducing illicit opiate use, as low-quality evidence due to high attrition rate (Carney et al., 2020). Oral heroin, reviewed by Martins 2021, failed to produce the 'rush' of injected heroin, suggesting its therapeutic benefit may apply most to people who had never injected, wishing to switch from injecting to oral consumption, or for preventing withdrawal only (ML et al., 2021). In Iran, opium tincture shows comparable outcomes to methadone, albeit with low-quality evidence - a potentially important finding at least for jurisdictions where opium is a preferred drug (Noroozi et al., 2021).

EAT: Pharmaceutical psychostimulants

The evidence base for psychostimulant replacement therapy in stimulant use disorder is significantly weaker than for opioid agonists. Across Cochrane / Cochrane-criteria reviews, psychostimulants have not reliably reduced illicit stimulant use compared with placebo. In 2013, Perez-Mana found no significant difference between any of the trialled psychostimulants and placebo for reducing amphetamine use; sustained abstinence; or treatment retention, and no different in subgroup analyses either (Pérez-Mañá et al., 2013). Castells et al. found Very Low-quality evidence that psychostimulants modestly improved sustained abstinence from cocaine for some (relative rate of 1.36, 95% CI 1.05-1.77) but did not reduce the amount of cocaine used in others; bupropion and dexamphetamine showed some signal for reduced cocaine use, but no benefit for retention in treatment (Castells et al., 2016). Siefried et al.'s 2020 systematic review of 43 studies (4,065 participants, 23 individual pharmacotherapies) found mixed and weak positive signals across the most consistent pharmaceutical agents (dexamphetamine, methylphenidate, naltrexone and topiramate), with dexamphetamine and methylphenidate showing the most promise. Meta-analysis was impossible in this study, owing to over 50 distinct primary outcome measures (Siefried et al., 2020). Sharafi et al.'s 2024 meta-analysis of 10 RCTs (n=561) for amphetamine use disorder did find prescription psychostimulants significantly decreased stimulant cravings, but reduction in ATS use itself reached significance after high-bias studies were removed (relative risk 0.89, 95% CI 0.79-0.99). Higher doses and longer treatment duration

(≥20 weeks) were associated with better retention, indicating this effect may become more significantly pronounced over longer periods of treatment than studied (Sharafi et al., 2024).

Hypothesis: Why EAT/PP trials fail where OAT models succeeded

Pharmaceutical psychostimulants (PP) trials (particularly those qualifying for inclusion in Cochrane reviews) share a structural problem that is increasingly acknowledged in the evidence base.

Psychostimulant substitution trials are typically designed to replicate the clinical template of opioid agonist therapies: minimising dose ceilings, using slow-release or delayed-onset formulations, requiring supervised administration on rigid attendance schedules, with strict inclusion criteria and delivery by addiction medics.

For opioid substitution therapies, this template can 'succeed' well enough (even without strictly achieving PWUD 'acceptability') because the clinical 'floors' (prevention of withdrawal and mortality) are readily achieved and demonstrated without necessarily providing the desired (psychoactive) effect.

For stimulants, an equivalent 'floor' does not exist in the same way: the avoidance of withdrawal symptoms is not necessarily the most urgent factor that PWUD dependent on ATS are seeking to attain. Interventions that deliberately minimise attainment of 'desired' (psychoactive) effects - particularly in the name of acceptability to clinicians or policymakers - are designs that 'bake-in' unacceptability for the PWUD they intend to reach.

The Miles et al. 2013 trial of extended-release methylphenidate for amphetamine / methamphetamine dependent PWUD (n=41 from NZ and n=38 in Finland) is perhaps the greatest illustration of manufactured challenge to retaining participants in treatment when subjective 'benefits' are withheld (Miles et al., 2013). The trial provided a maximum daily dose of 54 mg methylphenidate with a slow-release mechanism - equivalent to (or less than) therapeutic doses used for management of ADHD in similar age range / populations. In a 22-week trial of this extended-release formulation - administered under daily supervised dosing in addiction services clinics - trial *retention* was significantly higher in the methylphenidate arm compared to placebo, but only 27 of 79 (34% of) participants completed the trial. Intention-to-treat analysis found no significant difference in ATS urine-positivity between cases and controls - though by endpoint, trial drop-out rendered results virtually meaningless anyway. The authors' own conclusion was that the trial "*failed to replicate earlier findings*" and that further replication would need to consider "*alternatives to the rigid clinic attendance criteria*", and increased doses relevant to the people it claimed to support. This acknowledgment by the authors supports an impression that trial design constrains effectiveness, limiting generalisation of the results from the only study to date that includes an NZ cohort.

A constructive reading of the pharmaceutical psychostimulant evidence base is therefore that trials to date *have not been adequately designed for success* across outcomes that matter to PWUD. Where the desired psychoactive effect is suppressed by formulation, dose, or supervision - attrition is unsurprising. Where PWUD priorities are centred, retention may be improved - but the intervention becomes harder to license (less clinically acceptable) under traditional addiction medicine frameworks. The case for piloting psychostimulant safer supply in stimulant-dominant jurisdictions including NZ rests not on existing high-quality efficacy evidence (which does not exist), but on a specific reasoned argument: that the trials that have failed did so for design reasons, amenable to correction in a properly harm-reduction-aligned model. This is plausible-not-yet-tested territory, and must be interpreted as such.

Safe(r) supply - Canadian opioid programme evaluations.

The Canadian SOS evidence base consists predominantly of individual programme evaluations ('grey literature') and observational cohort studies, reviewed most comprehensively in Ledlie 2024's scoping review (Ledlie et al., 2024). Despite relatively 'Low' qualities of evidence as assessed under the GRADE system, the consistency of direction across these studies is a valuable indicator for evidence of effectiveness.

Gomes et al.'s 2022 time series analysis of the London (Ontario) SOS cohort found significant reductions in emergency department visits (relative risk = 0.69), hospital admissions (RR 0.46), and healthcare costs (-$922 per person) over 12 months after entry to the programme, with no significant change in unexposed controls (Gomes et al., 2022). Gomes' larger population-based matched cohort (Ontario) extended these findings, showing reductions in opioid toxicity events (-1.09 per 100 people), all-cause ED visits (-8.85 per person-year), and all-cause hospitalisation (-2.0 per person-year), although healthcare utilisation rose during programme commencement before declining - a pattern consistent with engagement of previously-disengaged PWUD (Gomes et al., 2025).

Programme-level evaluations

Single-programme evaluations report consistent direction of effect across a wide range of outcomes, with limitations characteristic of single-programme evaluation designs. Brothers' 2022 evaluation of an emergency safe(r) supply (including managed alcohol) programme in COVID-19 isolation hotels in Halifax reported zero overdoses across 1,059 person-days, and a 92% successful 14-day isolation completion rate - an exceptional natural experiment under pandemic conditions (Brothers et al., 2022). Atkinson's 2023 evaluation of the Parkdale Queen West Community Health Centre programme showed self-reported past-3-month overdose rates dropped from 50% to 15%; 92% of participants reported fewer (or improved) side effects from their drug use; 52% stopped using street fentanyl; 73% reported they had been able to address a health issue for the first time (Atkinson, 2023). In Kolla's 2023 follow-up (London, Ontario) reported 49%-53% decreases in fentanyl use, and changes in route of administration with low overdose rates (Kolla, 2023). Haines' (2023 evaluation, Ottawa) participants described safer supply as offering "*community, connection, hope, and autonomy*", alongside specific concerns about restrictive protocols, inadequate doses, and diversion (Haines & O'Byrne, 2023). In 2024 Sprakes (Thunder Bay) reported reduced poisoning/overdose events of between 77% and 92%; 100% reduction of carceral outcomes, and 80% reduction of fentanyl use, alongside various degrees of increased primary healthcare engagement, accessing immunisation, BBV care, housing, and "*connection to culture and community*" (Sprakes, 2024).

'Safe' supply - peer-led buyers' club(s)

Kalicum et al.'s analysis of the Drug User Liberation Front compassion club in Vancouver is the only peer-reviewed evaluation of an unsanctioned '*safe*' (a peer term) supply intervention to date (Kalicum et al., 2024). The study followed 47 club members over 225 service occasions totalling 44.4 person-years. Multivariable analysis found enrolment was associated with reduced non-fatal overdoses (any; adjusted odds ratio of 0.51, 95% CI 0.26-0.99) sand reduced non-fatal overdoses (involving naloxone administration; aOR 0.37, 95% CI 0.16-0.84).

This sample is small, and the design observational - but the substantive design features (peer-led operation, peer governance, peer evaluation) makes its results meaningful as evidence that a fully peer values-aligned model can produce measurable harm reduction. Within the constraints

of a small sample, it does – but at significant cost. The legal consequences of this operation have been significant, and are ongoing at the time of this report[19].

Cost effectiveness

The most directly applicable cost-benefit analysis is Bowring's 2026 modelling of harm reduction interventions in the Australian Capital Territory (Bowring et al., 2026). Across modelled interventions, safer opioid supply produced a benefit-cost ratio of 1.5 (95% CI 0.8-2.6) at the lower end of the range compared to naloxone, OAT and NSP interventions discussed earlier. The sensitivity analysis conducted (i.e. changing drug / harm landscapes with higher overdose probability) increased the estimated value of overdose-prevention interventions, suggesting the case for / savings from SOS strengthen as supply toxicity worsens.

Strang's 2012 EMCDDA report found that SIH is more expensive to deliver than oral OAT, but less expensive than the more acute/negative outcomes of opioid use, e.g. inpatient treatment, incarceration, and ED utilisation (Strang et al., 2012). This is the standard cost-effectiveness argument for SIH/HAT, replicated across cost analyses. Comparable cost-effectiveness analyses for prescription psychostimulants do not yet exist, reflecting the relative immaturity of the evidence base and weak benefits found in underpowered studies to date.

Programme-level cost data from Canadian SOS evaluations are difficult to compare across sites: due to different staffing models, prescribing schema, and variable provision of wraparound services. Gomes 2022's finding of -$922 per person in healthcare costs (excluding primary care or outpatient medications) is the strongest available signal of cost-effectiveness (Gomes et al., 2022). This leads to the conclusion that SOS – while expensive – can at least displace the more expensive forms of healthcare use that it reduces reliance on.

Relevance to Aotearoa New Zealand

None of the interventions reviewed in this section are currently available in NZ. Methadone and buprenorphine maintenance is the floor of opioid agonist treatment, delivered through SAS/CADS. There is no SIH/HAT, safe(r) opioid supply, and no legal pathway to peer-led safe supply beyond self-directed 'homebaking' of morphine to heroin, which relies on acetic anhydride – a highly-controlled substance for this exact reason. This places NZ at the lowest end among OECD countries: virtually every comparable nation with a demographically similar population or greater levels of overdose mortality has established or trialled at least one or more of these interventions.

Differences in the substance landscape between nations compounds this gap. NZ's drug market is heavily stimulant-dominant (Yu S, 2022) rather than opioid-dominant, and the ATS evidence base - as discussed above - is the weakest segment of the regulated-supply literature.

The combined effect is that NZ has neither implemented the regulated-supply interventions for which the evidence is strongest, nor invested in performing the harm-reduction-aligned trials that the ATS evidence-base most needs (i.e. addiction medicine has not centred PWUD-defined acceptability as a design parameter). Miles 2013 - the only NZ-inclusive trial in the published ATS evidence base – performs and describes this pattern explicitly (Miles et al., 2013).

Lessons from the literature to date

A direct lesson for NZ may be that replicating the highest-quality international RCTs in stimulant pharmacotherapy under existing CADS service models is likely to replicate these methodological

[19] See: https://filtermag.org/dulf-constitutional-challenge-health-canada-official/

failures. Trial designs that succeeded internationally for opioids did so because traditional OAT happens to be acceptable enough to a substantial enough fraction of opioid-dependent people - the dominant intervention model and the dominant clinical desire happen to overlap.

For ATS, that overlap does not appear to exist currently, and trial designs ignoring this issue produce low-quality, inconclusive, or null results. A genuinely harm reduction-aligned trial - with prescribing flexibility tailored to peer values, with substantive peer-led design and operation, and outcome measures including (but not necessarily limited to) reduction of illicit use and acquisitive crime - is where the ATS evidence base could benefit. Additionally, trials may need to extend endpoints beyond the typical range, in light of the literature consistently identifying long-term engagement (endpoint maxima) as the point where the greatest magnitudes and statistical significance of benefits are found.

In harm reduction framing, acceptability to PWUD *must* be a design parameter, not an afterthought. Clinical infrastructure is untrustworthy to many PWUD; rebuilding that trust is not merely an implementation question, but a precondition for any trial seeking to maximise insight and benefit. Pathways through peer-led organisations e.g. the New Zealand Needle Exchange Programme and (importantly) kaupapa Māori services may offer superior alternatives to host trials with lower attrition risk than clinically-led models. This distinction and benefit would likely require legislative and funding pathways that do not currently exist.

On the opioid side, NZ's population scale (and harm landscape) is comparatively smaller. Outside of one particular episode of misrepresentation (fentanyl sold as cocaine) and scattered incidents of community harm (mainly due to high-risk drug-taking behaviours), NZ does not have a fentanyl crisis on the North American scale, and traditional OAT meets the needs of many opioid-dependent PWUD (PHARMAC, 2024). Until the NZ landscape changes, the case for implementing SIH/HAT in NZ would mainly concern a small cohort of treatment-refractory opioid users, for whom traditional OAT/OST has not been sufficiently effective. Given the relatively small size of this population currently, cost-effectiveness in an NZ-specific model would need to be assessed against that population scale; against the lower (though rising) underlying incidence of overdose mortality; the displacement of existing healthcare and criminal justice costs; and perhaps most importantly: the risk that availability and use of opioids in NZ communities could change at any moment.

Quality of evidence base

GRADE. The evidence base for regulated-supply interventions is significantly heterogeneous across the tiered hierarchy proposed in this section:

- *SIH/HAT vs OAT/OST* (where medicalised RCTs are abundant)
    - Retention in treatment: Moderate. Pooled across multiple Cochrane / Cochrane-criteria meta-analyses, direction and magnitude are similar and consistent.
    - Reduced illicit drug use: Moderate. Same again, consistent reductions in illicit heroin use and criminal activities, but indirect as applied to Aotearoa NZ.
    - Reduced mortality: Low. Direction favours SIH, but confidence intervals cross the null.
- *Pharmaceutical psychostimulants* (RCTs exist but the evidence base is evolving)
    - For amphetamine-type use disorder: Very Low, reflecting relative immaturity of the evidence base and trial design, not necessarily effectiveness.
    - For cocaine use disorder: Very Low. Fairly modest benefits for sustained abstinence, no benefit for reduced use, substantial attrition biases.

- *Prescribed safe(r) opioid supply* (individual programme evaluations)
    - Reduction in opioid toxicity / healthcare utilisation: Low. High risks of bias. Direction and magnitude are however consistent across multiple programmes and outcome types.
    - Broader wellbeing outcomes (housing, primary care engagement, food security): Low. Self-report dominates; effect sizes are large but uncontrolled.
- *Unsanctioned 'safe' supply* (single study, unlawful practices)
    - Reduction in non-fatal overdose: Low. Single study; effect direction and magnitude are backed in theory, but replication infeasible due to legal constraints.

For these interventions, quality of evidence runs in the opposite direction of alignment to harm reduction values. The interventions with the strongest randomised evidence (SIH/HAT) are also the most clinical / restrictive / reproductive of traditional addiction medicine attitudes/barriers. The interventions most aligned with harm reduction values (peer-led 'safe' supply) are the most legally constrained - their precarity prevents the kind of large-scale evaluation that could generate higher GRADE ratings. The Low or Very Low ratings on the values-aligned end are therefore more of a description of capacity to deliver and evaluate, rather than evidence of the underlying intervention.

Gaps and limitations

- No NZ-based trial or programme evaluation of any safer supply or enhanced agonist therapy intervention exists. Miles 2013 is the only NZ-inclusive published study, and only tested with a design that the authors themselves describe as limited (Miles et al., 2013).
- No randomised evidence for 'safe' supply interventions (peer-led, unsanctioned). Legal constraints make such trials impossible.
- No high-quality cost-effectiveness analysis specific to NZ. Bowring 2026 (Australia/ACT) is the closest comparison but relies on local / population parameters that may differ in NZ (Bowring et al., 2026).
- Heterogeneity of outcome measures across programme evaluations precludes formal, conclusive meta-analyses. The 50+ outcomes that make programmes substantively responsive / acceptable to PWUD are incompatible with systematic analyses of the evidence.
- Stimulant evidence base has been constrained by trial designs that minimise the psychoactive effects desired by PWUD.
- Māori-specific evaluation evidence is particularly absent. This represents both a gap, and an opportunity for innovative research in NZ.

In summary:

- Enhanced agonist therapies can work for treatment-refractory heroin dependence, which has been demonstrated in repeated RCTs, but remain broadly unavailable to the populations who would most benefit.
- Prescribed safer opioid supply appears to work at the programme level across multiple Canadian sites with consistent positive direction (but downsides at the individual and community levels that must be managed.
- Pharmaceutical psychostimulants for stimulant use disorder remain plausible, but not yet adequately tested under designs that respect what PWUD actually want from the intervention.

- Peer-led 'safe' supply has produced meaningful harm reduction in the single evaluation to date, with peer led-substantive design as both a source of benefit, and constraint on evaluation.

Don't use alone: Overdose prevention by witnessed consumption

Introduction

The potency and adulteration of a dose of an unregulated substance often cannot be ensured at the point of consumption. For drugs containing CNS depressants - most consequentially opioids, but also e.g. benzodiazepine adulterants and alcohol in combination - the central acute risk is respiratory depression, which can progress from observable to fatal within minutes if unattended.

Pre-emptively placing a watcher who can recognise an overdose, deliver basic first aid, administer naloxone where opioids are involved, and recruit emergency response if needed creates an immediate window for life-saving intervention.

Witnessed consumption is one of the broader categories of intervention reviewed in this report, with long operational histories. Insite (Vancouver, 2003) and the Sydney Medically Supervised Injecting Centre (Uniting MSIC, 2001) pre-date the 2010 search cut-off of this report, generating over two decades of operational data; seminal evaluations are captured indirectly through more recent systematic reviews and updated programme reports.

The substance landscape has shifted significantly since these original evaluations - most consequentially the rise of stimulant injection across previously opioid-dominant cohorts (Bartlett et al., 2026), and the emergence of fentanyl and synthetic opioid adulteration in North America.

The intervention

Witnessed consumption ensures that when an unregulated dose of drugs is self-administered, follow-up is available in the event of overdose. The intervention takes multiple forms, most often distinguished by whether the watcher is physically present and whether the service operates with or without state sanction:

- *In-person, lawfully sanctioned*: Safe Consumption Sites (SCS), Drug Consumption Rooms (DCR), Overdose Prevention Centres (OPC), Medically Supervised Injection Centres or Rooms (MSIC, MSIR), and Supervised Injection Facilities (SIF). Naming varies by jurisdiction but operational features overlap substantially. Formal services may also include mobile and home-based variants.
- *In-person, unsanctioned or pop-up*: Overdose Prevention Sites (OPS), buddy/spotter systems, and informal community arrangements (Perri et al., 2023). These services typically emerge in advance of formal authorisation, in response to acute local overdose events, and are characteristically peer-led.
- *Remote / virtual*: Phone-based overdose response services, of which Canada's National Overdose Response Service (NORS) is the most evaluated example. Virtual services were popularised during the COVID-19 pandemic, when public-health-mandated isolation increased solitary drug use and physical SCS attendance was constrained. NORS is staffed 24/7 by people with lived/living or shared experience of substance use, who maintain a phone connection during a person's drug use and can dispatch emergency response if the person becomes unresponsive (Matskiv G, 2022; Mocanu et al., 2024).

Many sites integrate NSP. Sanctioned variants commonly co-host drug checking, primary healthcare, mental health services, and case management. Across all formats, the same

fundamental benefit is provided: a sober and competent person who can guarantee an overdose will be managed with urgency rather than fatal delay.

The bulk of the evidence base derives from natural experiments around facility openings and closures, prospective cohort studies of attendees, ecological analyses of overdose mortality at neighbourhood and provincial levels, and mathematical modelling. Randomised controlled trials of SCS/DCR have been deemed both impractical and unethical (it is not reasonable to randomise individuals to a non-monitored condition for serious overdose risk), such that high-quality GRADE ratings cannot be earned. This is a consequence of the intervention's effectiveness, not evidence of ineffectiveness - important to note because the absence of RCT evidence has been used by some policy-makers as grounds for non-endorsement (Kerr T, 2025).

Effectiveness

Many seminal evaluations of safe consumption spaces precede the 2010 search cut-off applied in this report. Primary (pre-2010) findings are captured indirectly through Harm Reduction International's 2025 review of DCRs (Kerr T, 2025), the major systematic reviews of Potier (Potier et al., 2014), Levengood (Levengood et al., 2021) and Kennedy (Kennedy et al., 2017), and the more recent ecological and cohort work by Kennedy et al. (Kennedy, Hayashi, et al., 2019), Marshall (Marshall et al., 2011), Lalanne (COSINUS) (Lalanne et al., 2024), Rammohan (Rammohan et al., 2024), Bartlett (Bartlett et al., 2026), and Gariepy (Gariepy et al., 2025).

Reduced overdose mortality and morbidity

The most striking finding across the SCS evidence base is the absence of any on-site overdose deaths. Across decades of operation in multiple countries and millions of monitored injection events, no on-site fatal overdoses have occurred in sanctioned SCS during operating hours. Sydney's Uniting MSIC reported in 2025 that approximately 1.28 million injection events had been supervised since 2001, across which 11,205 overdoses had been successfully managed; cumulative figures by 2026 reached 1.34 million events and over 12,000 overdoses, with zero fatalities (Kerr T, 2025). This consistency - across jurisdictions, drug profiles, and operational models - is the most policy-relevant evidentiary signal in the section, even though the formal GRADE rating that observational data would attract is Very Low.

At the broader population level, SCS availability and use is associated with significant reductions in neighbourhood overdose mortality. Kennedy and colleagues' 2019 prospective cohort analysis reported an adjusted hazard ratio of 0.46 (a risk of less than half) for mortality among local PWID in association with frequent SCS use (Kennedy, Hayashi, et al., 2019). Rammohan and co.'s 2024 ecological-spatial study reported a 67% reduction in overdose mortality, with a dose-dependent relationship between proximity to an SCS (5 km down to <500 metres) that strengthened over time (Rammohan et al., 2024). The mortality benefit is consistently larger for people attending more frequently (Kennedy, Hayashi, et al., 2019), in locales with versus without SCS availability (Salmon (Salmon et al., 2010), Marshall (Marshall et al., 2011)), and where the proportion of total injecting events occurring within the facility is higher. Locale-based comparisons have not been corroborated in every review of the literature - some studies assessed by reviewers as having weaker designs (Levengood et al., 2021) and a more recent re-analysis of the SIF literature (Gariepy et al., 2025) produced more conservative pooled estimates, with a subsequent correction issued. The overall direction across the literature remains consistent.

Safer drug-taking practices and reduced BBV transmission

Systematic reviews in 2014 and 2021 collected observational evidence consistently showing reduced syringe-sharing and other harms among SCS-frequent attendees (Levengood et al., 2021; Potier et al., 2014). Vancouver's SIF cohort showed approximately halved odds of injection-related skin infection among frequent users compared with less frequent users (statistically borderline but directionally consistent), and improved vascular outcomes when injections could be performed more carefully or with peer assistance - reducing the cumulative number of injections needed. Across Vancouver (Kerr et al., 2005), Sydney (Milloy, 2009), and France (Lalanne et al., 2024), frequent users of SIFs reduced syringe-sharing by 69–90% compared with pre-SIF cohorts or comparator regions without access. Multivariate analysis of two Canadian cohorts showed SIF use frequency correlated with reduced HIV-seropositivity, indicating BBV transmission risk reduction in these settings (Kennedy, Hayashi, et al., 2019).

Addiction treatment and primary care engagement

Levengood's 2021 review summarised fair- to good-quality studies showing that frequent SIF attendance was associated with significantly increased rates of accessing addiction treatment and detoxification services - by factors of 1.4 to 1.7 compared with less frequent or non-users (Levengood et al., 2021). The 2024 COSINUS study of French PWID did not replicate this finding for OAT enrolment or HCV testing, but the authors attribute this to high baseline OAT and HCV-testing access in both case and control cohorts, rather than absence of effect from DCR exposure (Lalanne et al., 2024). Sydney's Uniting MSIC reported in 2026 that more than 26,650 referrals to other forms of treatment and support had been made cumulatively (Bartlett et al., 2026) - up from over 22,000 reported in HRI's 2025 DCR review (Kerr T, 2025) - reinforcing the engagement-as-outcome argument described earlier for safer equipment provision.

Reduced public disorder

SCS provision has documented benefits for surrounding communities, primarily through reduced discard of sharps and associated litter in public space. Wood and colleagues reported approximately halved syringe discard in the area surrounding Vancouver's Insite within several years of opening (Wood et al., 2006). Bartlett and colleagues' 2026 analysis of Sydney's Uniting MSIC found that as amphetamines came to dominate the drugs administered on-site - rising from 2% of injecting events in 2001 to 7% in 2011 to 50.1% in 2024 - incidents of challenging behaviour did not increase or correlate with stimulant injection (Bartlett et al., 2026). This finding directly addresses one of the standard policy concerns about extending SCS provision to stimulant-dominant cohorts: the empirical data from the closest available comparator do not support the prediction that stimulant injection drives behavioural escalation in supervised settings.

Potier et al. (2014) identified a single 2007 study showing a higher adjusted odds ratio for public injecting in SCS-proximate neighbourhoods, but this was attributable to demographic differences between case-control neighbourhoods (SCS are sited where public injecting already occurs, not the reverse) rather than the SCS increasing the rate (Potier et al., 2014). Public injecting itself is not only a community concern but a clinical one - fear of detection and rushing during use elevate overdose and vascular injury risk (Klee et al., 1999). Reduction of public injecting through SCS provision therefore produces both community and individual benefits.

Crime rates and community order

Levengood found studies generally supported reduced crime and public-nuisance metrics around SIFs, although the evidence on this outcome was rated weaker than for other parameters. The direction is consistent, but the precise magnitude is more ambiguous.

Virtual overdose monitoring

Programme evaluations of phone-based service demonstrates complete effectiveness against fatal overdose post-administration in the evaluations published to date. Matskiv's evaluation of NORS reported that of 222 unique callers across 2,172 calls, 53 calls involved adverse events sufficient to require ambulance dispatch - none of these resulted in death (Matskiv G, 2022). Mocanu (2024)'s retrospective cohort analysis of 4,501 calls from 331 unique clients corroborated this, additionally finding that 30.2% of clients preferentially used NORS even when a physical SCS was accessible - indicating that virtual services are not merely a substitute when in-person services are unavailable, but a preferred modality for a subset of users (Mocanu et al., 2024). Among the 191 clients (57.7%) who never had access to a physical SCS at the time of calling, the principal access barriers were geographic, temporal (calling outside operating hours), and route-related (sites not permitting on-premises smoking). Perri et al. discuss that virtual services may be a particularly accessible option for people who fear discrimination on the basis of (particularly gender) identity (Perri et al., 2022).

Safer inhalation spaces

As stimulant use has risen as a proportion of substance landscapes globally - the so-called '*fourth wave'* of the North American opioid crisis - safer inhalation spaces are increasingly being integrated into SCS (Gehring et al., 2022). The mechanistic and effectiveness arguments for safer inhalation provision are reviewed earlier in this report; in the SCS context specifically, safer inhalation spaces extend the protective effect of supervised consumption to people whose route of administration would otherwise exclude them from injecting spaces. Cortina and colleagues 2018 found that difficulty finding new crack pipes was negatively associated with willingness to use a safer smoking facility (adjusted odds ratio of 0.51, 95% CI 0.30–0.86), reinforcing the value of making equipment available, both overall and in consumption spaces (Cortina et al., 2018). Many existing SCS were designed for injecting; retrofitting for inhalation remains more of an operational frontier.

Cost effectiveness

Cost-effectiveness evidence for SCS provision is consistent in direction across modelling studies but is dominated by Canadian and European contexts. Earlier modelling studies (Andresen & Boyd, 2010; Bayoumi & Zaric, 2008; Jozaghi, 2014), all Vancouver-based) found favourable cost-benefit ratios for SCS provision, principally through averted HIV and HCV transmission and averted overdose mortality. NORS-specific modelling produced similar conclusions for virtual services (Viste et al., 2023).

The most directly applicable contemporary cost-benefit analysis is Bowring and colleagues' 2026 modelling of harm reduction interventions in the Australian Capital Territory (Bowring et al., 2026). For drug consumption rooms, the modelled benefit-cost ratio was 1.9 (95% CI 0.6–3.9) for a medicalised model and 2.7 (95% CI 1.2–4.4) for a nurse- or peer-led model. Notably, the nurse/peer-led model outperformed the medicalised model on benefit-cost grounds. Under sensitivity analysis modelling of a higher-toxicity drug market - the trajectory which many jurisdictions are now experiencing – the healthcare cost savings afforded by overdose-prevention spaces strengthen further. NZ-specific modelling does not currently exist; Bowring 2026 is the closest Australasian analogue.

For every dollar invested, Bowring's modelling suggests a drug consumption room could return approximately $1.90 to $2.70 in benefits through averted overdose deaths, reduced ambulance callouts, and shorter hospital stays. As context, the same analysis returned cost-saving ratios of

16.4 for take-home naloxone, 10.2 for opioid agonist treatment, 1.5 for safer opioid supply, and 1.4 for needle and syringe programmes – placing cost effectiveness of safe consumption spaces in the middle of the harm reduction intervention distribution under less acutely toxic drug landscapes, rather than the high end.

Relevance to Aotearoa New Zealand

No SCS, OPC, MSIC, or virtual overdose monitoring service currently operates in NZ New Zealand - sanctioned or unsanctioned, to our knowledge. Several considerations shape how the international evidence translates to our local context.

First, the proportional benefit of SCS is greatest in drug landscapes where CNS depressants (and their fatally potent adulterants) predominate. NZ's smaller opioid-using population means the proportional risk of depressant overdose is lower than in North American comparators, although this can change rapidly. Stimulants - the dominant injected drug class in NZ (Yu S, 2022) - carry a different acute risk profile, with fatal overdose less common but cardiovascular events, hyperthermia, psychiatric crisis, and injury still substantial. Safer inhalation spaces, given the dominance of methamphetamine smoking, are likely the most directly applicable SCS modality for the NZ context as it currently stands.

Second, the relative inapplicability of opioid-focused SCS arguments to NZ should be considered through two compounding lenses. SCS still provide value where stimulants predominate by (a) preventing overdose if/when contamination of stimulants with opioids develops, and (b) connecting people who use stimulants with peer supporters, wraparound services, and primary healthcare referral. Pre-emptively installing an SCS also provides resilience against the kind of supply-toxicity events that can occur suddenly / without warning (e.g. within a 24-hour timeframe). Safe consumption spaces installed before they are strictly necessary function as the population-level analogue of having naloxone available for individuals: not needed until suddenly they are.

Third, Sydney's Uniting MSIC is the closest available comparator for the NZ landscape, both geographically and demographically (Bartlett et al., 2026; Salmon et al., 2010). Most formal evaluations of MSIC outcomes occurred in the early years of operation (2001–2003) (MSIC Evaluation Committee, 2003), making it difficult to extrapolate cumulative present-day benefits to a hypothetical NZ implementation. The 2026 Bartlett analysis, however, provides the strongest contemporary evidence: the proportion of people injecting stimulants at MSIC rose from 2% in 2001 to 7% in 2011 to 50.1% in 2024, without a corresponding rise in challenging behaviour or operational disruption. The Sydney service has therefore demonstrated, in real-world data over more than two decades, that a supervised injecting model can adapt to a stimulant-dominant cohort without losing its core function.

Fourth, NZ's drug-injecting demographic is itself stimulant-dominated, more sharply than Sydney's. The Q4 2022 NZNEP drug use report indicated stimulants as the primary injected drug in approximately 55% of service occasions, followed by opioids (28%), steroids (11%), and other drugs (6%) (Yu S, 2022). The disparity is even more pronounced for clients self-identifying as Māori: for whom 71% of service occasions were intended for stimulants, 18% for opioids, 9% for steroids, and 2% for other drugs in Q4 2022. Any NZ SCS or virtual overdose monitoring service designed primarily around opioid injecting would be designed around a much smaller subset of PWID than seen in other countries. Designing around stimulant injection - with safer inhalation provision integrated - would more accurately reflect the substance landscape, particularly for Māori PWID.

Fifth, NZ's geographical dispersion presents a structural challenge to physical SCS coverage that virtual services are well-positioned to address. NORS-style phone-based services are functionally analogous to the existing National Poisons Centre helpline, which models a plausible delivery infrastructure for relatively low marginal cost. The Mocanu 2024 finding that 27.8% of NORS clients lacked any nearby physical SCS, and 17.5% called outside operational hours, suggests the virtual modality fills coverage gaps that physical SCS structurally cannot - a feature particularly relevant to rural and provincial NZ communities, where physical SCS would be unviable, but that a phone service could plausibly reach.

Existing NZ infrastructure provides plausible delivery vehicles for both modalities. NZNEP services have established physical premises, workforce, and relationships with both PWUD and PWID and could host an integrated SCS function (albeit under legislative and funding pathways that do not currently exist). Equity considerations are central to this consideration: Māori and Pasifika peoples, and rural populations face the highest barriers to existing health services and equitable outcomes, and any SCS implementation should be designed with Māori-led and Pacific-led service architectures from inception rather than as retrofit.

Quality of evidence base

GRADE. The SCS evidence base is entirely observational. RCTs are not ethically or practically possible - randomising individuals to a non-monitored condition for serious overdose risk is not defensible. Cochrane-level evidence synthesis is therefore not forthcoming.

The evidence consists of natural experiments around facility openings and closures, prospective cohorts, ecological and spatial analyses, retrospective cohort and time-series, and modelling. As Harm Reduction International's 2025 review explicitly notes, when the SCS evidence is considered within grading systems that accommodate non-experimental evidence (e.g. SIGN), SCS can be regarded as evidence-based interventions capable of producing a range of benefits (Kerr T, 2025). The *Low* and *Very Low* ratings produced under standard GRADE for individual outcomes therefore describe the constraints of generating evidence for a clearly beneficial intervention, not the consistency or magnitude of the effect.

- *On-site overdose mortality (zero fatalities across decades and >1.3 million events):* Very Low under standard GRADE classification, but with a critical contextual qualifier. The consistency of this finding across jurisdictions, decades, drug profiles, and operational models is unusually strong evidence for an unusually clean outcome. The Very Low rating reflects the design class; the directional certainty is high.
- *Neighbourhood overdose mortality reduction:* Low. Direction and dose-response relationship consistent; principal downgrade is the observational design and risk of confounding by neighbourhood / demographic characteristics.
- *Reduced syringe sharing and BBV-relevant practices:* Low. Consistent direction across Vancouver, Sydney, and France.
- *Increased addiction treatment access:* Low. Effect size increases among frequent users without existing accessibility only.
- *Reduced public disorder (syringe litter, public injecting)*: Low. Consistent direction, magnitude varies by setting.
- *Crime and public nuisance reductions:* Very Low. Direction supportive but evidence rated weaker than other outcomes by Levengood et al.
- *Virtual overdose monitoring (NORS-type services), prevention of fatal overdose*: Low. Direction consistent; sample sizes growing; valuable contribution to accessibility both for locales with – and without – physical safe consumption spaces.

- *Safer inhalation within SCS*: Very Low. Integration into SCS frameworks is a relatively new frontier.

Harms, limitations, and unintended consequences

- Displacement debates: The recurring concern that SCS attract drug-using populations to a neighbourhood was addressed for Sydney's MSIC by Freeman and colleagues 2005, who found no evidence of displacement effects (Freeman et al., 2005). The pattern of SCS being sited where public drug use already occurs (rather than generating it) is consistent across the literature.
- Local community impact: Siting processes can be politically contested. Documented post-implementation outcomes (reduced public injecting, reduced syringe litter) tend to be more favourable than pre-implementation projections.
- Workforce burden and vicarious trauma: Supervising overdose events at scale creates substantial cumulative emotional and psychological load on staff. Virtual services reduce some operational burdens (limited operating hours, geographic coverage) but do not resolve workforce trauma; this remains an unresolved operational challenge across both modalities.
- Equity of access: Women and gender-diverse populations show preference for peer-assisted and virtual modalities. Indigenous-specific service designs are sparse globally; license applications by Indigenous-led services have been rejected in Canada. Rural and dispersed populations are structurally under-served by physical SCS; virtual services partially address this.

Gaps in knowledge

- Peer leadership: the most harm-reduction-aligned SCS approaches are peer-led and frequently unsanctioned at inception, leading to operations below the threshold of standard publication. Vancouver's DULF provides the closest link between peer-led service and published evaluation; illegality of the model is the reason such evidence is so rare (Kalicum et al., 2024).
- Indigenous service architectures: virtually no published evaluation.
- Smoking and inhalation routes of administration: most existing SCS are designed for injection. Inhalation provision is recent and under-evaluated within the SCS-specific literature.
- Long-term outcomes: most evaluation periods are short. Sydney's Uniting MSIC and Vancouver's Insite are the primary sources of long-term operational data; both pre-date the search cut-off and are captured indirectly.
- No NZ-based evaluation: this intervention has not been trialled in NZ.

Across the SCS evidence base, the gap that recurs most consistently is the absence of evidence on outcomes for peer-led, Indigenous-led, and rural service models - the very service architectures most relevant for NZ implementation. The international literature provides strong evidence that SCS provision works under medicalised, urban, opioid-dominant conditions; weaker but still consistent evidence under stimulant-dominant conditions (Bartlett 2026 being the strongest); but almost no evidence under conditions that would best mirror an NZ implementation.

Managed alcohol programmes

Introduction

Managed alcohol programmes (MAPs) are a harm reduction intervention with people with alcohol use disorder, often made available to those who are vulnerable, such as the homeless

population. They provide a set and measured amount of alcohol at scheduled intervals in a controlled environment.

The intervention

MAPs sit between 'safer supply' and 'supervised consumption' in terms of their effect. The intended outcomes of these programmes are to 1) prevent withdrawal symptoms from developing, 2) reduce the risk of non-beverage alcohol being consumed (e.g. hand sanitiser), and 3) provide a safer environment for alcohol consumption and minimise the risk of violence and other harms that might occur in public space.

They also provide an opportunity to provide wraparound support and other services to those with alcohol use disorder, and may support retention in other types of healthcare, by supporting stability.

Evidence of effectiveness

Four studies are included in this literature review, all of which focussed on different populations and intervention types.

A 2022 scoping review of 32 studies globally (with none from NZ) pooled outcome measures including overall health, quality of life, alcohol consumption, housing retention, and service access. They concluded that MAPs offer a promising approach for people who are homeless and who have severe AUD (Smith-Bernardin et al., 2022). This built upon an earlier 'review of reviews', that specifically looked at substance use interventions for people who are vulnerably housed or homeless, which had also concluded that MAPs showed evidence of efficacy, though high-quality evidence was sparse (Magwood et al., 2020).

MAPs can also be implemented in hospital settings, to support managed withdrawal processes. Brooks et al. synthesised the findings of 42 studies in their systematic review; 28 studies were for hospital in-patients and 14 studies were in a community setting (Brooks et al., 2018). Most studies reported positive outcomes in relation to safely supporting withdrawal, whereas MAPs in the community supported stabilisation of consumption patterns, reduced harms, and facilitated other types of social and healthcare. The authors highlight the lack of consistent protocols for MAPs, particularly in healthcare settings, and that criteria for eligibility are unclear. Participants also prefer beverage alcohol over administration of IV alcohol, given that it supported reduction in cravings.

Programmes also have varying rules in relation to drinking outside of the MAP and there is a balance between maintaining programme participation and aiming to minimise 'outside consumption', but study authors note that this flexibility can be difficult to achieve within acute care environments (Brooks et al., 2018).

An evaluation of a South Australian MAP for Aboriginal peoples who were homeless and experiencing AUD was published in 2025 and highlights that MAPs are not only effective, but feasible and acceptable to clients (Thompson et al., 2025). The evaluation emphasised client perspectives through a mixed methods design, and found positive impacts across multiple domains of wellbeing, though the longer-term or sustained impacts of the programme have not yet been evaluated. The evaluation particularly supported clients to overcome barriers to accessing healthcare and community support, and culturally appropriate social connection.

Cost effectiveness

While no NZ evidence exists for the cost-effectiveness of MAPs, an international evaluation suggest that these programmes are beneficial. A Canadian cost-benefit analysis found that after factoring in the social costs of homelessness, it was estimated that there was a saving of

between $1.09 and $1.21 for every dollar invested in the MAP. These benefits were attributable to significant reductions in the frequency of health, social, and legal service use by clients (Hammond, 2016).

Relevance to Aotearoa New Zealand

There is a Managed Alcohol Programme in Wellington, called Te Pā Maru (noting that it is colloquially called a 'wet house')[20]. This programme is only accessible to men, and supports secure housing and access to wraparound services while not requiring abstinence from alcohol. While not formally evaluated, client and service reports are positive, and consistent with international evidence that the service supports clients to manage their drinking, reduce alcohol-related harm, and engage with support services while being in safe and secure housing.

Quality of evidence base

As assessed by GRADE the certainty of evidence is Low, but this is primarily due to the diverse outcome measures utilised and the use of study designs without robust control groups. Despite this, the findings across studies are relatively consistent, and it is positive to see that client satisfaction for MAPs is typically high.

Gaps and limitations

- Lack of NZ specific evidence, particularly for Māori clients
- Long-term evaluations would benefit the evidence base
- NZ services would need to consider how to provide other harm reduction services within MAPs for those with AUD and other co-occurring substance use disorders
- The Australian study indicated that female clients were particularly benefited by participation in an MAP, but gender specific findings are sparse. However, given that MAPs are often run within supported housing, it may be important to tailor programmes to account for gender specific needs.

Takeaway messages: harm reduction approaches

- Generally, the evidence for the efficacy and cost-effectiveness of harm reduction approaches is positive
- The body of evidence can be difficult to interpret as there are a range of outcome measures used, and studies are relevant to a particular communities needs and priorities
- Harm reduction programmes cannot be simply replicated from international to the NZ context, as they should be responsive and community-led
- Legal barriers exist to some harm reduction programmes, despite them having good evidence of efficacy
- Data are sparse on harm reduction programmes evaluated from a te ao Māori perspective

[20] https://www.rnz.co.nz/news/national/525859/te-pa-maru-signs-of-miraculous-results-at-wet-house-supporting-alcohol-dependent-residents and https://wellington.govt.nz/news-and-events/news-and-information/our-wellington/2025/05/one-year-anniversary-of-te-pa-maru

Legal models to support harm reduction

As discussed in the background sections, criminalisation of illegal drug use can be in and of itself a source of harm, and harm reduction evolved in response to prohibition. Therefore, drug policy settings can both exacerbate or reduce the overall harm from drugs, and create inequities in drug harm between population groups. There are various models for approaching drug law, ranging from full commercial legalisation to highly punitive criminalisation, though these are often broadly grouped into legalisation, decriminalisation, and prohibition.

A full review of all the drug law permutations is not within scope for this literature review, but four key resources are included below, and it is important to note that drug law should not be overlooked when considering the ways in which harm from drugs can be reduced.

Ritter et al. provide an overview of the varying models of decriminalisation of personal possession in an Australian context (Ritter et al., 2018). This work was then substantially expanded on by Hughes and Stevens, who include diversion and depenalisation within the models discussed, but importantly brings to bear the trade-offs inherent within any policy reform, and discuss implementation considerations (Hughes et al., 2019). The most well-known example of decriminalisation is Portugal, and has been well-evaluated, taking into account diverse outcomes such as drug supply, drug-related disease, crime, burden on the criminal justice system, and stakeholder perceptions (Hughes & Stevens, 2007).

The most up-to-date and contextually relevant work on this topic was released less than a year ago by the New Zealand Drug Foundation (New Zealand Drug Foundation, 2025b). This model drug law built on evidence of efficacy from literature, stakeholder interviews, focus groups, and the perspectives of people who use drugs. Without further summarising it here, this work should be considered the primary starting point for health-based drug law reform in NZ noting that this also receives public endorsement and support.

New Zealand specific evidence

It is important to note that in NZ, the Misuse of Drugs Act was amended in 2019 to codify police discretion for personal use and possession, affirming that police were able to refer people for a health-centred approach where this would be more beneficial to the public interest. While this amendment has not been fully evaluated (there was a preliminary evaluation conducted (Ministry of Health, 2021)), data suggested that while convictions did initially decrease, inequities persisted, particularly for Māori[21] and furthermore, conviction rates appear to be rising again (based on visual trends in justice datasets) suggesting that changes to policy or practice have not persisted.

Te Ara Oranga was an alternative to a justice-based approach to methamphetamine, which involved treatment support and wider community engagement. The evaluation of this pilot was generally positive (Walton, 2021), noting that the programme was not funded for national implementation. Drug courts have also been utilised and evaluated in the NZ context, with a 2019 report finding that the drug courts were associated with reduced reoffending, improved participant connectivity and wellbeing, and is cost-effective (Minstry of Justice, 2019). It is important to note though that the use of drug courts as a form of harm reduction is contestable, in that it could be argued that treatment in this context is less focussed on individual choice, and

[21] https://drugfoundation.org.nz/news-and-reports/why-discretion-missed-the-mark

may be considered coercive. Nevertheless, it is included in this report as an example of different legal models in NZ.

Takeaway messages: Legal models

- Drug law and how the law is enforced can be a source of drug harm and exacerbate harm or perpetuate inequities
- While there have been some efforts made in NZ to enable a health-based approach to drugs, these are either not widely available, or rely on 'discretion' that may be inequitably applied
- There are opportunities for NZ to reform its laws to enact a health-based approach to drugs, which would strengthen harm reduction

Indigenous approaches to harm reduction

In contrast to other sections contained within this review, this section seeks to broadly describe harm reduction principles and practices as identified across international literature. It also seeks to describe both Indigenous approaches globally, and local kaupapa Māori interventions which seek to reduce drug harms. This section is not intended to be an exhaustive list of all initiatives that are Indigenous-led (or Indigenous-adapted approaches of previously discussed "Western" approaches), but rather to highlight a sub-sample of global and local examples of Indigenous ways of being, knowing and doing that intersect with harm reduction and wellbeing promotion efforts within the context of drug use. No evidence quality assessment was undertaken for research included here.

Global Principles, Values and Frameworks

In the face of systemic inequity and ongoing colonisation process, Indigenous-led and culturally grounded drug harm reduction is developing across the globe. Although contested and controversial amongst Indigenous peoples, many Indigenous communities understand harm reduction, when broadly construed, as harmonious with Indigenous ways of being and caring. Although many diverse representations and examples of Indigenous harm reduction may exist, a collaborative example of overarching principles and values from the (Canadian Aboriginal Aids Network & Interagency Coalition on AIDS and Development, 2019) are:

- **Decolonisation**: going beyond individual behaviour to address systemic/structural issues that impact indigenous people
- **Indigenisation**: building new ways of being and doing that are grounded in indigenous ways of knowing
- **Holistic and Wholistic**: ensuring equitable access to all determinants of health, in addition to care that is inclusive of, but much broader than, reducing substance-related harms
- **Inclusive**: programs and practices must respect diversity across personal, social and historical domains of a person in addition to their substance use
- **Innovative and Evidence-based**: Indigenous harm reduction should seek to combine the best of both indigenous and mainstream approaches to ensure that people have access to the best care. This should include robust evaluation/assessment that respects different epistemologies

The inclusion of traditional knowledge and cultural traditions are an important aspect of Indigenous harm reduction in practice (First Nations Health Authority, n.d.), and can inform the decolonisation and/or indigenisation of harm reduction more broadly (National Harm Reduction Coalition, n.d.-a). Examples of these acts may include: using Indigenous symbolism, arts, and

language within educational resources and harm reduction services; using Indigenous-designed frameworks and models of care; and incorporating traditional practices or ceremonies within service delivery (National Harm Reduction Coalition, n.d.-a). Furthermore, culturally informed implementation is likely to facilitate acceptance of (culturally adapted) traditional or contemporary Western harm reduction initiatives, such as opioid-assisted therapy or naloxone distribution.

During the ongoing toxic drug crisis in North America, the First Nations Health Authority of British Colombia, Canada conducted a literature review of Indigenous approaches to harm reduction across Canada, the United States, Australia and NZ. Their review of 37 documents found that harm reduction approaches deemed successful were:

- Indigenous-led and delivered, informed by the needs of Indigenous communities
- Include culture, ceremony, traditional medicines and knowledges
- Weave together Indigenous and western approaches to health and/or "Two-Eyed Seeing" (Etuaptmumk, balancing the views of Indigenous and Western knowledge systems)
- Are strengths-based, providing opportunities for capacity building and including peers in programming
- Support intergenerational collaboration guided by Elders and Knowledge Keepers
- Prioritise connection and relationship building, as well as the inclusion of family and community
- Provide opportunities for connection with the land and engaging in land-based activities
- Seek to achieve wholistic health by addressing mental, emotion, spiritual and physical well-being
- Ensure wraparound supports across a strong continuum of care

Broadly speaking, these examples of best practice reflect the previously identified principles and values of Indigenous Harm Reduction and highlight a focal shift towards more relational thinking than that offered in traditional Western harm reduction approaches. Taking a more critical approach, the Native Youth Sexual Health Network (2014) developed the Four Fires Model, which offers a reinterpretation of harm reduction as it relates to colonialism, centring on Indigenous knowledge and ways of being to ultimately reduce harm experienced by Indigenous people. The Four Fires model looks to move beyond the traditional Four Pillars of drug harm minimisation (prevention, harm reduction, treatment, and supply reduction / law enforcement), which they argue can be used to reinforce colonial ideals about health and oppress Indigenous peoples. The Four Fires include cultural safety, reclamation, self-determination, and sovereignty, all of which can be interpreted within unique Indigenous contexts, particularly those in northern, regional and remote areas of North America for which mainstream harm reduction initiatives do not always cater to.

Global Indigenous Drug Harm Reduction Approaches

A recent scoping review found that for Indigenous people who use drugs, varied structural barriers, mistrust of healthcare services, and racism are major considerations for harm reduction, as is the cultural appropriateness of harm reduction as perceived by non-drug using community members (Zolopa et al., 2025). Despite this, Indigenous people who use drugs tend to have favourable attitudes towards harm reduction in general, and those that are Indigenous-led and more culturally informed and culturally safe are likely to have greater harm reducing and wellbeing promoting effects. Indeed, the above principles, values, and practices in addition to how drug issues may intersect with broader socioeconomic and cultural wellbeing issues are

exemplified in the practices of organisations like the Native Women's Shelter of Montreal (and their addictions program) and the Tawâw Outreach Collective (Cheetu et al., 2025). Despite the existence of exemplary services, it should also be noted that significant access issues with respect to culturally relevant services and/or the resourcing of such services across settler-colonial countries remain (Kruse et al., 2022).

Below, we discuss review literature that highlight factors considered important for reducing drug harm for Indigenous peoples as they relate to specific peoples, drugs, or approaches. We also describe several case examples of Indigenous harm reduction approaches from Australia, Canada, and the United States, to highlight some of the diversity within Indigenous drug harm reduction.

In the Australian context, a comprehensive review of alcohol and drug treatment for Aboriginal and Torres Strait Islander peoples emphasised that while Western clinical interventions can be effective, their success is likely to be enhanced by including the best of mainstream approaches and adapting these to better fit Indigenous Australian worldviews and ways of being (Tracy et al., 2023). Importantly, the authors emphasised the central role that Aboriginal community-controlled health organisations (Indigenous-led, community-run primary health services) can play in delivering this culturally secure care. By integrating the best of clinical treatments within a holistic framework of social, emotional and cultural wellbeing, these services can better serve First Nations Australians. However, not all First Nations Australians are able to access such services, or wish to remain relatively anonymous within mainstream services, and thus there is a need for mainstream services to adapt internal cultures and clinical approaches as well. This is also important to consider given the diversity of communities within Australia which highlights that a 'one-size-fits-all' approach (which some Western countries have also attempted to apply in the past) is not suitable. Across both mainstream and community-controlled organisations, it is also clear that inclusion of Aboriginal and Torres Strait Islander staff, and cultural awareness and safety training for non-Indigenous staff, contribute significantly to the value of Indigenous drug treatment in Australia.

In a similar vein, a systematic review of community-based models in Australia found that support services that culturally safe, holistic and integrated drug outreach services that are led by local First Nations peoples are likely to be more beneficial for Indigenous Australians with drug use concerns (Krakouer et al., 2022). While Western evaluative metrics sometimes struggle to capture the full impact of these holistic programs, evidence suggests that strengths lie in their relational nature and their ability to integrate AOD support within broader social and emotional wellbeing. This is supported by a scoping review of Indigenous Australians lived experiences within AOD treatment, in which a strong cultural base, and holistic strengths-based services that are non-judgemental, non-coercive and non-punitive, were viewed as critical to drug treatment engagement for Indigenous Australians (Heath et al., 2022).

The mechanisms in which successful treatment can be realised was also discussed in a realist review by Henderson and colleagues (Henderson et al., 2023). Within the context of opioid dependence treatment for Indigenous peoples, the authors identified that success is not driven by clinical intervention alone, but by broader contextual factors such as compassion and self-determination. Although evidenced differently across individual (i.e. interpersonal) and structural levels, both factors were identified as critical to well-functioning and effective treatment programs. These aspects contribute to the production of positive health outcomes that extend beyond reductions in opioid use to more broad wellbeing goals and the wellbeing of the

community, emphasising the positive influence that strong values-based practiced can have for Indigenous peoples.

While the reviews establish an evidence base for the importance of Indigenous-led interventions, the practical application of these principles is diverse, reflecting the unique cultural ways of being, knowing and doing of Indigenous peoples globally. The following case examples from Australia, Canada, and the United States illustrate how these underlying principles can be operationalised. They include Indigenous framework development, indigenization of Western medicalised treatment and the adaption of clinical models, holistic harm reduction programmes and “culture as care” approaches.

At a systemic level, the importance of shifting from clinical metrics to broader principles and values like self-determination and accountability is further articulated within the development of the Australian Fetal Alcohol Spectrum Disorder (FASD) Indigenous Framework (Hewlett et al., 2023). The framework draws upon both Western and Aboriginal wisdom in relation to FASD to advocate for change that can produce healing-informed and strengths-based change for Aboriginal peoples in relation to knowledge, assessment, diagnosis and support. Importantly, it calls for two streams of change that includes both Aboriginal peoples and non-Indigenous clinicians. For clinicians, it advocates for decolonisation, the dismissal of deficit-based framing and the surrender of clinical control in favour of Indigenous leadership. Simultaneously, it emphasises the role of Indigenous communities in reclaiming cultural protocols and collective responsibilities to support people affected by to FASD. By framing the reduction of FASD-related harms as dependent on a dual process of relational healing and systemic reforms, the framework operationalises the principles of Indigenous Harm Reduction (and the practice values outlined by (Henderson et al., 2023)), ensuring that the burden of change is shared rather than placed solely on the particular individuals or Indigenous communities.

Addressing the most acute aspects of the drug poisoning crisis during the COVID-19 pandemic, Fort Albany First Nation (a Cree First Nation community) implemented a buprenorphine-naloxone program in remote Northern Canada (Zuk et al., 2024). The program was ultimately deemed successful due to the holistic and multi-faceted approach taken (alignment with the Medicine Wheel Framework), which included physical (e.g. specialised clinics and logistical streamlining), cognitive (e.g. Cree language speakers and Indigenous knowledge), emotional (e.g. community consultation for belonging) and spiritual aspects (on-the-land support, purposeful spirituality incorporation). This supports the idea that treatments which have traditionally been seen as highly medicalised can be indigenised when governed by local leadership and delivered through a cultural lens, effectively aiding communities in areas previously underserved by mainstream services in ways that contribute to health and Indigenous empowerment.

Also situated within the context of the drug poisoning crisis, the First Nations Health Authority (British Columbia, Canada) created the "Not Just Naloxone" program, a train-the-trainer workshop designed to increase harm reduction education and skills within First Nations communities. The program moved beyond simple distribution of overdose reversal kits to the provision of a culturally grounded training programme that also increased support networking while increasing understanding of underlying causes of substance use issues within Indigenous communities (Levine, 2021). Respondents who took part in the workshops reported increased knowledge and confidence presenting about harm reduction, in addition to greater feelings of preparedness regarding overdose responding. Over 2,400 community members were trained by trainers, which was said to positively influence harm reduction attitudes. By framing naloxone as a tool for community empowerment alongside broader decolonising and Indigenous harm

reduction education, the program was able to foster a collective responsibility and agency within Indigenous communities.

Relatedly, an investigation by Marsh and colleagues assessed the impact of implementing a blended Indigenous Healing (including sharing circles, drumming, smudging, sweat lodge ceremonies, presence of Elders) and Seeking Safety treatment model, a Western psycho-education model effective for the treatment of co-occurring post-traumatic stress and substance use disorders (Teresa Naseba Marsh et al., 2016; Teresa Naseba Marsh et al., 2016). Across the sample of Aboriginal people who reported experiencing intergenerational trauma, substance issues, and loss of culture, findings indicated that the blended model was beneficial in several ways. Quantitatively, the authors found a reduction in trauma symptoms across all subscales of the Trauma Symptom Check-list (55% total reduction from baseline) and reductions in historical grief (Teresa Naseba Marsh et al., 2016), while qualitative findings highlighted greater personal understanding of trauma, increased connection to culture, and the regaining of child custody by some female participants (Teresa Naseba Marsh et al., 2016). By integrating the Western trauma-informed protocols with Indigenous healing practices, the project further supports that clinical tools can be effective for Indigenous people when they are deployed within an Indigenous framework that allows for a culturally safe and inclusive environment.

Nelson and colleagues (2024) conducted a feasibility pilot of virtual harm reduction Talking Circles during the COVID-19 pandemic as a low-barrier harm reduction initiative for American Indian and Alaska Natives with alcohol use disorder (Nelson et al., 2024). This digital adaptation of a traditional practice allowed participants to access peer support and harm reduction education within a culturally familiar format, which was reported on favourably in terms of acceptability, effectiveness, and cultural alignment by participants. Although causal inferences cannot be made, significant decreases in alcohol use days and alcohol-related harm across time, and health-related quality of life and spirituality measures increased as a function of session attended. The pilot study demonstrates that Indigenous cultural practices like Talk Circles can be successfully translated into virtual spaces to meet changing needs within contemporary society. This shift mirrors developments in Australia, where a significant amount of work has been undertaken to redesign the SMART recovery program to better fit Aboriginal and Torres Strait Islander peoples (Dale, Conigrave, et al., 2021; Dale, Lee, et al., 2021; SMART Recovery). Informed by the core tenets of the structured peer support SMART recovery model, YarnSMART was developed following research and development work with Indigenous Australians. Discussion highlighted a need to shift away from formal and clinical Western techniques (i.e. cognitive behavioural therapy, motivation interviewing) towards a more relaxed and relational style. In their place, the program is based upon recovery-focussed yarning circles, an Indigenous way of sharing knowledge and storytelling, grounded in country, culture, community, connection. As of April 2026, the program's sustained uptake is evidenced by over 100 trained facilitators and 32 registered YarnSMART meetings nationwide (SMART Recovery).

In the United States, the development of Drum-Assisted Recovery Therapy for Native Americans (DARTNA) provides another example of how traditional practices can be a therapeutic treatment focus. Led by Daniel L. Dickerson, DARTNA utilises drumming as the core treatment component, used alongside talking circles and the 12 Steps of recovery from Alcoholics/Narcotics Anonymous within a Northern Plain Medicine Wheel Framework. It also utilises the specific Native American perspective of the Medicine Wheel and 12 Steps program developed by White Bison, Inc. (Dickerson et al., 2021). Beginning with initial focus groups, findings highlighted the potential benefits of drumming as both medicine and facilitator of positive cultural identity

across American Indian and Alaska Native people (Dickerson et al., 2012). Subsequent pre-testing was promising regarding DARTNA, where participants (with past or current substance use dependence) who completed or met the halfway point in the program-maintained sobriety or reduced substance use (Dickerson et al., 2014). After adjustment and finalisation of the DARTNA treatment manual following feedback from the pretest study, the treatment was investigated in a feasibility randomized controlled trial (Dickerson et al., 2021). In brief, at the end of the 12-week treatment findings showed promising results (using effect sizes) regarding the DARTNA group's physical health, less drinks per day (fewer) and lower odds of cannabis use in the past 30 days, and a statistically significant difference in cognitive functioning that favoured the DARTNA group over controls. However, at three-month follow-up, DARTNA participants reported more drinks and cigarettes per day than the control. No statistically significant improvements were observed, which may have been due to significant participant enrolment in residential treatment programs and engagement in traditional activities. The findings suggest that while cultural interventions can successfully address wellbeing in a holistic way, their long-term efficacy may require sustained community connection rather than time-restricted engagement. Further work regarding DARTNA is ongoing.

Lastly, a notable example of what could be termed "culture-as-treatment" can be found in a trial implementation of the Blackfeet Indian Culture Camp in Montana, USA (Gone & Calf Looking, 2015). Four male clients engaged in an immersive alternative to mainstream residential treatment, which utilised traditional Pikuni cultural practices as the primary intervention. This was based on a return to pre-reservation Blackfeet life, "living off the land" and included ritual participation, traditional skill development and other activities. Importantly, the nature of the camp was flexible, sensitively guided, and appropriately paced to ensure comfort and quality. The boundaries between who were clients and who were Blackfeet traditionalists (who aided in the camp function) were also blurred in such a way that engagement and status were levelled, making for an inclusive environment. The camp only went on for 12 days due to constraints, however, all clients reported that the camp was both novel and distinctive in its approach, expressing an appreciation for the experience which was meaningful to them. As the authors describe, clients were "invited to chart a new way forward in their lives that self-consciously harkened back to the Blackfeet past… the therapeutic solution to client problems can be seen as merely a specialized instance of what already unites Blackfeet tribal members together as a common people: the shared postcolonial obligation to fashion workable identities and modes of living that concomitantly consolidate both an honourable indigenous past and a promising indigenous future" (Gone & Calf Looking, 2015) (pg.87). According to the authors, these processes were largely dependent on community and spirituality, which were fundamental to camp life. Because of its value to the community, the camp was offered in subsequent summers without external funding (Gone, 2022). In summary, the camp challenges the necessity of Western clinical interventions *and* adaptions of these interventions in favour of reclamation of traditional ways of being, doing and knowing that can be in themselves, powerful harm reduction mechanisms.

Māori Harm Reduction Principles, Values and Frameworks

To address persistent inequities in wellbeing for Māori, harm reduction strategies cannot sit as 'one-size-fit-all' models. Research consistently demonstrates that the integration of Māori culture components across both mainstream and Māori-specific programming is important drug harm reduction and treatment (Huriwai, 2002; Huriwai et al., 2000). Historically, Māori-specific drug services and programs have been abstinence-focussed, reinforced by the view of some

Māori that alcohol is alien to Māori culture (Sellman, 1997), and perhaps emphasised further if drugs are viewed as tools of colonial disruption. Although beyond the scope of the current work, the historical emphasis on abstinence in Māori-specific services could also be viewed as an internalisation of colonial morality, and this tension can create moral distress for Māori practitioners who are bound to abstinence models while their cultural values dictate a more inclusive, relational approach. The Māori cultural context is quite unique globally, as a current lack of evidence would suggest that Māori did not regularly use psychoactive substances prior to colonisation. Although tensions between abstinence-only and harm reduction approaches remain, traditional Māori values do not suggest that abstinence should be the standard approach for interventions to substance-related challenges. Rather, Māori values naturally align with the wellbeing focus of harm reduction, which in principle, should remain free of the often paternalistic and punitive nature of traditional abstinence models. Consequently, shifting more strongly towards harm reduction can be conceptualised as reclamation and uplifting of manaakitanga. Harm reduction is not a foreign concept to Māori, with traditional practices like karakia, rāhui, and the work of tohunga, presenting traditional examples of what is in principle harm reduction. Similarly, Māori Wardens present a contemporary example of a community-based, harm reduction intervention which specifically aimed to reduce drug harm in the 1860s (Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation, 2025). While Māori Wardens initially operated within a legislative framework to manage the social impacts of alcohol, their core function arguably represented an early assertion of Mana Motuhake, that Māori communities are best positioned to care for Māori. This could be seen as an attempt to shift the focus from punitive state intervention toward community-led care.

Building on earlier threads regarding the importance of a holistic approach to addressing drug-related harm, McLachlan et al. have also formally suggested applying an understanding of Whānau Ora and whānau centred practice to address drug-related harm (McLachlan et al., 2015). The Whānau Ora framework, discussed in the context of parental substance and child welfare, shifted the focus of intervention from individual clinical pathology (i.e. substance use disorder) alone, to the collective wellbeing of the whānau. The authors point out that effective harm reduction interventions are not based solely on comprehensive health assessments. Rather, they go beyond by taking a whānau-centred approach, addressing intergenerational factors and social determinants such as housing, education and employment. It should be reiterated that Māori understanding of problematic drug use is that it is a symptom of other underlying issues (e.g. intergenerational trauma, lack of identity). By taking a holistic Whānau Ora approach to problematic substance use, practitioners can promote self-determination and support whānau in taking the lead in achieving their wellbeing aspirations.

This conceptual shift has contributed to the development of a contemporary applied model that attempts to work with individuals and their whānau towards collective wellbeing. McLachlan and Waitoki's (2024) Pae Tata Pae Tawhiti, combines Western clinical practices and insights within an Indigenous harm reduction framework. This trauma-informed, brief and early intervention Indigenous harm reduction practice framework provides guidance on both practical steps and principles to help tangata whaiora achieve their wellbeing aspirations. The framework remains culturally grounded, embedding mātauranga Māori, the well-known Māori health model Te Whare Tapa Whā (Durie, 1985), and wider whānau and environmental considerations which are also important for Māori health (Durie, 2009). Alongside this, the framework draws on motivational interviewing and talks therapies, mindfulness, and psychometric screening tools as means to support whānau dialogue about their situation. Although the framework is relatively new, their

"critical components" apply a Māori worldview to harm reduction that coheres with international Indigenous literature:

- **Whakapapa**: Substance use harm reduction must consider the history and relationships between culture and community-specific harms, particularly colonisation and intergenerational trauma
- **Huanui oranga**: Incorporating the strengths, preferences, and strategies of Indigenous communities must be included to accurately and effectively respond to substance related harms
- **Mauri ora, Whānau ora and Wai ora**: Harm reduction efforts must seek to increase quality of life as defined by Indigenous communities
- **Ngā take pū o te tangata:** Harm reduction must be guided by the values and principles of Indigenous peoples

These components emphasise the importance of holistic practice guided by the Indigenous people(s) and their world view, which are further recognised within the values that underpin the acronym TAWHITI: Tū maia; Aroha; Whanaungatanga; Huritao; Ināianei; Tautoko; and Ihi (for further information, see McLachlan and Waitoki, (2024)). These principles also largely reflect those produced following a series of community hui across NZ by Whare Tukutuku and (Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation).

The language used with respect to drugs in NZ, both in English and te reo Māori, is also recognised as influential and a potential source of drug-related harm (Brausch, 2023). As Brausch indicates, stigmatising language can increase isolation and feelings and shame, which can drive harmful substance use and reduce help-seeking behaviour. From a Māori perspective, discrimination and stigmatising language used against a person can deprive them of their mana, inhibiting their potential to heal (Koro Hata Temo, 2022, cited in (Brausch, 2023)). As such, within a drug harm reduction context, language be mana-enhancing, seeking to uplift and promote autonomy without contributing to harm itself. A practical application of this shift acknowledging the potential impact language can have in the health sector, Te Reo Hāpai, a Māori language glossary developed by Keri Opai (Opai, 2020). Combining lived experience and clinical input the glossary seeks to reframe how we talk about drugs (in addition to mental health and disability more broadly) through the use of person-first, strengths-based (or neutral) language to reduce stigma and discrimination. The glossary is now in its second edition and is likely to continue developing as changing language around drug use is an important facet of harm reduction within NZ.

Māori Approaches to Reducing Drug Harm

In the following section, we highlight some local examples of Māori approaches to drug-related treatment, followed by general discussion of ongoing work that does not exclusively seek to address drug-related harm, but also aids in its reduction through wider engagement with services and activities that aim to improve wellbeing more broadly. These approaches rely on having a well-funded and trained Māori AOD workforce (Whare Tukutuku, 2026)

The efficacy of Māori approaches can be observed in residential settings that prioritise cultural identity as a part of a broader clinical approach. Research into Kaupapa Māori Alcohol and Other Drug (AOD) residential treatment highlights that success for Māori youth and whānau is often predicated on re-enculturation (Kapuaahiwalani-Fitzsimmons, 2015). For example, evaluations of Rongo Atea (Paki, 2010) the Higher Ground Māori Programme (Waight, 2012), and He Waka Tapu's Mauri Ora Experience (Carswell & Kaiwai, 2023) demonstrate that Māori-specific

structured residential services can significantly benefit whānau to make positive changes regarding their drug use.

In addition to that highlighted above, there are many Kaupapa Māori services operating across NZ that work with whānau to reduce substance-related challenges. Many services operate independently and draw upon different modalities within their services. Although many of these will be underpinned by well-known Māori health frameworks such as Te Whare Tapa Whā (Durie, 1985) or Te Wheke (Pere, 1997), little literature exists regarding the techniques used or programmatic components deployed across these services, and/or the evidence of their success from a traditional Western perspective. It is also important to note that evaluation from a Western perspective may be inappropriate in these contexts, yet knowledge gaps exist in relation to evaluation from a Māori perspective. Some case examples are provided below to highlight different ways in which Māori ways of thinking, being and doing are used for the purpose of reducing drug-related harm.

Similar to other Indigenous peoples, Māori have looked to offer drug treatment approaches developed in Western countries that are altered to better fit with Māori ways of thinking, being and doing. One such example is Kia Taumata Te Oranga, a Matrix Model based programme offered by Te Piki Oranga. This serves as a clear example of how an intensive and structured, abstinence-based outpatient program can be re-framed through a Māori lens to benefit Māori who experience harm related to methamphetamine use and who have abstinence goals (Te Piki Oranga, 2020). Kaupapa Māori was also integrated into the Matrix Model program offered as part of Te Ara Oranga, which one practitioner affectionately called "weaving in the magic" (pg. 63, (Walton, 2021)), although in this case, the Matrix Model was not formally adapted. Other work that combines both Māori and Western approaches continues to develop. For instance, Tū Wairua (Hodge, 2025) is a relatively recent programme of work based on the potential role that psilocybin (or related compounds) can play in the context of problematic substance use. The project takes a Kaupapa Māori approach to healing, informed by prior findings of Western 'psychedelic science' (also called psychedelic assisted therapy) as well as historic and contemporary use of psychedelic[22] compounds by other Indigenous communities. Further examples of ongoing development that combine both Western and Indigenous approaches include a Kaupapa Māori contingency management intervention (Health Research Council, 2024), and a Māori adaption of the SMART recovery program.

Some Māori organisations also utilise uniquely Māori approaches in addressing mental health challenges, including drug-related issues, relatively independent from Western treatment. Developed by Diana and Mark Kopua, Mahi a Atua (Kopua et al., 2020) is based on pūrākau (creation stories). It utilises a plethora of different traditional narratives as therapeutic framework, allowing whānau to see their own issues mirrored in the experiences of the Atua. Through externalizing issues through a Māori ontological lens, Mahi a Atua shifts from individual pathology to a more collective and shared understanding of whānau problems towards healing. This approach provides a culturally safe environment where the reclamation of identity and the uptake of ancestral knowledge can be a catalyst for change. Elsewhere, kaupapa Māori services offer specialised wānanga (e.g. Te Ahi Wairua o Kaikōura), collective spaces in which traditional methods, grounded in tikanga, mātauranga Māori, and other Māori modalities are used to help whānau heal and reconnect with their culture, uplift wairuatanga and promote self-determination. Each provider is unique in the foundation and delivery, although all are grounded

[22] The term is used in this context to describe a sub-class of hallucinogenic drugs

in Māori ways of being, knowing and doing. Although little evaluative material exists regarding (and much of knowledge shared and techniques used are considered tapu, and must be protected), whānau consistently report positive outcomes. Māori therapeutic paradigms that depart entirely from Western therapeutic frameworks or therapies (which may include some wānanga) also represent a "culture-as-treatment" paradigm that can be considered acts of decolonisation/indigenisation in contemporary society. By centering Te Ao Māori as a therapeutic agent in and of itself, reclamation of a Māori way of being can be seen as an act of decolonisation and traditional healing. Rejecting the assumption that clinical action is necessary and moving healing power back to the Māori community can assert that for Māori, effective harm reduction is a self-determined pursuit of collective wellbeing.

Discussion regarding Indigenous Approaches

A significant limitation of current reviews is a reliance on peer-reviewed, English-language articles. As noted by Zolopa et al. (2025), a vast amount of sophisticated harm reduction work occurring within Indigenous communities remains 'invisible' to mainstream science because they are not published in the traditional scientific manner (Zolopa et al., 2025). Many successful Indigenous initiatives are likely not documented in this way due to resource constraints, workplace priorities that favour frontline delivery over publication, or general misalignment with Western academic or other incentives. Similarly, a lack of documentation is also likely a product of structural inequity and resource constraints due to underfunding, leaving little room for public documentation. Indigenous providers are often required to use predetermined Western metrics to secure and maintain funding. This could put pressure on providers to change or dilute their interventions to ensure institutional survival, and could undermine the relationship building and maintenance that is often critical to Indigenous healing. Consequently, the true scale of Indigenous-led approaches and their success is likely underappreciated. In general, this would suggest that policymakers must continue to look beyond traditional outputs and engage directly with community-led reporting and practice-based evidence to understand what is working for the Māori community.

Furthermore, there is an underlying tension between Indigenous and Western evidence. While Indigenous harm reduction principles or values often mention evidence-based practice, they also discuss decolonisation, which could include change to the evidence-based practice system itself (Lucero, 2011). Often, Western evaluation standards (such as randomised control trials) are not feasible, or are inadequately equipped to measure Indigenous approaches due to differences in what is considered to be 'the truth' and valid and acceptable proof. Similarly, design elements can preclude certain types of evaluation due to standardisation or other methodological difficulties (for example, see (Gone & Calf Looking, 2015). Such tensions regarding evidentiary standards are a contributor to an 'evaluative gap' (for further discussion, see Gone (2012); Rolleston et al. (2020)). In general, Indigenous approaches tend to be largely described but not evaluated in the Western sense. However, they frequently utilise practice-based evidence (outcomes generated in real-time) and community feedback and accountability that is not capture in traditional evaluations. Indeed, there has been discussion of shifting from simply describing to developing robust evaluation frameworks that respect Indigenous ways of knowing, being and doing (e.g. (Gone & Calf Looking, 2015; Krakouer et al., 2022)). However, this transition will require creating Indigenous-led evaluative metrics that can stand up to, or challenge, Western paradigms. Indeed, Kaupapa Māori evaluations are already undertaken in the drug field (e.g. (McCarty & de Fossard, 2024)), and development of this area should continue, consistent with Kaupapa Māori evaluation principles which include tino rangatiratanga, taonga tuku iho, and

ako, while recognising the value of whānau, addressing socioeconomic challenges, to uphold Te Tiriti and to achieve the kaupapa in a respectful way[23] .

There is also consideration to be had regarding the differences between Indigenous-informed (i.e. Western models with cultural components), Indigenous-adaptions of Western models (which may involve significant changes), and Indigenous- led approaches that rarely draw upon Western models. There is a valid cynicism regarding the ways in which certain approaches are designed, implemented and practiced, particularly when significant power imbalances in the programmatic structure and practices within the drug harm reduction space exist. In best practice terms, Indigenous harm reduction requires moving beyond simply consulting Indigenous peoples with respect to Western frameworks, towards a space in which Indigenous peoples are empowered to design, deliver, and evaluate their own systems (Krakouer et al., 2022). As argued by (Hirchak et al., 2023), prioritizing Indigenous methodologies is a necessity for increasing health equity. Adapting Western approaches indeed can be a good starting point, but within NZ, the ultimate goal should be the realisation of tino rangatiratanga within the health sector.

Collectively, the above global and local examples demonstrate a selection of different Indigenous approaches to the reduction of drug harm that show both diversity in development alongside, and deviation away from, Western harm reduction approaches. They largely move beyond reductionist approaches and reframe substance-related harm as a symptom of broader systemic issues, including cultural disconnection and colonial violence. The success of these models' likely rests on their ability to restore tino rangatiratanga (collective self-determination) and mana motuhake (autonomy) to those they serve. As drug treatment and harm reduction continues to evolve globally, evidence suggests that the most promising pathways toward health equity lie in shifting power and resources away from punitive individual and state-based systems alone, towards Indigenous-led, holistic, relational and decolonial frameworks and practices. Ultimately, achieving wellbeing for Indigenous (and non-Indigenous) peoples within the context of drug problems likely requires a commitment to He Awa Whiria (a braided rivers approach) (Macfarlane, 2015), where both Western and Māori understandings and tools are respected, the rivers flowing both distinctly and in intersecting ways. To do so, equitable resourcing must be ensured. Furthermore, it remains critical that Te Tiriti is upheld as a foundational constitutional document, and that other Māori principles are not just referenced in drug policy but are foundational drivers of how harm reduction is conceptualised and practiced. For alcohol, a 2022 report highlights how Te Tiriti could be given appropriate effect in alcohol law to reduce harm (Maynard, 2022) and the recent report by the NZ Drug Foundation outlines how drug laws should be reformed to appropriately uphold Te Tiriti (New Zealand Drug Foundation, 2025b).

Takeaway messages: Indigenous harm reduction

- Indigenous harm reduction incorporates principles of decolonisation, indigenisation, holistic wellbeing, inclusivity, and innovation
- To address persistent inequities in wellbeing for Māori, harm reduction strategies cannot sit as 'one-size-fit-all' models
- Many successful Indigenous initiatives are likely not documented formally due to resource constraints and the true scale of Indigenous-led approaches and their success is likely underappreciated

[23] An overview of kaupapa Māori evaluation is provided at https://www.evalindigenous.net/blog/kaupapa-maori-evaluation-evaluation-by-for-and-with-maori, but noting that adjustment may be required for AOD services and harm reduction.

- Evidence suggests that the most promising pathways toward health equity lie in shifting power and resources away from punitive individual and state-based systems alone, towards Indigenous-led, holistic, relational and decolonial frameworks and practices

References

Aaron, S., McMahon, J. M., Milano, D., Torres, L., Clatts, M., Tortu, S., Mildvan, D., & Simm, M. (2008). Intranasal transmission of hepatitis C virus: virological and clinical evidence. *Clinical Infectious Diseases*, *47*(7), 931-934.

Ahern, J., Stuber, J., & Galea, S. (2007). Stigma, discrimination and the health of illicit drug users. *Drug and Alcohol Dependence*, *88*(2-3), 188-196.

Amato, L., Davoli, M., Minozzi, S., Ferroni, E., Ali, R., & Ferri, M. (2013). Methadone at tapered doses for the management of opioid withdrawal. *Cochrane Database of Systematic Reviews*(2). https://doi.org/10.1002/14651858.CD003409.pub4

Amato, L., Minozzi, S., & Davoli, M. (2011). Efficacy and safety of pharmacological interventions for the treatment of the Alcohol Withdrawal Syndrome. *Cochrane Database of Systematic Reviews*(6). https://doi.org/10.1002/14651858.CD008537.pub2

Amato, L., Minozzi, S., Davoli, M., & Vecchi, S. (2011a). Psychosocial and pharmacological treatments versus pharmacological treatments for opioid detoxification. *Cochrane Database of Systematic Reviews*(9). https://doi.org/10.1002/14651858.CD005031.pub4

Amato, L., Minozzi, S., Davoli, M., & Vecchi, S. (2011b). Psychosocial combined with agonist maintenance treatments versus agonist maintenance treatments alone for treatment of opioid dependence. *Cochrane Database of Systematic Reviews*(10). https://doi.org/10.1002/14651858.CD004147.pub4

Andresen, M. A., & Boyd, N. (2010). A cost-benefit and cost-effectiveness analysis of Vancouver's supervised injection facility. *International Journal of Drug Policy*, *21*(1), 70-76. https://doi.org/https://doi.org/10.1016/j.drugpo.2009.03.004

Aspinall, E. J., Nambiar, D., Goldberg, D. J., Hickman, M., Weir, A., Van Velzen, E., Palmateer, N., Doyle, J. S., Hellard, M. E., & Hutchinson, S. J. (2014). 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*, *43*(1), 235-248.

Atkinson, K. (2023). *Parkdale Queen West Community Health Centre Safer Opioid Supply: 2023 Evaluation Report*. Parkdale Queen West Community Health Centre. https://pqwchc.org/wp-content/uploads/PQWCHC_SOS_EvaluationReport-Final-2023.pdf

Baandrup, L., Ebdrup, B. H., Rasmussen, J., Lindschou, J., Gluud, C., & Glenthøj, B. Y. (2018). Pharmacological interventions for benzodiazepine discontinuation in chronic benzodiazepine users. *Cochrane Database of Systematic Reviews*(3). https://doi.org/10.1002/14651858.CD011481.pub2

Bahji, A., & Bajaj, N. (2018). Opioids on Trial: A Systematic Review of Interventions for the Treatment and Prevention of Opioid Overdose. *Canadian Journal of Addiction*, *9*(1), 26-33. https://doi.org/10.1097/cxa.0000000000000013

Bahji, A., Meyyappan, A. C., Hawken, E. R., & Tibbo, P. G. (2021). Pharmacotherapies for cannabis use disorder: A systematic review and network meta-analysis [Review]. *International Journal of Drug Policy*, *97(no pagination)*, Article 103295.

Baldwin, R., Miller, P. G., Coomber, K., Patafio, B., & Scott, D. (2022). A systematic narrative review of the effects of alcohol supply reduction policies on children and adolescents. *Int J Drug Policy*, *101*, 103581. https://doi.org/10.1016/j.drugpo.2022.103581

Ball, J., Zhang, J., Anderson, C., Kim, A., Fenaughty, J., Ansell, B., & Jackson, N. (2022). *Addressing Alcohol Harm in Adolescents. Technical Report 3: Rainbow analysis. Methods and data tables*.

Ball, J., Zhang, J., Kim, A. H. M., & Crossin, R. (2024). Less drinking, less harm: declines in adolescent alcohol use are accompanied by declines in self-reported alcohol harm. *Kōtuitui: New Zealand Journal of Social Sciences Online*, *19*(2), 207-215.

Bardwell, G., Austin, T., Maher, L., & Boyd, J. (2021). Hoots and harm reduction: a qualitative study identifying gaps in overdose prevention among women who smoke drugs. *Harm reduction journal*, *18*(1), 29. https://doi.org/10.1186/s12954-021-00479-3

Bardwell, G., Kerr, T., Boyd, J., & McNeil, R. (2018). Characterizing peer roles in an overdose crisis: Preferences for peer workers in overdose response programs in emergency shelters. *Drug Alcohol Depend*, *190*, 6-8. https://doi.org/10.1016/j.drugalcdep.2018.05.023

Bartlett, M., Jauncey, M., Livingston, M., & Roxburgh, A. (2026). Changing Drug Consumption Patterns Among Clients Attending the Medically Supervised Injecting Centre, Sydney: Implications for Service Provision and Harm Reduction Response. *Drug and Alcohol Review*, *45*(2), e70099. https://doi.org/https://doi.org/10.1111/dar.70099

Bax, T. (2021). The adverse childhood experiences of methamphetamine users in Aotearoa/New Zealand. *International Journal*, *10*, 1431.

Bayoumi, A. M., & Zaric, G. S. (2008). The cost-effectiveness of Vancouver's supervised injection facility. *CMAJ*, *179*(11), 1143-1151. https://doi.org/10.1503/cmaj.080808

Becker, H. S. (1974). Consciousness, power and drug effects. *Journal of Psychedelic Drugs*, *6*(1), 67-76.

Bell, J., Waal, R. v. d., & Strang, J. (2017). Supervised injectable heroin: a clinical perspective. *The Canadian Journal of Psychiatry*, *62*(7), 451-456.

Best, D., & Hennessy, E. A. (2022). The science of recovery capital: where do we go from here? *Addiction*, *117*(4), 1139-1145. https://doi.org/10.1111/add.15732

Best, D., Higham, D., Pickersgill, G., Higham, K., Hancock, R., & Critchlow, T. (2021). Building Recovery Capital through Community Engagement: A Hub and Spoke Model for Peer-based Recovery Support Services in England. *Alcoholism Treatment Quarterly*, *39*(1), 3-15. https://doi.org/10.1080/07347324.2020.1787119

Biolcati, R., & Passini, S. (2019). Development of the Substance Use Motives Measure (SUMM): A comprehensive eight-factor model for alcohol/drugs consumption. *Addictive behaviors reports*, *10*, 100199.

Boniface, S., Scannell, J. W., & Marlow, S. (2017). Evidence for the effectiveness of minimum pricing of alcohol: a systematic review and assessment using the Bradford Hill criteria for causality. *BMJ Open*, *7*(5). https://doi.org/https://doi.org/10.1136/bmjopen-2016-013497

Bonomo, Y., Norman, A., Biondo, S., Bruno, R., Daglish, M., Dawe, S., Egerton-Warburton, D., Karro, J., Kim, C., & Lenton, S. (2019). The Australian drug harms ranking study. *Journal of Psychopharmacology*, *33*(7), 759-768.

Bouzanis, K., Joshi, S., Lokker, C., Pavalagantharajah, S., Qiu, Y., Sidhu, H., Mbuagbaw, L., Qutob, M., Henedi, A., & Levine, M. A. (2021). Health programmes and services addressing the prevention and management of infectious diseases in people who inject drugs in Canada: a systematic integrative review. *BMJ Open*, *11*(9), e047511.

Bowman, J. (2016). Comorbid substance use disorders and mental health disorders among New Zealand prisoners. *Substance*, *62*, 91.

Bowring, A. L., Tidhar, T., Olsen, A., Bailie, C., Burke, K., Martin-Hughes, R., Keane, H., Dietze, P., & Scott, N. (2026). A cost–benefit analysis of the implementation and scale-up of harm reduction interventions in the Australian Capital Territory. *Addiction*, *121*(5), 1272-1289. https://doi.org/https://doi.org/10.1111/add.70276

Boyle, M. P., Gibson, E., Lien, J., Manages, S., Mohr, S., Ryan, C., & Tsai, G. (2025). Clinical Considerations for Engagement and Retention of Nonabstinent Patients in Care. *Journal of Addiction Medicine*, *19*(5), 504-506.

Brausch, S. (2023). *Te Mana o te Kupu: How Words Influence Alcohol and Drug Outcomes*. T. R. Ora. https://wharetukutuku.com/wp-content/uploads/2023/06/Te-Mana-o-Te-Kupu-Final-Master.pdf

British Columbia Centre on Substance Use. (2025). *Updated Prescribed Alternatives Policy: Implications for clinical practice*. https://www.bccsu.ca/wp-content/uploads/2025/12/Clinical-Bulletin-Prescribed-Alternatives-Policy-Implications-for-Clinical-Practice_Website-Version-for-1Dec2025.pdf

Brokenshire, K. (2022). *To check or not to check: investigating the factors influencing young people's use of drug checking services in Aotearoa New Zealand festivals: a thesis presented in partial fulfilment of the requirements for the degree of Master of Arts in Psychology at Massey University, Manawatū, New Zealand* Massey University].

Broman, M., Davis, A. K., Armstrong, S., Levin, A., Ahmed, K., Angarita, G. A., Arterberry, B. J., Bergeria, C., Earleywine, M., & Gex, K. S. (2026). US drug policy does not align with experts' rankings of drug harms: a multi-criteria decision analysis. *Harm reduction journal*, *23*(1), 17.

Brooks, H. L., Kassam, S., Salvalaggio, G., & Hyshka, E. (2018). Implementing managed alcohol programs in hospital settings: A review of academic and grey literature. *Drug and Alcohol Review*, *37*, S145-S155.

Brothers, T. D., Leaman, M., Bonn, M., Lewer, D., Atkinson, J., Fraser, J., Gillis, A., Gniewek, M., Hawker, L., Hayman, H., Jorna, P., Martell, D., O'Donnell, T., Rivers-Bowerman, H., & Genge, L. (2022). Evaluation of an emergency safe supply drugs and managed alcohol program in COVID-19 isolation hotel shelters for people experiencing homelessness. *Drug Alcohol Depend*, *235*, 109440. https://doi.org/10.1016/j.drugalcdep.2022.109440

Brown, J. K., & Malone, M. H. (1973). Some US street drug identification programs. *Journal of the American Pharmaceutical Association (1961)*, *13*(12), 670-674.

Brunt, T. M., Nagy, C., Bücheli, A., Martins, D., Ugarte, M., Beduwe, C., & Ventura Vilamala, M. (2017). Drug testing in Europe: monitoring results of the Trans European Drug Information (TEDI) project. *Drug Test Anal*, *9*(2), 188-198. https://doi.org/10.1002/dta.1954

Brunt, T. M., & Niesink, R. J. (2011). The Drug Information and Monitoring System (DIMS) in the Netherlands: implementation, results, and international comparison. *Drug Test Anal*, *3*(9), 621-634. https://doi.org/10.1002/dta.323

Bukten, A., Stavseth, M. R., Skurtveit, S., Tverdal, A., Strang, J., & Clausen, T. (2017). High risk of overdose death following release from prison: variations in mortality during a 15-year observation period. *Addiction*, *112*(8), 1432-1439.

Burger, J., & Kapron, M. (2017). Drug Policy and Indigenous Peoples. *Health and Human Rights Journal*, *19*(1), 269-278.

Cameron, M. P., Cochrane, W., Gordon, C., & Livingston, M. (2016). Alcohol outlet density and violence: A geographically weighted regression approach. *Drug and Alcohol Review*, *35*(3), 280-288. https://doi.org/https://doi.org/10.1111/dar.12295

Cameron, M. P., Cochrane, W., McNeill, K., Melbourne, P., Morrison, S. L., & Robertson, N. (2012). Alcohol outlet density is related to police events and motor vehicle accidents in Manukau City, New Zealand. *Australian and New Zealand Journal of Public Health*, *36*(6), 537-542. https://doi.org/https://doi.org/10.1111/j.1753-6405.2012.00935.x

Campbell, J. N. (1996). APS 1995 Presidential address. Pain Forum,

Canadian Aboriginal Aids Network, & Interagency Coalition on AIDS and Development. (2019). *Indigenous harm reduction = Reducing the harms of colonialism*.

Canadian AIDS Treatment Information Exchange (CATIE). (2023). *CATIE statement on the distribution of a full range of harm reduction supplies as an evidence-based approach to reducing a range of preventable harms* [Position statement]. https://www.catie.ca/catie-statement-on-the-distribution-of-a-full-range-of-harm-reduction-supplies-as-an-evidence-based

Carney, T., Van Hout, M. C., Norman, I., Dada, S., Siegfried, N., & Parry, C. D. H. (2020). Dihydrocodeine for detoxification and maintenance treatment in individuals with opiate use disorders. *Cochrane Database of Systematic Reviews*(2). https://doi.org/10.1002/14651858.CD012254.pub2

Carswell, S., & Kaiwai, H. (2023). *Evaluation of He Waka Tapu*. https://www.hewakatapu.org.nz/images/reports/HeWakaTapu-EvaluationReport-2023.pdf

Castedo de Martell, S., Wilkerson, J. M., Ranjit, N., Holleran Steiker, L., McCurdy, S. A., & Shelton Brown III, H. (2025). What we know about the peer workforce and economic evaluation for peer recovery support services: a systematic review. *Substance use & addiction journal*, *46*(1), 90-102.

Castells, X., Cunill, R., Pérez-Mañá, C., Vidal, X., & Capellà, D. (2016). Psychostimulant drugs for cocaine dependence. *Cochrane Database of Systematic Reviews*(9). https://doi.org/10.1002/14651858.CD007380.pub4

Caulkins, J. P., Reuter, P., & Coulson, C. (2011). Basing drug scheduling decisions on scientific ranking of harmfulness: false promise from false premises. *Addiction*, *106*(11), 1886-1890.

Chambers, T., Mizdrak, A., Jones, A. C., Davies, A., & Sherk, A. (2024). Estimated alcohol-attributable health burden in Aotearoa New Zealand.

Chang, J. E., Lindenfeld, Z., & Hagan, H. (2023). Integrating harm reduction into medical care: lessons from three models. *The Journal of the American Board of Family Medicine*, *36*(3), 449-461.

Chayama, K. L., Ti, L., Lira, J. A. S., Coulaud, P.-j., Bardwell, G., & Knight, R. (2024). Opportunities and challenges for implementing drug checking services in British Columbia, Canada: A qualitative study. *International Journal of Drug Policy*, *132*, 104560.

Cheetu, S., Hannah, B., Hoang, A., Ling, T., & Krishnamurthy, M. (2025). *Scanning and Mapping Culturally Responsive Harm Reduction Services*. M. R. S. f. S. O. P. a. E. Network.

Cherrier, N., Kearon, J., Tetreault, R., Garasia, S., & Guindon, E. (2022). Community distribution of naloxone: a systematic review of economic evaluations. *PharmacoEconomics-Open*, *6*(3), 329-342.

Chimbar, L., & Moleta, Y. (2018). Naloxone Effectiveness: A Systematic Review [Review]. *Journal of addictions nursing*, *29(3)*, 167-171. https://doi.org/https://dx.doi.org/10.1097/JAN.0000000000000230

Chou, R., Korthuis, P. T., McCarty, D., Coffin, P. O., Griffin, J. C., Davis-O'Reilly, C., Grusing, S., & Daya, M. (2017). Management of suspected opioid overdose with naloxone in out-of-hospital settings: a systematic review. *Annals of Internal Medicine*, *167*(12), 867-875.

Chung, E. O., Patel, S. V., Wenger, L. D., Humphrey, J. L., Sukasih, A., Bluthenthal, R. N., Tookes, H. E., Des Jarlais, D. C., Glick, S. N., LaKosky, P. A., Prohaska, S., Guzman, L., Kral, A. H., & Lambdin, B. H. (2025). Association of safer smoking supply distribution with participant encounters and naloxone distribution from syringe services programs: Findings from the National Survey of Syringe Services Programs in the United States. *Drug Alcohol Depend Rep*, *14*, 100317. https://doi.org/10.1016/j.dadr.2024.100317

Cicero, T. J., Ellis, M. S., Surratt, H. L., & Kurtz, S. P. (2014). The Changing Face of Heroin Use in the United States: A Retrospective Analysis of the Past 50 Years. *JAMA Psychiatry*, *71*(7), 821-826. https://doi.org/10.1001/jamapsychiatry.2014.366

Cid, A., Mahajan, N., Wong, W. W., Beazely, M., & Grindrod, K. A. (2024). An economic evaluation of community pharmacy–dispensed naloxone in Canada. *Canadian Pharmacists Journal/Revue des Pharmaciens du Canada*, *157*(2), 84-94.

Clark, A. K., Wilder, C. M., & Winstanley, E. L. (2014). A Systematic Review of Community Opioid Overdose Prevention and Naloxone Distribution Programs. *Journal of Addiction Medicine*, *8*(3), 153-163. https://doi.org/10.1097/adm.0000000000000034

Collins, A. B., Bardwell, G., McNeil, R., & Boyd, J. (2019). Gender and the overdose crisis in North America: Moving past gender-neutral approaches in the public health response. *The International journal on drug policy*, *69*, 43.

Collins, A. B., Boyd, J., Cooper, H. L., & McNeil, R. (2019). The intersectional risk environment of people who use drugs. *Social science & medicine*, *234*, 112384.

Coomber, R., & Moyle, L. (2014). Beyond drug dealing: developing and extending the concept of 'social supply' of illicit drugs to 'minimally commercial supply'. *Drugs: education, prevention and policy*, *21*(2), 157-164. https://doi.org/10.3109/09687637.2013.798265

Cooper, M. L., Kuntsche, E., Levitt, A., Barber, L. L., & Wolf, S. (2016). Motivational models of substance use: A review of theory and research on motives for using alcohol, marijuana, and tobacco. *The Oxford handbook of substance use and substance use disorders*, *1*, 375-421.

Cortina, S., Kennedy, M. C., Dong, H., Fairbairn, N., Hayashi, K., Milloy, M. J., & Kerr, T. (2018). Willingness to use an in-hospital supervised inhalation room among people who smoke crack cocaine in Vancouver, Canada. *Drug Alcohol Rev*, *37*(5), 645-652. https://doi.org/10.1111/dar.12815

Cox, W. M., & Klinger, E. (1988). A motivational model of alcohol use. *Journal of abnormal psychology*, *97*(2), 168.

Crépault, J.-F., Russell, C., Asbridge, M., Bonn, M., Chaiton, M., Darnay, K., Henry, R., Hodgins, D. C., Hyshka, E., Jutras-Aswad, D., Le Foll, B., Patenaude, S., Selby, P., Sherk, A., Shield, K. D., Socías, M. E., Stewart, S. H., Zhang, M., Ali, F.,...Rehm, J. (2026). Drug harms in Canada: A multi-criteria decision analysis. *Journal of Psychopharmacology*, *0*(0). https://doi.org/10.1177/02698811251409147

Crepault, J.-F., Russell, C., Watson, T. M., Strike, C., Bonato, S., & Rehm, J. (2023). What is a public health approach to substance use? A qualitative systematic review and thematic synthesis. *International Journal of Drug Policy*, *112*, 103958.

Crossin, R. (2025). New Zealand's choice: Funding our drug policy:(A study on public perspectives and willingness to pay).

Crossin, R., Cleland, L., Rychert, M., Wilkins, C., & Boden, J. M. (2022). Measuring drug harm in New Zealand: a stocktake of current data sources. *The New Zealand Medical Journal (Online)*, *135*(1554), 93-104.

Crossin, R., Cleland, L., Wilkins, C., Rychert, M., Adamson, S., Potiki, T., Pomerleau, A. C., MacDonald, B., Faletanoai, D., & Hutton, F. (2023). The New Zealand drug harms ranking study: A multi-criteria decision analysis. *Journal of Psychopharmacology*, *37*(9), 891-903.

Csete, J., Kamarulzaman, A., Kazatchkine, M., Altice, F., Balicki, M., Buxton, J., Cepeda, J., Comfort, M., Goosby, E., Goulao, J., Hart, C., Kerr, T., Lajous, A. M., Lewis, S., Martin, N., Mejia, D., Camacho, A., Mathieson, D., Obot, I.,...Beyrer, C. (2016). Public health and international drug policy. *Lancet*, *387*(10026), 1427-1480. https://doi.org/10.1016/S0140-6736(16)00619-X

Cunningham, R., King, P. T., Telfer, K., Crengle, S., Carr, J., Stanley, J., Gibb, S., & Robson, B. (2022). Mortality after release from incarceration in New Zealand by gender: A national record linkage study. *SSM - Population Health*, *20*, 101274. https://doi.org/https://doi.org/10.1016/j.ssmph.2022.101274

Dale-Perera, A. (2017). Recovery, reintegration, abstinence, harm reduction: the role of different goals within drug treatment in the European context. *Lisbon: EMCDDA*.

Dale, E., Conigrave, K. M., Kelly, P. J., Ivers, R., Clapham, K., & Lee, K. S. K. (2021). A Delphi yarn: applying Indigenous knowledges to enhance the cultural utility of SMART Recovery Australia. *Addiction Science & Clinical Practice*, *16*(1), 2. https://doi.org/10.1186/s13722-020-00212-8

Dale, E., Lee, K. S. K., Conigrave, K. M., Conigrave, J. H., Ivers, R., Clapham, K., & Kelly, P. J. (2021). A multi-methods yarn about SMART Recovery: First insights from Australian Aboriginal facilitators and group members. *Drug and Alcohol Review*, *40*(6), 1013-1027. https://doi.org/https://doi.org/10.1111/dar.13264

Daniels, C., Aluso, A., Burke-Shyne, N., Koram, K., Rajagopalan, S., Robinson, I., Shelly, S., Shirley-Beavan, S., & Tandon, T. (2021). Decolonizing drug policy. *Harm reduction journal*, *18*(1), 120. https://doi.org/10.1186/s12954-021-00564-7

Darker, C. D., Sweeney, B. P., Barry, J. M., Farrell, M. F., & Donnelly-Swift, E. (2015). Psychosocial interventions for benzodiazepine harmful use, abuse or dependence. *Cochrane Database of Systematic Reviews*(5). https://doi.org/10.1002/14651858.CD009652.pub2

Davis, S. M., Daily, S., Kristjansson, A. L., Kelley, G. A., Zullig, K., Baus, A., Davidov, D., & Fisher, M. (2017). Needle exchange programs for the prevention of hepatitis C virus infection in people who inject drugs: a systematic review with meta-analysis. *Harm reduction journal*, *14*(1), 25.

Denning, P. (2001). Strategies for implementation of harm reduction in treatment settings. *Journal of Psychoactive Drugs*, *33*(1), 23-26.

Departmental Committee on Morphine and Heroin Addiction. (1926). *Rolleston Committee Report*. London: His Majesty's Stationery Office

Dertadian, G. C. (2024). The Coloniality of Drug Prohibition. *International Journal of Drug Policy*, *126*, 104368. https://doi.org/10.1016/j.drugpo.2024.104368

Dertadian, G. C., & Askew, R. (2024). Towards a social harm approach in drug policy. *International Journal of Drug Policy*, *127*, 104425.

Des Jarlais, D. C., Feelemyer, J. P., Modi, S. N., Abdul-Quader, A., & Hagan, H. (2013). High coverage needle/syringe programs for people who inject drugs in low and middle income countries: a systematic review. *BMC Public Health*, *13*(1), 53.

Dickerson, D., Robichaud, F., Teruya, C., Nagaran, K., & Hser, Y.-I. (2012). Utilizing Drumming for American Indians/Alaska Natives with Substance Use Disorders: A Focus Group Study. *The American Journal of Drug and Alcohol Abuse*, *38*(5), 505-510. https://doi.org/10.3109/00952990.2012.699565

Dickerson, D. L., D'Amico, E. J., Klein, D. J., Johnson, C. L., Hale, B., Ye, F., & Dominguez, B. X. (2021). Drum-Assisted Recovery Therapy for Native Americans (DARTNA): Results from a feasibility randomized controlled trial. *Journal of Substance Abuse Treatment*, *126*, 108439. https://doi.org/https://doi.org/10.1016/j.jsat.2021.108439

Dietze, P., Jauncey, M., Salmon, A., Mohebbi, M., Latimer, J., van Beek, I., McGrath, C., & Kerr, D. (2019). Effect of Intranasal vs Intramuscular Naloxone on Opioid Overdose: A Randomized Clinical Trial. *JAMA Network Open*, *2*(11), e1914977-e1914977. https://doi.org/10.1001/jamanetworkopen.2019.14977

Dirga, N. (2026, 2026/04/01). How cocaine use has skyrocketed to an all-time high in New Zealand – and why. *New Zealand Herald*. https://www.nzherald.co.nz/nz/how-cocaine-use-has-skyrocketed-to-an-all-time-high-in-new-zealand-and-why/4M4HSQXBANF2NKXPFBJA3HLCXI/

Do, U., Larney, S., Bonn, M., Matei, I., Zolopa, C., Bergeron, A., Karamouzian, M., Hyshka, E., Brothers, T. D., & Bozinoff, N. (2026). A scoping review and concept analysis to inform Canada's safe (r) opioid supply research agenda. *International Journal of Drug Policy*, *147*, 105070.

Doberstein, C. (2022). Insite in Vancouver: North America's First Supervised Injection Site. In E. Lindquist, M. Howlett, G. Skogstad, G. Tellier, & P. t' Hart (Eds.), *Policy Success in Canada: Cases, Lessons, Challenges* (pp. 0). Oxford University Press. https://doi.org/10.1093/oso/9780192897046.003.0004

Doncliff, B. (2025). Recovery capital' in addiction treatment: What is it, and why is it important? *Kai Tiaki: Nursing New Zealand*, *84-92*.

Durie, M. (1985). A Maori perspective of health. *Social science & medicine*, *20*(5), 483-486.

Durie, M. (2009). *Pae Ora: Maori Health Horizons* (Te Mata o Te Tau Lecture Series 2009, Issue. https://ndhadeliver.natlib.govt.nz/delivery/DeliveryManagerServlet?dps_pid=IE1365446

Eger, W. H., Huffaker, S. L., Forman, E., Smith, J., Akiba, C. F., Laurano, R., Patel, S. V., Lambdin, B. H., Roth, A. M., & Bazzi, A. R. (2026). Integration of safer smoking equipment in U.S. syringe services programs: Qualitative insights from program staff. *Int J Drug Policy*, *147*, 105106. https://doi.org/10.1016/j.drugpo.2025.105106

Eger, W. H., Plesons, M., Bartholomew, T. S., Bazzi, A. R., Hauschild, M. H., McElrath, C. C., Owens, C., Forrest, D. W., Tookes, H. E., & Crable, E. L. (2024). Syringe services program staff and participant perspectives on changing drug consumption behaviors in response to xylazine adulteration. *Harm reduction journal*, *21*(1), 162.

Elkhalifa, S., Jozaghi, E., Marsh, S., Thomson, E., Gregg, D., Buxton, J., & Jolly, A. (2021). Combining respondent-driven sampling with a community-based participatory action study of people who smoke drugs in two cities in British Columbia, Canada. *Harm reduction journal*, *18*(1), 37.

Falkner, C., Christie, G., Zhou, L., & King, J. (2015). The effect of alcohol price on dependent drinkers' alcohol consumption. *New Zeal Med J*, *128*(1427).

Fergusson, D. M., Boden, J. M., & Horwood, L. J. (2009). Tests of causal links between alcohol abuse or dependence and major depression. *Archives of general psychiatry*, *66*(3), 260-266.

Fernandes, R. M., Cary, M., Duarte, G., Jesus, G., Alarcão, J., Torre, C., Costa, S., Costa, J., & Carneiro, A. V. (2017). Effectiveness of needle and syringe Programmes in people who inject drugs–An overview of systematic reviews. *BMC Public Health*, *17*(1), 309.

Fernandez, N., Towers, C. V., Wolfe, L., Hennessy, M. D., Weitz, B., & Porter, S. (2016). Sharing of snorting straws and hepatitis C virus infection in pregnant women. *Obstetrics & Gynecology*, *128*(2), 234-237.

Ferri, M., Davoli, M., & Perucci, C. A. (2011). Heroin maintenance for chronic heroin-dependent individuals. *Cochrane Database Syst Rev*, *2011*(12), CD003410. https://doi.org/10.1002/14651858.CD003410.pub4

Ferri, M., Minozzi, S., Bo, A., & Amato, L. (2013). Slow-release oral morphine as maintenance therapy for opioid dependence. *Cochrane Database Syst Rev*, *2013*(6), CD009879. https://doi.org/10.1002/14651858.CD009879.pub2

First Nations Health Authority. (n.d.). *What is harm reduction? Policy Supplement on Harm Reduction 3 of 3*. First Nations Health Authority. https://www.fnha.ca/Documents/FNHA-harm-reduction-policy-supplement-3-of-3.pdf

Fitzgerald, N., O'Donnell, R., Uny, I., Martin, J. G., Cook, M., Graham, K., Stockwell, T., Hughes, K., Wilkinson, C., McGill, E., Miller, P. G., Reynolds, J., Quigg, Z., & Angus, C. (2024). Reducing alcohol harms whilst minimising impact on hospitality businesses: 'Sweetspot' policy options. *Int J Drug Policy*, *129*, 104465. https://doi.org/10.1016/j.drugpo.2024.104465

Fitzpatrick, T., McMahan, V. M., Frank, N. D., Glick, S. N., Violette, L. R., Davis, S., & Jama, S. (2022). Heroin pipe distribution to reduce high-risk drug consumption behaviors among people who use heroin: a pilot quasi-experimental study. *Harm Reduct J*, *19*(1), 103. https://doi.org/10.1186/s12954-022-00685-7

Fleras, A. (1981). Māori wardens and the control of liquor among the Māori of New Zealand. *The Journal of the Polynesian Society*, *90*(4), 495-513. http://www.jstor.org/stable/20705600

Ford, K., Foulds, J., Coleman, O., Ardagh, M., Pearson, S., Droste, N., Newton-Howes, G., & Sellman, J. D. (2018). Alcohol-related emergency department attendances after the introduction of the Sale and Supply of Alcohol Act 2012. *The New Zealand Medical Journal (Online)*, *131*(1483), 40-49.

Foulds, J. A., Boden, J. M., McKetin, R., & Newton-Howes, G. (2020). Methamphetamine use and violence: Findings from a longitudinal birth cohort. *Drug and Alcohol Dependence*, *207*, 107826. https://doi.org/https://doi.org/10.1016/j.drugalcdep.2019.107826

Foulds, J. A., & Nutt, D. (2020). Principled sentencing for drug supply offences: revised methamphetamine sentencing guidelines in New Zealand. *Drug Science, Policy and Law*, *6*, 1-5. https://doi.org/10.1177/2050324520942347

Freeman, K., Jones, C. G., Weatherburn, D. J., Rutter, S., Spooner, C. J., & Donnelly, N. (2005). The impact of the Sydney Medically Supervised Injecting Centre (MSIC) on crime. *Drug Alcohol Rev*, *24*(2), 173-184. https://doi.org/10.1080/09595230500167460

Futterman, R., Lorente, M., & Silverman, S. (2004). Integrating harm reduction and abstinence-based substance abuse treatment in the public sector. *Substance Abuse*, *25*(1), 3-7.

Ganetsky, V. S., Feder, K. A., Burke, K. N., Desai, I. K., Harris, S. J., & Krawczyk, N. (2025). Integration of harm reduction principles and practices within specialty substance use treatment programs in New Jersey: A qualitative study of program leadership. *Journal of substance use and addiction treatment*, *174*, 209703.

Gariepy, G., Prowse, R. K. M., Plouffe, R., & Graham, E. (2025). Supervised consumption sites and population-level overdose mortality: a systematic review of recent evidence, 2016-2024. *Health Promot Chronic Dis Prev Can*, *45*(9), 357-366. https://doi.org/10.24095/hpcdp.45.9.02 (Sites de consommation supervisee et mortalite par surdose a l'echelle de la population : revue systematique des donnees recentes, 2016-2024.)

Gates, P. J., Sabioni, P., Copeland, J., Le Foll, B., & Gowing, L. (2016). Psychosocial interventions for cannabis use disorder. *Cochrane Database of Systematic Reviews*(5). https://doi.org/10.1002/14651858.CD005336.pub4

Gehring, N. D., Speed, K. A., Launier, K., O'Brien, D., Campbell, S., & Hyshka, E. (2022). The state of science on including inhalation within supervised consumption services: A scoping review of academic and grey literature. *Int J Drug Policy*, *102*, 103589. https://doi.org/10.1016/j.drugpo.2022.103589

Ghafouri, M., Correa da Costa, S., Zare Dehnavi, A., Gold, M. S., & Rummans, T. A. (2024). Treatments for Cannabis Use Disorder across the Lifespan: A Systematic Review [Review]. *Brain Sciences*, *14(3) (no pagination)*, Article 227.

Ghetti, C., Chen, X. J., Brenner, A. K., Hakvoort, L. G., Lien, L., Fachner, J., & Gold, C. (2022). Music therapy for people with substance use disorders. *Cochrane Database of Systematic Reviews*(5). https://doi.org/10.1002/14651858.CD012576.pub3

Gibson, K., & Hutton, F. (2021). Women who inject drugs (WWID): Stigma, gender and barriers to needle exchange programmes (NEPs). *Contemporary Drug Problems*, *48*(3), 276-296.

Giulini, F., Keenan, E., Killeen, N., & Ivers, J.-H. (2023). A systematized review of drug-checking and related considerations for implementation as a harm reduction intervention. *Journal of Psychoactive Drugs*, *55*(1), 85-93.

Global Commission on Drug Policy. (2014). *Taking control: pathways to drug policies that work* (Global Commission on Drug Policy, Issue.

Godkhindi, P., Nussey, L., & O'Shea, T. (2022). "They're causing more harm than good": a qualitative study exploring racism in harm reduction through the experiences of racialized people who use drugs. *Harm reduction journal*, *19*(1), 96. https://doi.org/10.1186/s12954-022-00672-y

Goldberg, S. B., Pace, B., Griskaitis, M., Willutzki, R., Skoetz, N., Thoenes, S., Zgierska, A. E., & Rösner, S. (2021). Mindfulness-based interventions for substance use disorders. *Cochrane Database of Systematic Reviews*(10). https://doi.org/10.1002/14651858.CD011723.pub2

Goldet, G., & Howick, J. (2013). Understanding GRADE: an introduction. *Journal of Evidence-Based Medicine*, *6*(1), 50-54.

Gomes, T., Kolla, G., McCormack, D., Sereda, A., Kitchen, S., & Antoniou, T. (2022). Clinical outcomes and health care costs among people entering a safer opioid supply program in Ontario. *CMAJ*, *194*(36), E1233-E1242. https://doi.org/10.1503/cmaj.220892

Gomes, T., McCormack, D., Kolla, G., Young, S., Bayoumi, A. M., Smoke, A., Li, P., & Antoniou, T. (2025). Comparing the effects of prescribed safer opioid supply and methadone in Ontario, Canada: a population-based matched cohort study. *The Lancet Public Health*, *10*(5), e412-e421. https://doi.org/10.1016/S2468-2667(25)00070-2

Gone, J. P. (2012). Indigenous traditional knowledge and substance abuse treatment outcomes: the problem of efficacy evaluation. *The American Journal of Drug and Alcohol Abuse*, *38*(5), 493-497. https://doi.org/10.3109/00952990.2012.694528

Gone, J. P. (2022). Re-imagining mental health services for American Indian communities: Centering Indigenous perspectives. *American Journal of Community Psychology*, *69*(3-4), 257-268. https://doi.org/https://doi.org/10.1002/ajcp.12591

Gone, J. P., & Calf Looking, P. E. (2015). The Blackfeet Indian culture camp: Auditioning an alternative indigenous treatment for substance use disorders. *Psychological Services*, *12*(2), 83-91. https://doi.org/10.1037/ser0000013

Gonzalez-Nieto, P., Wallace, B., Kielty, C., Shkolnikov, I., Margolese, A., Arredondo Sanchez Lira, J., Gill, C., & Hore, D. (2026). Drug sellers' use of a drug checking service amid the overdose crisis in British Columbia, Canada. *Addiction*.

Gowing, L., Farrell, M. F., Bornemann, R., Sullivan, L. E., & Ali, R. (2011). Oral substitution treatment of injecting opioid users for prevention of HIV infection. *Cochrane Database of Systematic Reviews*(8). https://doi.org/10.1002/14651858.CD004145.pub4

Grace Rose, C., Kulbokas, V., Carkovic, E., Lee, T. A., & Pickard, A. S. (2023). Contextual factors affecting the implementation of drug checking for harm reduction: a scoping literature review from a North American perspective. *Harm reduction journal*, *20*(1), 124.

Gruenewald, P. J., Treno, A. J., Ponicki, W. R., Huckle, T., Yeh, L.-C., & Casswell, S. (2015). Impacts of New Zealand's lowered minimum purchase age on context-specific drinking and related risks. *Addiction*, *110*(11), 1757-1766. https://doi.org/https://doi.org/10.1111/add.13034

Grund, J.-P., Coffin, P., Jauffret-Roustide, M., Dijkstra, M., De Bruin, D., & Blanken, P. (2010). The fast and furious: cocaine, amphetamines and harm reduction.

Guggisberg, M. (2010). *An exploratory study of the association between intimate partner male-to-female violence, mental health problems and substance use among victimised women* University of Western Australia].

Guindon, G. E., Li, C., Trivedi, R., Abbas, U., Xiong, G., & Atri, A. (2025). The effectiveness and cost-effectiveness of population-level policies to reduce alcohol use: A systematic umbrella review. *Can J Public Health*, *116*(6), 951-984. https://doi.org/10.17269/s41997-025-01013-9

Haines, M., & O'Byrne, P. (2023). Safer opioid supply: qualitative program evaluation. *Harm Reduct J*, *20*(1), 53. https://doi.org/10.1186/s12954-023-00776-z

Hammond, K., Gagne, L., Pauly, B., Stockwell, T. . (2016). *A cost benefit analysis of a Canadian Managed Alcohol Program*.

Harm Reduction International. (2024a). *The cost of complacency: a harm reduction funding crisis*

Harm Reduction International. (2024b). *Global State of Harm Reduction 2024*. HRI. https://hri.global/wp-content/uploads/2024/10/GSR24_full-document_12.12.24_B.pdf

Harris, J., Shorter, G. W., Davidson, G., & Best, P. (2020). Risk perception, changing social context, and norms prevent transition to regular injection among people who smoke heroin. *Drug and Alcohol Dependence*, *208*, 107878.

Harris, M. (2013). The 'do-it-yourself'New Zealand injecting scene: Implications for harm reduction. *International Journal of Drug Policy*, *24*(4), 281-283.

Harris, M. (2021). Creativity, care and 'messy' drug use: A collective history of the early days of peer-led needle exchange in Dunedin, New Zealand. *International Journal of Drug Policy*, *98*, 103386. https://doi.org/https://doi.org/10.1016/j.drugpo.2021.103386

Harris, M. (2026a). Safe Inhalation Pipe Provision (SIPP) one-page summary of impact evaluation findings for services [Summary].

Harris, M. (2026). The Safe Inhalation Pipe Provision (SIPP) Study: Engaging with people who use crack cocaine in England. *Pipes, Peers and Prevention: Webinar launch*.

Harris, M. (2026b). Working with, learning from and giving back: Principles for collaborative research with people who use drugs. *Addiction*, *n/a*(n/a). https://doi.org/https://doi.org/10.1111/add.70434

Harris, M., & Luongo, N. (2021). "Nothing about us, without us": Negotiating the personal and professional as activists and academics who use drugs. *Int J Drug Policy*, *98*, 103533. https://doi.org/10.1016/j.drugpo.2021.103533

Harris M, V. C., McGaff C, Sharpe C, Rathod S, Piot A, Southwell M, Scott J, Hope V, Platt L. (2026). Innovation, respiration and drug paraphernalia policy: A mixed methods study of crack pipe practice and respiratory harm in England. . *Harm reduction journal*. https://doi.org/https://doi.org/10.1186/s12954-026-01470-6

Hawk, M., Coulter, R. W., Egan, J. E., Fisk, S., Reuel Friedman, M., Tula, M., & Kinsky, S. (2017). Harm reduction principles for healthcare settings. *Harm reduction journal*, *14*(1), 70.

Hay, B., Henderson, C., Maltby, J., & Canales, J. J. (2017). Influence of peer-based needle exchange programs on mental health status in people who inject drugs: a nationwide New Zealand study. *Frontiers in Psychiatry*, *7*, 211.

Health Research Council. (2024). *A Kaupapa Māori behavioural health intervention for harmful substance use*. https://www.hrc.govt.nz/resources/research-repository/kaupapa-maori-behavioural-health-intervention-harmful-substance-use

Heath, A., Martin, M. K., & Krakouer, J. (2022). Exploring the lived experiences of Indigenous Australians within the context of alcohol and other drugs treatment services: A scoping review. *Drug and Alcohol Review*, *41*(7), 1664-1681. https://doi.org/https://doi.org/10.1111/dar.13528

Henderson, R., McInnes, A., Danyluk, A., Wadsworth, I. k., Healy, B., & Crowshoe, L. (2023). A realist review of best practices and contextual factors enhancing treatment of opioid dependence in Indigenous contexts. *Harm reduction journal*, *20*(1), 34. https://doi.org/10.1186/s12954-023-00740-x

Hewlett, N., Hayes, L., Williams, R., Hamilton, S., Holland, L., Gall, A., Doyle, M., Goldsbury, S., Boaden, N., & Reid, N. (2023). Development of an Australian FASD Indigenous Framework: Aboriginal Healing-Informed and Strengths-Based Ways of Knowing, Being and Doing. *International Journal of Environmental Research and Public Health*, *20*(6), 5215. https://www.mdpi.com/1660-4601/20/6/5215

Hides, L., Quinn, C., Stoyanov, S., Kavanagh, D., & Baker, A. (2019). Psychological interventions for co-occurring depression and substance use disorders. *Cochrane Database of Systematic Reviews*(11). https://doi.org/10.1002/14651858.CD009501.pub2

High Alert (DIANZ). (2025). *Industrial chemicals sold as methamphetamine*. Drug Information and Alerts Aotearoa New Zealand (DIANZ). Retrieved 28/04/2026 from https://www.highalert.org.nz/articles/industrial-chemicals-sold-as-methamphetamine/

Hirchak, K. A., Oluwoye, O., Nadeau, M., Richardson, M., Bajet, K., Brigman, M., Herron, J. L., Hernandez-Vallant, A., Vasquez, A., Pham, C., Oliver, K. A., Baukol, P., Webb, K., Belone, L., McDonell, M. G., Venner, K. L., & Campbell, A. N. C. (2023). Coming together for something good: recommendations from a scoping review for dissemination and implementation science to improve indigenous substance use disorder treatment. *Front Public Health*, *11*, 1265122. https://doi.org/10.3389/fpubh.2023.1265122

Hodge, J. G., Wetter, S. A., Chronister, D., Hess, A., & Piatt, J. (2017). Redefining public health emergencies: The opioid epidemic. *Jurimetrics*, *58*(1), 1-15. http://www.jstor.org/stable/26426448

Holtgrave, D. R., Zamboni, L., Schady, E., Clear, A., Park, J. N., & McDonald, J. V. (2025). Economic Evaluation of a Naloxone Distribution and Training via a State-Level Opioid Overdose Prevention Program, New York State, April 2023 to March 2025. *Journal of Public Health Management and Practice*, 10.1097.

Horwitz, R., Brener, L., & Treloar, C. (2012). Evaluation of an integrated care service facility for people living with hepatitis C in New Zealand. *International Journal of Integrated Care*, *12*(Special Edition Integrated Care Pathways), e229.

Hughes, C., Stevens, A., Hulme, S., & Cassidy, R. (2019). Models for the decriminalisation, depenalisation and diversion of illicit drug possession: An international realist review. *International Journal of Drug Policy*.

Hughes, C. E., & Stevens, A. (2007). The effects of the decriminalization of drug use in Portugal.

Hughes, M., Suhail-Sindhu, S., Namirembe, S., Jordan, A., Medlock, M., Tookes, H. E., Turner, J., & Gonzalez-Zuniga, P. (2022). The crucial role of black, latinx, and indigenous leadership in harm reduction and addiction treatment. *American Journal of Public Health*, *112*, S136-S139.

Hunt, G. E., Siegfried, N., Morley, K., Brooke-Sumner, C., & Cleary, M. (2019). Psychosocial interventions for people with both severe mental illness and substance misuse. *Cochrane Database of Systematic Reviews*(12). https://doi.org/10.1002/14651858.CD001088.pub4

Huriwai, T. (2002). RE-ENCULTURATION: CULTURALLY CONGRUENT INTERVENTIONS FOR MĀORI WITH ALCOHOL- AND DRUG-USE-ASSOCIATED PROBLEMS IN NEW ZEALAND. *Substance Use & Misuse*, *37*(8-10), 1259-1268. https://doi.org/10.1081/JA-120004183

Huriwai, T., Sellman, J. D., Sullivan, P., & Potiki, T. L. (2000). Optimal Treatment for Maori with Alcohol and Drug-Use-Related Problems: An Investigation of Cultural Factors in Treatment. *Substance Use & Misuse*, *35*(3), 281-300. https://doi.org/10.3109/10826080009147697

Hutton, F. (2021). Drug Checking at New Zealand Festivals.

Hutton, F. (2022). Drug checking in New Zealand: the 2020 and 2021 drug and substance checking legislation acts. *Drugs, Habits and Social Policy*, *23*(3), 200-206. https://doi.org/10.1108/dhs-03-2022-0016

Indave, B. I., Minozzi, S., Pani, P. P., & Amato, L. (2016). Antipsychotic medications for cocaine dependence. *Cochrane Database of Systematic Reviews*(3). https://doi.org/10.1002/14651858.CD006306.pub3

Indig, D., Gear, C., & Wilhelm, K. (2017). Impact of stimulant dependence on the mental health of New Zealand prisoners. In: Department of Corrections,.

Inter-agency Committee on Drugs. (2015). *National Drug Policy 2015 to 2020*.

Jeziorska, I., Martinelli, T. F., & Kools, J.P. (2025). 50 years of harm reduction in Europe: high time for transformation. *Harm reduction journal*, *22*(1), 94. https://doi.org/10.1186/s12954-025-01200-4

Johnson, T. P. (2014). Sources of error in substance use prevalence surveys. *International scholarly research notices*, *2014*(1), 923290.

Jones, L., Pickering, L., Sumnall, H., McVeigh, J., & Bellis, M. A. (2010). Optimal provision of needle and syringe programmes for injecting drug users: A systematic review. *International Journal of Drug Policy*, *21*(5), 335-342.

Jowett, R. V., Dale, M., & Cooper, L. (2021). Mitigating barriers to addiction recovery in Aotearoa New Zealand: A lived experience perspective. *Aotearoa New Zealand Social Work*, *33*(2), 45–55. https://doi.org/10.11157/anzswj-vol33iss2id866

Jozaghi, E. V. A. N. o. D. U. (2014). A cost-benefit/cost-effectiveness analysis of an unsanctioned supervised smoking facility in the Downtown Eastside of Vancouver, Canada. *Harm reduction journal*, *11*(1), 30. https://doi.org/10.1186/1477-7517-11-30

Kalicum, J., Nyx, E., Kennedy, M. C., & Kerr, T. (2024). The impact of an unsanctioned compassion club on non-fatal overdose. *Int J Drug Policy*, *131*, 104330. https://doi.org/10.1016/j.drugpo.2024.104330

Kapuaahiwalani-Fitzsimmons, M. a. (2015). *Critical Success Factors in Kaupapa Māori AOD Residential Treatment: Māori Youth Perspectives* University of Otago]. https://ourarchive.otago.ac.nz/esploro/outputs/graduate/Critical-Success-Factors-in-Kaupapa-M%C4%81ori/9926480279201891

Karamouzian, M., Rafat, B., Kolla, G., Urbanoski, K., Atkinson, K., Bardwell, G., Bonn, M., Touesnard, N., Henderson, N., Bowles, J., Boyd, J., Brunelle, C., Eeuwes, J., Fikowski, J., Gomes, T., Guta, A., Hyshka, E., Ivsins, A., Kennedy, M. C.,...Werb, D. (2023). Challenges of implementing safer supply programs in Canada during the COVID-19 pandemic: A qualitative analysis. *International Journal of Drug Policy*, *120*, 104157. https://doi.org/https://doi.org/10.1016/j.drugpo.2023.104157

Keen, D., & Weston, E. (2021). *New Zealand Needle Exchange Programme Cost-Benefit Analysis Report*.

Kennedy-Hendricks, A., Richey, M., McGinty, E. E., Stuart, E. A., Barry, C. L., & Webster, D. W. (2016). Opioid Overdose Deaths and Florida's Crackdown on Pill Mills. *Am J Public Health*, *106*(2), 291-297. https://doi.org/10.2105/ajph.2015.302953

Kennedy, M. C., Boyd, J., Mayer, S., Collins, A., Kerr, T., & McNeil, R. (2019). Peer worker involvement in low-threshold supervised consumption facilities in the context of an overdose epidemic in Vancouver, Canada. *Soc Sci Med*, *225*, 60-68. https://doi.org/10.1016/j.socscimed.2019.02.014

Kennedy, M. C., Hayashi, K., Milloy, M. J., Wood, E., & Kerr, T. (2019). Supervised injection facility use and all-cause mortality among people who inject drugs in Vancouver, Canada: A cohort study. *PLoS Med*, *16*(11), e1002964.

Kennedy, M. C., Karamouzian, M., & Kerr, T. (2017). Public Health and Public Order Outcomes Associated with Supervised Drug Consumption Facilities: a Systematic Review. *Current HIV/AIDS Reports*, *14*(5), 161-183.

Kerr T, K. M., Daniels C. (2025). *Drug Consumption Rooms – Service Models and Evidence* [Evidence brief].

Kerr, T., Tyndall, M., Li, K., Montaner, J., & Wood, E. (2005). Safer injection facility use and syringe sharing in injection drug users. *Lancet*, *366*(9482), 316-318. https://doi.org/10.1016/s0140-6736(05)66475-6

Kilian, C., Lemp, J. M., Llamosas-Falcón, L., Carr, T., Ye, Y., Kerr, W. C., Mulia, N., Puka, K., Lasserre, A. M., Bright, S., Rehm, J., & Probst, C. (2023). Reducing alcohol use through alcohol control policies in the general population and population subgroups: a systematic review and meta-analysis. *eClinicalMedicine*, *59*. https://doi.org/10.1016/j.eclinm.2023.101996

Killion, J. A., Magana, C., Cepeda, J. A., Vo, A., Hernandez, M., Cyr, C. L., Heskett, K. M., Wilson, D. P., Zivin, J. G., & Zuniga, M. L. (2023). Unit costs of needle and syringe program provision: a global systematic review and cost extrapolation. *AIDS*, *37*(15), 2389-2397.

Klee, H., Wright, S., & Morris, J. (1999). Amphetamine users in treatment: Factors associated with sustained abstinence from street drugs. *Addiction Research*, *7*(3), 239-265.

Klimas, J., Fairgrieve, C., Tobin, H., Field, C. A., O'Gorman, C. S. M., Glynn, L. G., Keenan, E., Saunders, J., Bury, G., Dunne, C., & et al. (2018). Psychosocial interventions to reduce alcohol consumption in concurrent problem alcohol and illicit drug users. *Cochrane Database of Systematic Reviews*(12). https://doi.org/10.1002/14651858.CD009269.pub4

KnowYourStuffNZ, t., & New Zealand Needle Exchange Programme. (2023). What's going on with our methamphetamine? https://knowyourstuff.nz/whats-going-on-with-our-methamphetamine/

Kolla, G. F., K. (2023). *Safer Opioid Supply Program Evaluation: A Comparison of SOS Client Outcomes from 2022 and 2023*. L. I. H. Centre. https://www.substanceusehealth.ca/sites/default/files/resources/2023-LIHC-SOS-Evaluation.pdf

Kopua, D. M., Kopua, M. A., & Bracken, P. J. (2020). Mahi a Atua: A Māori approach to mental health. *Transcultural Psychiatry*, *57*(2), 375-383. https://doi.org/10.1177/1363461519851606

Kornør, H., Lobmaier, P. P. K., & Kunøe, N. (2025). Sustained-release naltrexone for opioid dependence. *Cochrane Database of Systematic Reviews*(5). https://doi.org/10.1002/14651858.CD006140.pub3

Krakouer, J., Savaglio, M., Taylor, K., & Skouteris, H. (2022). Community-based models of alcohol and other drug support for First Nations peoples in Australia: A systematic review. *Drug and Alcohol Review*, *41*(6), 1418-1427. https://doi.org/https://doi.org/10.1111/dar.13477

Kral, A. H., Lambdin, B. H., Browne, E. N., Wenger, L. D., Bluthenthal, R. N., Zibbell, J. E., & Davidson, P. J. (2021). Transition from injecting opioids to smoking fentanyl in San Francisco, California. *Drug and Alcohol Dependence*, *227*, 109003. https://doi.org/https://doi.org/10.1016/j.drugalcdep.2021.109003

Krawczyk, N., Allen, S. T., Schneider, K. E., Solomon, K., Shah, H., Morris, M., Harris, S. J., Sherman, S. G., & Saloner, B. (2022). Intersecting substance use treatment and harm reduction services: exploring the characteristics and service needs of a community-based sample of people who use drugs. *Harm reduction journal*, *19*(1), 95.

Kruse, G., Lopez-Carmen, V. A., Jensen, A., Hardie, L., & Sequist, T. D. (2022). The Indian Health Service and American Indian/Alaska Native Health Outcomes. *Annual Review of Public Health*, *43*(Volume 43, 2022), 559-576. https://doi.org/https://doi.org/10.1146/annurev-publhealth-052620-103633

Kypri, K., Davie, G., McElduff, P., Connor, J., & Langley, J. (2014). Effects of Lowering the Minimum Alcohol Purchasing Age on Weekend Assaults Resulting in Hospitalization in New Zealand. *American Journal of Public Health*, *104*(8), 1396-1401. https://doi.org/10.2105/AJPH.2014.301889

Kypri, K., Davie, G., McElduff, P., Langley, J., & Connor, J. (2015). Effects of lowering the alcohol minimum purchasing age on weekend hospitalised assaults of young Māori in New Zealand. *Drug and Alcohol Review*, *34*(3), 299-303. https://doi.org/https://doi.org/10.1111/dar.12241

Laitman, L., Kachur-Karavites, B., & Stewart, L. P. (2014). Building, engaging, and sustaining a continuum of care from harm reduction to recovery support: The Rutgers Alcohol and Other Drug Assistance Program. *Journal of Social Work Practice in the Addictions*, *14*(1), 64-83.

Lalanne, L., Roux, P., Donadille, C., Briand Madrid, L., Célerier, I., Chauvin, C., Hamelin, N., Kervran, C., Maradan, G., Auriacombe, M., & Jauffret-Roustide, M. (2024). Drug consumption rooms are effective to reduce at-risk practices associated with HIV/HCV infections among people who inject drugs: Results from the COSINUS cohort study. *Addiction*, *119*(1), 180-199. https://doi.org/10.1111/add.16320

Langham, S., Wright, A., Kenworthy, J., Grieve, R., & Dunlop, W. C. (2018). Cost-effectiveness of take-home naloxone for the prevention of overdose fatalities among heroin users in the United Kingdom. *Value in health*, *21*(4), 407-415.

Lasco, G. (2022). Decolonizing harm reduction. *Harm reduction journal*, *19*(1), 8. https://doi.org/10.1186/s12954-022-00593-w

Lavalley, J., Kastor, S., Tourangeau, M., Society, W. A. H. R., Goodman, A., & Kerr, T. (2020). You just have to have other models, our DNA is different: the experiences of indigenous people who use illicit drugs and/or alcohol accessing substance use treatment. *Harm reduction journal*, *17*(1), 19. https://doi.org/10.1186/s12954-020-00366-3

Lavalley, J., Steinhauer, L., Bundy, D. B., Kerr, T., & McNeil, R. (2024). "They talk about it like it's an overdose crisis when in fact it's basically genocide": The experiences of Indigenous peoples who use illicit drugs in Vancouver's Downtown Eastside neighbourhood. *International Journal of Drug Policy*, *134*, 104631. https://doi.org/10.1016/j.drugpo.2024.104631

Lazarus, J. V., Safreed-Harmon, K., Hetherington, K. L., Bromberg, D. J., Ocampo, D., Graf, N., Dichtl, A., Stöver, H., & Wolff, H. (2018). Health outcomes for clients of needle and syringe programs in prisons. *Epidemiologic reviews*, *40*(1), 96-104.

League of Nations. (1912). International Opium Convention.

League of Nations. (1925). Geneva Opium Convention.

Ledlie, S., Garg, R., Cheng, C., Kolla, G., Antoniou, T., Bouck, Z., & Gomes, T. (2024). Prescribed safer opioid supply: A scoping review of the evidence. *Int J Drug Policy*, *125*, 104339. https://doi.org/10.1016/j.drugpo.2024.104339

Leone, M. A., Vigna-Taglianti, F., Avanzi, G., Brambilla, R., & Faggiano, F. (2010). Gamma-hydroxybutyrate (GHB) for treatment of alcohol withdrawal and prevention of relapses. *Cochrane Database of Systematic Reviews*(2). https://doi.org/10.1002/14651858.CD006266.pub2

Levengood, T. W., Yoon, G. H., Davoust, M. J., Ogden, S. N., Marshall, B. D. L., Cahill, S. R., & Bazzi, A. R. (2021). Supervised Injection Facilities as Harm Reduction: A Systematic Review. *Am J Prev Med*, *61*(5), 738-749. https://doi.org/10.1016/j.amepre.2021.04.017

Levine, S. M., Andrea Norton, Alexa (2021). Putting Indigenous Harm Reduction to Work: Developing and Evaluating "Not Just Naloxone". *International Journal of Indigenous Health*, *16*(2). https://doi.org/10.32799/ijih.v16i2.33346

Lewis, C. R., Vo, H. T., & Fishman, M. (2017). Intranasal naloxone and related strategies for opioid overdose intervention by nonmedical personnel: a review. *Substance Abuse and Rehabilitation*, *8*, 79-95. https://doi.org/https://doi.org/10.2147/SAR.S101700

Lloyd, C. (2013). The stigmatization of problem drug users: A narrative literature review. *Drugs: education, prevention and policy*, *20*(2), 85-95.

Low, G., Lindsay Latimer, C., & Mills, A. (2025). Stable housing, 'home' and desistance: Views from Aotearoa New Zealand. *Criminology & Criminal Justice*, *25*(5), 1629-1649. https://doi.org/10.1177/17488958231210990

Lucero, E. (2011). From Tradition to Evidence: Decolonization of the Evidence-based Practice System. *Journal of Psychoactive Drugs*, *43*(4), 319-324. https://doi.org/10.1080/02791072.2011.628925

Lyu, A. (2023). Narcofeminist 'chemsex': Rethinking sexualised drug use in a shifting queer landscape marked by public health emergency. *The Sociological Review*, *71*(4), 881-901. https://doi.org/10.1177/00380261231175728

MacCoun, R. J., & Reuter, P. (2001). *Drug war heresies: Learning from other vices, times, and places*. Cambridge University Press.

Macfarlane, A. M., S. Gillon, G. (2015). Sharing the food baskets of knowledge: creating the space for a blending of streams. . In A. M. Macfarlane, S. Webber, M. (Ed.), *Sociocultural Realities: Exploring new horizons* (pp. 52-66). Cantebury University Press.

Madden, E., Fisher, A., Mills, K., & Marel, C. (2021). Best practice approaches for alcohol and other drug treatment in residential settings. *Evidence check prepared for the Network of Alcohol and other Drugs Agencies (NADA), commissioned and managed by NADA. Retrieved August*, *25*, 2021.

Maghsoudi, N., Tanguay, J., Scarfone, K., Rammohan, I., Ziegler, C., Werb, D., & Scheim, A. I. (2022). Drug checking services for people who use drugs: a systematic review. *Addiction*, *117*(3), 532-544.

Magnuson, M., Vandenberg, S., Oosterbroek, T., & Dey, K. (2025). "We've lost a lot of lives:" the impact of the closure of North America's busiest supervised consumption site on people who

use substances and the organizations that work with them. *Harm Reduct J*, *22*(1), 98. https://doi.org/10.1186/s12954-025-01251-7

Magwood, O., Salvalaggio, G., Beder, M., Kendall, C., Kpade, V., Daghmach, W., Habonimana, G., Marshall, Z., Snyder, E., & O'Shea, T. (2020). The effectiveness of substance use interventions for homeless and vulnerably housed persons: a systematic review of systematic reviews on supervised consumption facilities, managed alcohol programs, and pharmacological agents for opioid use disorder. *PloS one*, *15*(1), e0227298.

Maharaj, T., Angus, C., Fitzgerald, N., Allen, K., Stewart, S., MacHale, S., & Ryan, J. D. (2023). Impact of minimum unit pricing on alcohol-related hospital outcomes: systematic review. *BMJ Open*, *13*(2). https://doi.org/https://doi.org/10.1136/bmjopen-2022-065220

Marlatt, G. A. (1996). Harm reduction: Come as you are. *Addictive Behaviors*, *21*(6), 779-788. https://doi.org/https://doi.org/10.1016/0306-4603(96)00042-1

Marsh, T. N., Cote-Meek, S., Young, N. L., Najavits, L. M., & Toulouse, P. (2016). Indigenous Healing and Seeking Safety: A Blended Implementation Project for Intergenerational Trauma and Substance Use Disorders. *The International Indigenous Policy Journal*, *7*(2). https://doi.org/10.18584/iipj.2016.7.2.3

Marsh, T. N., Young, N. L., Cote-Meek, S., Najavits, L. M., & Toulouse, P. (2016). Impact of Indigenous Healing and Seeking Safety on Intergenerational Trauma and Substance Use in an Aboriginal Sample. *Journal of Addiction Research and Therapy*, *7*(3). https://doi.org/10.4172/2155-6105.1000284

Marshall, B. D., Milloy, M. J., Wood, E., Montaner, J. S., & Kerr, T. (2011). Reduction in overdose mortality after the opening of North America's first medically supervised safer injecting facility: a retrospective population-based study. *Lancet*, *377*(9775), 1429-1437. https://doi.org/10.1016/s0140-6736(10)62353-7

Mateu-Molla, J., Perez-Galvez, B., & Villanueva-Blasco, V. J. (2025). Pharmacological treatment for substance use disorder: A systematic review [Review]. *Addictive Behaviors*, *163(no pagination)*, Article 108242.

Mathias, H., Gehring, N. D., Hammond, R. M., Navarrete, J., Crépault, J.-F., Emerson, B., Markov, A., Kosteniuk, B., Speed, K., & Candler, E. (2025). Defining a public health approach to substance use: insights from a systematic scoping review and conceptual framework development approach. *BMC Public Health*, *25*(1), 4365.

Matskiv G, M. T., Krieg O, Viste D, Ghosh SM. (2022). Virtual overdose monitoring services: a novel adjunctive harm reduction approach for addressing the overdose crisis [Analysis]. *Canadian Medical Association Journal*, *194*(46), E1568–E1572. https://doi.org/10.1503/cmaj.220579

Maxwell, S., Bigg, D., Stanczykiewicz, K., & Carlberg-Racich, S. (2006). Prescribing naloxone to actively injecting heroin users: a program to reduce heroin overdose deaths. *J Addict Dis*, *25*(3), 89-96. https://doi.org/10.1300/J069v25n03_11

Mayer, A., Montgomery, N., Hughes, E., Ang, B. B., & Johnson, O. E. (2025). Detection and characterisation of a new nitazene analogue, butodesnitazene: A collaborative approach to the identification of novel psychoactive substances through Drug Checking. *Forensic Science International*, 112717.

Maynard, K. (2022). *Te Tiriti o Waitangi and alcohol law: How Te Tiriti o Waitangi could be given appropriate effect in alcohol law and why it is important to do so*

McAuley, A., Aucott, L., & Matheson, C. (2015). Exploring the life-saving potential of naloxone: A systematic review and descriptive meta-analysis of take home naloxone (THN) programmes for opioid users. *International Journal of Drug Policy*, *26(12)*, 1183-1188. https://doi.org/https://dx.doi.org/10.1016/j.drugpo.2015.09.011

McCambridge, J., Kypri, K., Drummond, C., & Strang, J. (2014). Alcohol Harm Reduction: Corporate Capture of a Key Concept. *PLOS Medicine*, *11*(12), e1001767. https://doi.org/10.1371/journal.pmed.1001767

McCarty, G. W., Felicity Poutama, Lindsay Lyons, Antonia, Newcombe, David, & de Fossard, S. (2024). *A Kaupapa Māori Evaluation of Community-Based Initiatives to Reduce Harm from Methamphetamine in Hawke's Bay*. H. T. H. M. P. Health. https://hapai.co.nz/sites/default/files/research/he-kura-te-tangata/he-kura-te-tangata-report.pdf

McDonald, R., & Strang, J. (2016). Are take-home naloxone programmes effective? Systematic review utilizing application of the Bradford Hill criteria. *Addiction*, *111*(7), 1177-1187. https://doi.org/https://doi.org/10.1111/add.13326

McGovern, R., Newham, J., Addison, M., Hickman, M., & Kaner, E. (2022). The effectiveness of psychosocial interventions at reducing the frequency of alcohol and drug use in parents: findings of a Cochrane Review and meta-analyses. *Addiction*, *117*(10), 2571-2582. https://doi.org/10.1111/add.15846

McLachlan, A., Levy, M., McClintock, K., & Tauroa, R. (2015). A literature review: Addressing Indigenous Parental Substance Use and Child Welfare in Aotearoa: A Whānau Ora Framework. *Journal of Ethnicity in Substance Abuse*, *14*(1), 96-109. https://doi.org/10.1080/15332640.2014.947460

McLachlan, A., & Waitoki, W. (2024). Tawhiti: An Indigenous Trauma-Informed Harm Reduction Approach to Alcohol and Other Drug Use. *Journal of Indigenous Wellbeing*, *7*(1), 21-36.

McNair, R., Monaghan, M., & Montgomery, P. (2023). Heroin assisted treatment for key health outcomes in people with chronic heroin addictions: A context-focused systematic review. *Drug Alcohol Depend*, *247*, 109869. https://doi.org/10.1016/j.drugalcdep.2023.109869

McNeil, R., Kerr, T., Lampkin, H., & Small, W. (2015). "We need somewhere to smoke crack": an ethnographic study of an unsanctioned safer smoking room in Vancouver, Canada. *International Journal of Drug Policy*, *26*(7), 645-652.

Mellentin, A. I., Finn, S. W., Skot, L., Thaysen-Petersen, D., Mistarz, N., Fink-Jensen, A., & Nielsen, D. G. (2023). The effectiveness of oxytocin for treating substance use disorders:A systematic review of randomized placebo-controlled trials [Review]. *Neuroscience and Biobehavioral Reviews*, *151(no pagination)*, Article 105185.

Miles, S. W., Sheridan, J., Russell, B., Kydd, R., Wheeler, A., Walters, C., Gamble, G., Hardley, P., Jensen, M., Kuoppasalmi, K., Tuomola, P., Fohr, J., Kuikanmaki, O., Vorma, H., Salokangas, R., Mikkonen, A., Kallio, M., Kauhanen, J., Kiviniemi, V., & Tiihonen, J. (2013). Extended-release methylphenidate for treatment of amphetamine/methamphetamine dependence: a

randomized, double-blind, placebo-controlled trial. *Addiction*, *108*(7), 1279-1286. https://doi.org/10.1111/add.12109

Milloy, M. J., Wood, Evan. (2009). Emerging Role of Supervised Injecting Facilities in Human Immunodeficiency Virus Prevention. *Addiction*, *104*(4), 620-621. https://doi.org/https://doi.org/10.1111/j.1360-0443.2009.02541.x

Ministry of Health. (2015). *National Drug Policy 2015 to 2020*. https://www.health.govt.nz/publications/national-drug-policy-2015-to-2020

Ministry of Health. (2021). *Misuse of Drugs Amendment Act 2019 Post-Implementation Review*

Ministry of Health. (2025a). *Annual Data Explorer 2024/25* (https://minhealthnz.shinyapps.io/nz-health-survey-2024-25-annual-data-explorer/_w_8ea5dac0e40748009a95406e24da7a41/#!/explore-indicators

Ministry of Health. (2025b). *New Zealand Health Survey. Annual Data Explorer [Data File]*. Ministry of Health | Manatū Hauora. Retrieved 2 March 2026 from https://minhealthnz.shinyapps.io/nz-health-survey-2024-25-annual-data-explorer/

Ministry of Health. (2026). *Action Plan to Prevent and Reduce Substance Harm 2026 – 2029*.

Ministry of Justice. (2025). *Action to address methamphetamine-related harm* https://www.justice.govt.nz/assets/Documents/Publications/Action-to-Address-Methamphetamine-Related-Harm_FINAL.pdf

Minozzi, S., Amato, L., Bellisario, C., & Davoli, M. (2014a). Detoxification treatments for opiate dependent adolescents. *Cochrane Database of Systematic Reviews*(4). https://doi.org/10.1002/14651858.CD006749.pub3

Minozzi, S., Amato, L., Bellisario, C., & Davoli, M. (2014b). Maintenance treatments for opiate - dependent adolescents. *Cochrane Database of Systematic Reviews*(6). https://doi.org/10.1002/14651858.CD007210.pub3

Minozzi, S., Amato, L., Jahanfar, S., Bellisario, C., Ferri, M., & Davoli, M. (2020). Maintenance agonist treatments for opiate-dependent pregnant women. *Cochrane Database of Systematic Reviews*(11). https://doi.org/10.1002/14651858.CD006318.pub4

Minozzi, S., Amato, L., Pani, P. P., Solimini, R., Vecchi, S., De Crescenzo, F., Zuccaro, P., & Davoli, M. (2015). Dopamine agonists for the treatment of cocaine dependence. *Cochrane Database of Systematic Reviews*(5). https://doi.org/10.1002/14651858.CD003352.pub4

Minozzi, S., Amato, L., Vecchi, S., Davoli, M., Kirchmayer, U., & Verster, A. (2011). Oral naltrexone maintenance treatment for opioid dependence. *Cochrane Database of Systematic Reviews*(4). https://doi.org/10.1002/14651858.CD001333.pub4

Minozzi, S., Cinquini, M., Amato, L., Davoli, M., Farrell, M. F., Pani, P. P., & Vecchi, S. (2015). Anticonvulsants for cocaine dependence. *Cochrane Database of Systematic Reviews*(4). https://doi.org/10.1002/14651858.CD006754.pub4

Minozzi, S., La Rosa, G. R., Salis, F., Camposeragna, A., Saulle, R., Leggio, L., & Agabio, R. (2025). Combined pharmacological and psychosocial interventions for alcohol use disorder. *Cochrane Database of Systematic Reviews*(3). https://doi.org/10.1002/14651858.CD015673.pub2

Ministry of Justice. (2019). *Alcohol and Other Drug Treatment Court Outcomes Evaluation 2018-19*. https://www.justice.govt.nz/assets/Documents/Publications/AODTC-Summary-Evaluation-Report-June-2019.pdf

Martins, M.L., Wilthagen, E. A., Oviedo-Joekes, E., Beijnen, J. H., de Grave, N., Uchtenhagen, A., Beck, T., Van den Brink, W., & Schinkel, A. H. (2021). The suitability of oral diacetylmorphine in treatment-refractory patients with heroin dependence: A scoping review. *Drug Alcohol Depend*, *227*, 108984. https://doi.org/10.1016/j.drugalcdep.2021.108984

Moallef, S., & Hayashi, K. (2021). The effectiveness of drug-related Good Samaritan laws: A review of the literature. *International Journal of Drug Policy*, *90*, 102773. https://doi.org/https://doi.org/10.1016/j.drugpo.2020.102773

Mocanu, V., Viste, D., Rioux, W., & Ghosh, S. M. (2024). Accessibility gaps of physical supervised consumption sites in Canada motivating the use of overdose response technology/phone based virtual overdose response services: a retrospective cohort study. *Lancet Reg Health Am*, *34*, 100770. https://doi.org/10.1016/j.lana.2024.100770

Mongan, D., Millar, S. R., Brennan, M. M., Doyle, A., Galvin, B., & McCarthy, N. (2025). Associations and mediating factors between adverse childhood experiences and substance use behaviours in early adulthood: A population-based longitudinal study. *Addictive Behaviors*, *161*, 108194. https://doi.org/https://doi.org/10.1016/j.addbeh.2024.108194

Montgomery, L., Robinson, C., Seaman, E. L., & Haeny, A. M. (2017). A scoping review and meta-analysis of psychosocial and pharmacological treatments for cannabis and tobacco use among African Americans [Review]. *Psychology of Addictive Behaviors*, *31(8)*, 922-943.

Morgan, C. J., Muetzelfeldt, L., Muetzelfeldt, M., Nutt, D. J., & Curran, H. V. (2010). Harms associated with psychoactive substances: findings of the UK National Drug Survey. *Journal of Psychopharmacology*, *24*(2), 147-153.

Moses, L. E., Vlahov, D., & Normand, J. (1995). Preventing HIV transmission: the role of sterile needles and bleach.

Moustaqim-Barrette, A., Dhillon, D., Ng, J., Sundvick, K., Ali, F., Elton-Marshall, T., Leece, P., Rittenbach, K., Ferguson, M., & Buxton, J. A. (2021). Take-home naloxone programs for suspected opioid overdose in community settings: a scoping umbrella review. *BMC Public Health*, *21*(1), 597. https://doi.org/10.1186/s12889-021-10497-2

MSIC Evaluation Committee. (2003). *Final Report of the Evaluation of the Sydney Medically Supervised Injecting Centre* [Evaluation report].

Nadelmann, E. A. (1989). Drug prohibition in the United States: Costs, consequences, and alternatives. *Science*, *245*(4921), 939-947.

National Harm Reduction Coalition. (n.d.-a). *Native Harm Reduction Toolkit*. https://harmreduction.org/native-toolkit/

National Harm Reduction Coalition. (n.d.-b). *Principles of Harm Reduction*. Retrieved 26 November 2025 from https://harmreduction.org/about-us/principles-of-harm-reduction/

Nelson, L. A., Shinagawa, E., Garza, C. M., Squetimkin-Anquoe, A., Jeffries, I., Rajeev, V., Taylor, E. M., Taylor, S., Eakins, D., Parker, M. E., Ubay, T., King, V., Duffing-Romero, X., Park, S., Saplan, S., Clifasefi, S. L., Lowe, J., & Collins, S. E. (2024). A pilot study of virtual Harm Reduction Talking

Circles for American Indian and Alaska Native adults with alcohol use disorder. *Journal of Community Psychology*, *52*(6), 739-761. https://doi.org/https://doi.org/10.1002/jcop.23127

Nepal, S., Kypri, K., Tekelab, T., Hodder, R. K., Attia, J., Bagade, T., Chikritzhs, T., & Miller, P. (2020). Effects of Extensions and Restrictions in Alcohol Trading Hours on the Incidence of Assault and Unintentional Injury: Systematic Review. *J Stud Alcohol Drugs*, *81*(1), 5-23.

New Zealand Drug Foundation. (2024). *Drug overdoses in Aotearoa*.

New Zealand Drug Foundation. (2025a). *Drug Use in Aotearoa 2023/24*.

New Zealand Drug Foundation. (2025b). *Safer drug laws for Aotearoa New Zealand. Evidence to inform regulatory change*.

New Zealand Drug Foundation. (2025c). *What we saw at drug checking in 2024*. https://drugfoundation.org.nz/news-and-reports/report-drug-checking-2024

Misuse of Drugs Act 1975, (1975). https://www.legislation.govt.nz/act/public/1975/0116/latest/DLM436101.html

Newcombe, D. A. L., de Fossard, S., McKetin, R., Nosa, V., Parag, V., Poa, T. R., Ramalho, R., Ao, B. T., Sheridan, J., Walters, C., & Walker, N. (2025). Tū Whakaruruhau: the evaluation of treatment outcomes for methamphetamine dependence in Aotearoa, New Zealand - study protocol for a prospective longitudinal cohort study and longitudinal qualitative study. *BMC Health Serv Res*, *25*(1), 1131. https://doi.org/10.1186/s12913-025-13233-3

Noller, G., & Bourke, J. (2020). Point-of-care rapid testing for hepatitis C antibodies at New Zealand needle exchanges. *The New Zealand Medical Journal (Online)*, *133*(1525), 84-87.

Noroozi, A., Kebriaeezadeh, A., Mirrahimi, B., Armoon, B., Ahounbar, E., Narenjiha, H., Salehi, M., & Karamouzian, M. (2021). Opium tincture-assisted treatment for opioid use disorder: A systematic review. *J Subst Abuse Treat*, *129*, 108519. https://doi.org/10.1016/j.jsat.2021.108519

Nosa, V., Palavi, L., & Heather, M. (2023). A Pacific addictions perspective: a qualitative study exploring barriers and solutions for Pacific substance and behavioural addictions services in Aotearoa, New Zealand. *Drugs, Habits and Social Policy*, *24*(3), 191-204.

Nutt, D., King, L. A., Saulsbury, W., & Blakemore, C. (2007). Development of a rational scale to assess the harm of drugs of potential misuse. *The Lancet*, *369*(9566), 1047-1053.

Nutt, D. J., King, L. A., & Phillips, L. D. (2010). Drug harms in the UK: a multicriteria decision analysis. *The Lancet*, *376*(9752), 1558-1565.

Oakley Browne, M., Wells, J., & KM, S. (2006). *Te Rau Hinengaro: The New Zealand Mental Health Survey*. https://www.health.govt.nz/system/files/2011-11/mental-health-survey.pdf

Opai, K. (2020). *Te Reo Hāpai. The Language of Enrichment. A Māori language glossary for use in the mental health, addiction and disability sectors*. Te Pou. https://www.tereohapai.nz/

Paki, H. M. (2010). *Evaluation of Rongo Atea: Alcohol and Other Drug Treatment Centre for Adolescents* University of Waikato]. https://researchcommons.waikato.ac.nz/entities/publication/281e454a-a2cd-4cb5-8d23-b31e91f1bea1

Palamar, J. J., & Krotulski, A. J. (2024). Medetomidine Infiltrates the US Illicit Opioid Market. *JAMA*, *332*(17), 1425-1426. https://doi.org/10.1001/jama.2024.15992

Palmateer, N., Kimber, J., Hickman, M., Hutchinson, S., Rhodes, T., & Goldberg, D. (2010). Evidence for the effectiveness of sterile injecting equipment provision in preventing hepatitis C and human immunodeficiency virus transmission among injecting drug users: a review of reviews. *Addiction*, *105*(5), 844-859. https://doi.org/https://doi.org/10.1111/j.1360-0443.2009.02888.x

Pani, P. P., Trogu, E., Vecchi, S., & Amato, L. (2011). Antidepressants for cocaine dependence and problematic cocaine use. *Cochrane Database of Systematic Reviews*(12). https://doi.org/10.1002/14651858.CD002950.pub3

Paradies, Y. (2016). Colonisation, racism and indigenous health. *Journal of Population Research*, *33*(1), 83-96. https://doi.org/10.1007/s12546-016-9159-y

Parés-Badell, O., Barbaglia, G., Robinowitz, N., Majó, X., Torrens, M., Espelt, A., Bartroli, M., Gotsens, M., & Brugal, M. T. (2020). Integration of harm reduction and treatment into care centres for substance use: The Barcelona model. In (Vol. 76, pp. 102614): Elsevier.

Patton, D., Best, D., & Brown, L. (2022). Overcoming the pains of recovery: The management of negative recovery capital during addiction recovery pathways. *Addiction Research & Theory*, *30*(5), 340-350.

Pegler, E., Garvey, G., Fitzgerald, L., Kvassay, A., Alexander, N., Davey, G., Rowling, D., & Smirnov, A. (2025). The Unique Experience of Intersectional Stigma and Racism for Aboriginal and Torres Strait Islander People Who Inject Drugs, and Its Effect on Healthcare and Harm Reduction Service Access. *International Journal of Environmental Research and Public Health*, *22*(7). https://doi.org/10.3390/ijerph22071120

Peniamina, R., McNoe, B., & Signal, L. (2023). *Public awareness of cancer risk factors & support for prevention policies in Aotearoa New Zealand: A focus on alcohol and diet. Available from: https://www.cancer.org.nz/assets/Awareness-fullreport-Oct2023-ISBN.pdf*. https://www.cancer.org.nz/assets/Awareness-fullreport-Oct2023-ISBN.pdf

Pere, R. T. R. N., N. (1997). *Te Wheke: A celebration of Infinite Wisdom* (2 ed.). Ao Ako Global Learning New Zealand.

Pérez-Mañá, C., Castells, X., Torrens, M., Capellà, D., & Farre, M. (2013). Efficacy of psychostimulant drugs for amphetamine abuse or dependence. *Cochrane Database of Systematic Reviews*(9). https://doi.org/10.1002/14651858.CD009695.pub2

Perri, M., Guta, A., Kaminski, N., Bonn, M., Kolla, G., Bayoumi, A., Challacombe, L., Touesnard, N., Gagnon, M., McDougall, P., & Strike, C. (2023). Spotting as a risk mitigation method: A qualitative study comparing organization-based and informal methods. *International Journal of Drug Policy*, *111*, 103905. https://doi.org/https://doi.org/10.1016/j.drugpo.2022.103905

Perri, M., Rudzinski, K., Guta, A., Xavier, J., Kolla, G., Carusone, S. C., & Strike, C. (2026). Defining success together: a collaborative approach for client and provider-engaged outcomes indicator development in Ontario. *Research Involvement and Engagement*.

Perri, M., Schmidt, R. A., Guta, A., Kaminski, N., Rudzinski, K., & Strike, C. (2022). COVID-19 and the opportunity for gender-responsive virtual and remote substance use treatment and harm reduction services. *International Journal of Drug Policy*, *108*, 103815.

Perry, A., Martyn-St James, M., Burns, L., Hewitt, C., Glanville, J. M., Aboaja, A., Thakkar, P., Santosh Kumar, K. M., Pearson, C., & Wright, K. (2019). Interventions for female drug-using offenders. *Cochrane Database of Systematic Reviews*(12). https://doi.org/10.1002/14651858.CD010910.pub3

Perry, A. E., Neilson, M., Martyn-St James, M., Glanville, J. M., Woodhouse, R., Godfrey, C., & Hewitt, C. (2015). Pharmacological interventions for drug-using offenders. *Cochrane Database of Systematic Reviews*(6). https://doi.org/10.1002/14651858.CD010862.pub2

Perry, D., Kirkwood, J. E. M., Doroshuk, M. L., Kelmer, M., Korownyk, C. S., Ton, J., & Garrison, S. R. (2025). Opioid agonist therapy for opioid use disorder in primary versus specialty care. *Cochrane Database of Systematic Reviews*(9). https://doi.org/10.1002/14651858.CD013672.pub2

Persaud, S., Tzemis, D., Kuo, M., Bungay, V., & Buxton, J. A. (2013). Controlling Chaos: The Perceptions of Long-Term Crack Cocaine Users in Vancouver, British Columbia, Canada. *Journal of addiction*, *2013*(1), 851840.

PHARMAC. (2024, 2024/03/04). Pharmac supplies naloxone to needle exchange sites. https://www.pharmac.govt.nz/news-and-resources/news/pharmac-supplies-naloxone-to-needle-exchange-sites

Platt, L., Minozzi, S., Reed, J., Vickerman, P., Hagan, H., French, C., Jordan, A., Degenhardt, L., Hope, V., & Hutchinson, S. (2018). Needle and syringe programmes and opioid substitution therapy for preventing HCV transmission among people who inject drugs: findings from a Cochrane Review and meta-analysis. *Addiction*, *113*(3), 545-563.

Potier, C., Laprévote, V., Dubois-Arber, F., Cottencin, O., & Rolland, B. (2014). Supervised injection services: what has been demonstrated? A systematic literature review. *Drug Alcohol Depend*, *145*, 48-68. https://doi.org/10.1016/j.drugalcdep.2014.10.012

Potter, S., Noller, G., Pillay, L., & Crossin, R. (2025). Injecting-related injuries experienced by people who inject drugs in New Zealand: impact, healthcare access and stigma. *The New Zealand Medical Journal (Online)*, *138*(1611), 65-78.

Prangnell, A., Dong, H., Daly, P., Milloy, M. J., Kerr, T., & Hayashi, K. (2017). Declining rates of health problems associated with crack smoking during the expansion of crack pipe distribution in Vancouver, Canada. *BMC Public Health*, *17*(1), 163. https://doi.org/10.1186/s12889-017-4099-9

Preto, M. C., Kortas, G. T., Blaas, I. K., Lassi, D. L. S., Waisman Campos, M., Torales, J., Ventriglio, A., de Azevedo-Marques Perico, C., de Andrade, A. G., & Castaldelli-Maia, J. M. (2023). Unravelling the landscape of Cannabis craving pharmacological treatments: a PRISMA-guided review of evidence [Review]. *International Review of Psychiatry*, *35(5-6)*, 434-449.

Rahimi-Movaghar, A., Amin-Esmaeili, M., Hefazi, M., & Yousefi-Nooraie, R. (2013). Pharmacological therapies for maintenance treatments of opium dependence. *Cochrane Database of Systematic Reviews*(1). https://doi.org/10.1002/14651858.CD007775.pub2

Rahimi-Movaghar, A., Gholami, J., Amato, L., Hoseinie, L., Yousefi-Nooraie, R., & Amin-Esmaeili, M. (2018). Pharmacological therapies for management of opium withdrawal. *Cochrane Database of Systematic Reviews*(6). https://doi.org/10.1002/14651858.CD007522.pub2

Rammohan, I., Gaines, T., Scheim, A., Bayoumi, A., & Werb, D. (2024). Overdose mortality incidence and supervised consumption services in Toronto, Canada: an ecological study and spatial analysis. *Lancet Public Health*, *9*(2), e79-e87. https://doi.org/10.1016/s2468-2667(23)00300-6

Randerson, S., Casswell, S., & Huckle, T. (2018). Changes in New Zealand's alcohol environment following implementation of the Sale and Supply of Alcohol Act (2012). *The New Zealand Medical Journal (Online)*, *131*(1476), 14-23.

Reddon, H., Kerr, T., & Milloy, M. J. (2020). Ranking evidence in substance use and addiction. *Int J Drug Policy*, *83*, 102840. https://doi.org/10.1016/j.drugpo.2020.102840

Reid, M. C., Oliphant-Wells, T., Moreno, C., Ketchum, J., Fitzpatrick, T., McMahan, V. M., & Glick, S. N. (2023). High levels of interest in access to free safer smoking equipment to reduce injection frequency among people who inject drugs in Seattle, Washington. *Drug Alcohol Depend Rep*, *7*, 100163. https://doi.org/10.1016/j.dadr.2023.100163

Reid, P., Cormack, D., & Paine, S. J. (2019). Colonial histories, racism and health-The experience of Maori and Indigenous peoples. *Public Health*, *172*, 119-124. https://doi.org/10.1016/j.puhe.2019.03.027

Renfroe, C. L. (1986). MDMA on the Street: Analysis Anonymous®. *Journal of Psychoactive Drugs*, *18*(4), 363-369. https://doi.org/10.1080/02791072.1986.10472371

Rhodes, T. (2002). The 'risk environment': a framework for understanding and reducing drug-related harm. *International Journal of Drug Policy*, *13*(2), 85-94.

Rhodes, T. (2009). Risk environments and drug harms: a social science for harm reduction approach. In (Vol. 20, pp. 193-201): Elsevier.

Rijnink, A., Blake, D., Groot, S., & Brough, C. (2022). Accessing needle exchange services in disasters for remote areas of Aotearoa New Zealand. *Harm reduction journal*, *19*(1), 145.

Ritter, A., Bell, J., Strang, J., Ezard, N., Rodgers, C., Belackova, V., Jauncey, M., Siefried, K. J., Roberts, D. M., van den Brink, W., Lintzeris, N., Dunlop, A., Oviedo-Joekes, E., & Treloar, C. (2025). Bridging the evidence and the politics: Implementation trial of supervised injectable opioid treatment (SIOT) in Australia. *International Journal of Drug Policy*, *138*, 104749. https://doi.org/https://doi.org/10.1016/j.drugpo.2025.104749

Ritter, A., Hughes, C., & Shanahan, M. (2018). Bulletin No. 26: Models for the decriminalisation of the personal use and possession of drugs.

Roberts, N. P., Roberts, P. A., Jones, N., & Bisson, J. I. (2016). Psychological therapies for post-traumatic stress disorder and comorbid substance use disorder. *Cochrane Database of Systematic Reviews*(4). https://doi.org/10.1002/14651858.CD010204.pub2

Rolles, S., & Measham, F. (2011). Questioning the method and utility of ranking drug harms in drug policy. *International Journal of Drug Policy*, *22*(4), 243-246.

Rolleston, A. K., Cassim, S., Kidd, J., Lawrenson, R., Keenan, R., & Hokowhitu, B. (2020). Seeing the unseen: evidence of kaupapa Māori health interventions. *AlterNative: An International Journal of Indigenous Peoples*, *16*(2), 129-136. https://doi.org/10.1177/1177180120919166

Saah, T. (2005). The evolutionary origins and significance of drug addiction. *Harm reduction journal*, *2*(1), 8.

Salmon, A. M., van Beek, I., Amin, J., Kaldor, J., & Maher, L. (2010). The impact of a supervised injecting facility on ambulance call-outs in Sydney, Australia. *Addiction*, *105*(4), 676-683. https://doi.org/10.1111/j.1360-0443.2009.02837.x

Sanchez-Ramirez, D. C., & Voaklander, D. (2018). The impact of policies regulating alcohol trading hours and days on specific alcohol-related harms: a systematic review. *Injury Prevention*, *24*(1), 94-100. https://doi.org/10.1136/injuryprev-2016-042285

Saunders, J. B., Aasland, O. G., Babor, T. F., De la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction*, *88*(6), 791-804.

Scheinmann, R., Hagan, H., Lelutiu-Weinberger, C., Stern, R., Des Jarlais, D. C., Flom, P. L., & Strauss, S. (2007). Non-injection drug use and hepatitis C virus: a systematic review. *Drug and Alcohol Dependence*, *89*(1), 1-12.

Schwenker, R., Dietrich, C. E., Hirpa, S., Nothacker, M., Smedslund, G., Frese, T., & Unverzagt, S. (2023). Motivational interviewing for substance use reduction. *Cochrane Database of Systematic Reviews*(12). https://doi.org/10.1002/14651858.CD008063.pub3

Scott, K., Becker, S. J., Helseth, S. A., Saldanha, I. J., Balk, E. M., Adam, G. P., Konnyu, K. J., & Steele, D. W. (2022). Pharmacotherapy interventions for adolescent co-occurring substance use and mental health disorders: a systematic review [Review]. *Family Practice*, *39(2)*, 301-310.

Sellman, J. D. H., T. T.. (1997). Comments on Landau's “The prospect of a harm reduction approach among indigenous people in Canada”. *Drug and Alcohol Review*, *16*(1), 85-86. https://doi.org/https://doi.org/10.1080/09595239700186351

Shang, M., Thiel, B., Liebschutz, J. M., Kraemer, K. L., Freund, A., & Jawa, R. (2023). Implementing harm reduction kits in an office-based addiction treatment program. *Harm reduction journal*, *20*(1), 163.

Shannon, K., Ishida, T., Morgan, R., Bear, A., Oleson, M., Kerr, T., & Tyndall, M. W. (2006). Potential community and public health impacts of medically supervised safer smoking facilities for crack cocaine users. *Harm Reduct J*, *3*, 1. https://doi.org/10.1186/1477-7517-3-1

Sharafi, H., Bakouni, H., McAnulty, C., Drouin, S., Coronado-Montoya, S., Bahremand, A., Bach, P., Ezard, N., Le Foll, B., Schutz, C. G., Siefried, K. J., Tardelli, V. S., Ziegler, D., & Jutras-Aswad, D. (2024). Prescription psychostimulants for the treatment of amphetamine-type stimulant use disorder: A systematic review and meta-analysis of randomized placebo-controlled trials. *Addiction*, *119*(2), 211-224. https://doi.org/10.1111/add.16347

Sharma, R., Tikka, S. K., Bhute, A. R., & Bastia, B. K. (2022). N-acetyl cysteine in the treatment of cannabis use disorder: A systematic review of clinical trials [Short Survey]. *Addictive Behaviors*, *129(no pagination)*, Article 107283.

Sharpe, C., Busza, J., Vuckovic, C., Scott, J., Hope, V., Southwell, M., Wilkins, L., Platt, L., & Harris, M. (2026). Pipes as an engagement tool: qualitative findings from a crack equipment and harm reduction training intervention in England. *Int J Drug Policy*, *149*, 105165. https://doi.org/10.1016/j.drugpo.2026.105165

Sheridan, J., Henderson, C., Greenhill, N., & Smith, A. (2005). Pharmacy-based needle exchange in New Zealand: a review of services. *Harm reduction journal*, *2*(1), 10.

Shields, E., Wright, K., Borland, A., Connor, J., Randerson, S., & Maynard, K. (2025). *New Zealanders strongly support policies to curb alcohol harm – will government listen?* https://www.phcc.org.nz/briefing/new-zealanders-strongly-support-policies-curb-alcohol-harm-will-government-listen

Siefried, K. J., Acheson, L. S., Lintzeris, N., & Ezard, N. (2020). Pharmacological Treatment of Methamphetamine/Amphetamine Dependence: A Systematic Review. *CNS Drugs*, *34*(4), 337-365. https://doi.org/10.1007/s40263-020-00711-x

Siegel, R. K. (2005). *Intoxication: The universal drive for mind-altering substances*. Inner Traditions/Bear & Co.

Sivak, L., Reilly, R., Lockton, J., Treloar, C., Roe, Y., McKetin, R., Butt, J., Ezard, N., Winkenweder, H., & Ward, J. (2023). Psychosocial stress and methamphetamine use: A mixed-methods study of intersectional stigma and Aboriginal and Torres Strait Islander methamphetamine use. *International Journal of Drug Policy*, *121*, 104189. https://doi.org/https://doi.org/10.1016/j.drugpo.2023.104189

Smart, R., & Reuter, P. (2022). Does heroin-assisted treatment reduce crime? A review of randomized-controlled trials. *Addiction*, *117*(3), 518-531. https://doi.org/10.1111/add.15601

SMART Recovery. *Smart Recoverey Programs | Yarn SMART Training*. https://smartrecoveryaustralia.com.au/yarn-smart-training

Smith-Bernardin, S. M., Suen, L. W., Barr-Walker, J., Cuervo, I. A., & Handley, M. A. (2022). Scoping review of managed alcohol programs. *Harm reduction journal*, *19*(1), 82.

Spackman, E., Premji, S., Woroniuk, A., Lang, E., Milaney, K., & McBrien, K. (2025). The effect of take-home naloxone kits on opioid-related deaths in Alberta, Canada: An ecological analysis. *Canadian Journal of Public Health*, *116*(4), 509-517. https://doi.org/10.17269/s41997-025-01056-y

Sprakes, A. R.-S., A.; Murray, M.; Kuhn, S.; Ambury, S. (2024). *Safer Supply Program Evaluation: A Response to Drug Poisonings in Thunder Bay, Ontario*. L. U. School of Social Work. https://www.substanceusehealth.ca/sites/default/files/TBSSP%20Program%20Evaluation%20Report%202024%20FINAL-1.pdf

Strang, J., Groshkova, T., Metrebian, N., Drugs, E. M. C. f., & Addiction, D. (2012). *New heroin-assisted treatment: recent evidence and current practices of supervised injectable heroin treatment in Europe and beyond* (Vol. 170). Publications Office of the European Union Luxembourg.

Strang, J., Groshkova, T., Uchtenhagen, A., van den Brink, W., Haasen, C., Schechter, M. T., Lintzeris, N., Bell, J., Pirona, A., Oviedo-Joekes, E., Simon, R., & Metrebian, N. (2015). Heroin on trial: systematic review and meta-analysis of randomised trials of diamorphine-prescribing as

treatment for refractory heroin addictiondagger. *Br J Psychiatry*, *207*(1), 5-14. https://doi.org/10.1192/bjp.bp.114.149195

Syvertsen, J., Cabral, A., Knaap, E., Rey, S., & Pollini, R. A. (2025). The emergence of fentanyl in a stimulant landscape: Un/intentional use, social relations, and developing communities of care. *International Journal of Drug Policy*, *140*, 104807. https://doi.org/https://doi.org/10.1016/j.drugpo.2025.104807

Tapper, A., Ahern, C., Graveline-Long, Z., Newberger, N. G., & Hughto, J. M. W. (2023). The utilization and delivery of safer smoking practices and services: a narrative synthesis of the literature. *Harm Reduct J*, *20*(1), 160. https://doi.org/10.1186/s12954-023-00875-x

Taylor, J. L., Johnson, S., Cruz, R., Gray, J. R., Schiff, D., & Bagley, S. M. (2021). Integrating harm reduction into outpatient opioid use disorder treatment settings: harm reduction in outpatient addiction treatment. *Journal of General Internal Medicine*, *36*(12), 3810-3819.

Taylor, N., Miller, P., Coomber, K., Mayshak, R., Zahnow, R., Patafio, B., Burn, M., & Ferris, J. (2018). A mapping review of evaluations of alcohol policy restrictions targeting alcohol-related harm in night-time entertainment precincts. *International Journal of Drug Policy*, *62*, 1-13. https://doi.org/https://doi.org/10.1016/j.drugpo.2018.09.012

Te Piki Oranga. (2020). *Graduates champion the "Stop Meth Use" programme*. https://www.tpo.org.nz/whanau-news/2020/08/15/graduates-champion-the-stop-meth-use-programme-8x6jz-s8jtt

Te Pou. (2025). *Alcohol and other drug outcome measure (ADOM) Report 20: Summary of ADOM collection data for period July 2024 to June 2025* [Report](978-1-991076-87-8). https://www.tepou.co.nz/initiatives/alcohol-and-drug-outcome-measure

Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation. *Harm reduction practice values*. https://drugfoundation.org.nz/topics/policy-and-practice/harm-reduction/harm-reduction-values

Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation. (2024a). Funding vital for overdose reversal nasal spray. https://drugfoundation.org.nz/news-and-reports/funding-vital-for-overdose-reversal-nasal-spray

Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation. (2024b). *Neurodivergence and substance use: Evidence, insights and recommendations*. https://drugfoundation.org.nz/assets/PageBlocks/Downloads/Neurodivergence-and-substance-use-v2.pdf

Te Puna Whakaiti Pāmamae Kai Whakapiri | New Zealand Drug Foundation. (2025). *Using Indigenous Values to Underpin Harm Reduction for All* Harm Reduction International, Bogota, Colombia. https://hr25.hri.global/site/templates/images/pdfs/HR25-796.pdf

Temmingh, H. S., Williams, T., Siegfried, N., & Stein, D. J. (2018). Risperidone versus other antipsychotics for people with severe mental illness and co-occurring substance misuse. *Cochrane Database of Systematic Reviews*(1). https://doi.org/10.1002/14651858.CD011057.pub2

Thompson, K., Di Censo, G., Bowden, J., Georgiou, N., Thompson, M., Cock, V., Brewerton, B., & Ryder, C. (2025). Evaluation of a Residential Managed Alcohol Program for Aboriginal Peoples

Experiencing Homelessness and Alcohol Dependence: Short-Term Impacts of an Australian Trial. *Drug and Alcohol Review*, *44*(7), 2061-2065.

Traccis, F., Minozzi, S., Trogu, E., Vacca, R., Vecchi, S., Pani, P. P., & Agabio, R. (2024). Disulfiram for the treatment of cocaine dependence. *Cochrane Database of Systematic Reviews*(1). https://doi.org/10.1002/14651858.CD007024.pub3

Tracy, M., Freeburn, B., Lee, K., Woods, J., & Conigrave, K. (2023). Review of alcohol and drug treatment for Aboriginal and Torres Strait Islander peoples. *Journal of the Australian Indigenous HealthInfoNet*, *4*(1). https://doi.org/10.14221/aihjournal.v4n1.1

Tse, W. C., Djordjevic, F., Borja, V., Picco, L., Lam, T., Olsen, A., Larney, S., Dietze, P., & Nielsen, S. (2022). Does naloxone provision lead to increased substance use? A systematic review to assess if there is evidence of a 'moral hazard' associated with naloxone supply [Review]. *International Journal of Drug Policy*, *100(no pagination)*, Article 103513. https://doi.org/https://dx.doi.org/10.1016/j.drugpo.2021.103513

Tupper, K. W., McCrae, K., Garber, I., Lysyshyn, M., & Wood, E. (2018). Initial results of a drug checking pilot program to detect fentanyl adulteration in a Canadian setting. *Drug Alcohol Depend*, *190*, 242-245. https://doi.org/10.1016/j.drugalcdep.2018.06.020

United Nations Office on Drugs and Crime. (2025). *World Drug Report 2025*

van Amsterdam, J., Nutt, D., Phillips, L., & van den Brink, W. (2015). European rating of drug harms. *Journal of Psychopharmacology*, *29*(6), 655-660.

van der Sterren, A. E., Nathan, S., Rawstorne, P., Yarbakhsh, E., Gough, C., & Bowles, D. (2023). Involvement of people who use alcohol and other drug services in the development of patient-reported measures of experience: A scoping review. *Health Expectations*, *26*(6), 2151-2163.

Van Zee, A. (2009). The promotion and marketing of oxycontin: commercial triumph, public health tragedy. *Am J Public Health*, *99*(2), 221-227. https://doi.org/10.2105/ajph.2007.131714

Viste, D., Rioux, W., Cristall, N., Orr, T., Taplay, P., Morris-Miller, L., & Ghosh, S. M. (2023). Association of drug overdoses and user characteristics of Canada's national mobile/virtual overdose response hotline: the National Overdose Response Service (NORS). *BMC Public Health*, *23*(1), 1869. https://doi.org/10.1186/s12889-023-16751-z

Vuilleumier, C., Scherbaum, N., Bonnet, U., & Roser, P. (2022). Cannabinoids in the Treatment of Cannabis Use Disorder: Systematic Review of Randomized Controlled Trials [Review]. *Frontiers in Psychiatry*, *13(no pagination)*, Article 867878.

Waight, S. (2012). *Higher Ground Evaluation Section IV. Report on the Maori Programme*.

Walton, D. M., S. (2021). *The Evaluation of Te Ara Oranga: The Path to Wellbeing. A Methamphetamine Harm Reduction Programme in Northland*. M. o. Health. https://www.health.govt.nz/system/files/2021-12/the-evaluation-of-te-ara-oranga-mar22.pdf

Walton, S. E., Krotulski, A. J., & Logan, B. K. (2022). A Forward-Thinking Approach to Addressing the New Synthetic Opioid 2-Benzylbenzimidazole Nitazene Analogs by Liquid Chromatography-Tandem Quadrupole Mass Spectrometry (LC-QQQ-MS). *J Anal Toxicol*, *46*(3), 221-231. https://doi.org/10.1093/jat/bkab117

Weatherburn, D. (2009). Dilemmas in harm minimization. *Addiction*, *104*(3), 335-339.

Welwean, R., Chambers, L., Marshall, B., & Beaudoin, F. (2025). Risk factors for experiencing substance use-related employment stigma among emergency department patients at high risk of opioid overdose. *Harm Reduct J*, *22*(1), 174. https://doi.org/10.1186/s12954-025-01289-7

Whare Tukutuku. (2026). *Te Wai Taramea 2026: Māori Alcohol & Other Drug Workforce Report* [Workforce Report].

Whelan, J., & Crossin, R. (2025, 2025/05/27). Providing safe smoking kits could reduce harm from meth use – but NZ law won't allow it. *The Conversation*. https://theconversation.com/providing-safe-smoking-kits-could-reduce-harm-from-meth-use-but-nz-law-wont-allow-it-254695

Whelan, J., Noller, G., & Ward, R. D. (2024). Harm reduction behaviours and harm experiences of people who use 3, 4-methylenedioxymethamphetamine (MDMA) in Aotearoa New Zealand. *Harm reduction journal*, *21*(1), 67.

Whelan, J., Ward, R. D., & Noller, G. (2024). A thematic analysis of MDMA-related harm and harm reduction experiences and knowledge in Aotearoa New Zealand. *Harm reduction journal*, *21*(1), 100.

Wilkins, C., van der Sanden, R., Rychert, M., Romeo, J., Parker, K., Graydon-Guy, T. . (2026). *Cocaine availability and use rises steadily but price remains high* (NZ Drug Trends Issue. https://nzdrugtrends.co.nz/

Wilkinson, C., Livingston, M., & Room, R. (2016). Impacts of changes to trading hours of liquor licences on alcohol-related harm: a systematic review 2005–2015. *Public health research and practice*, *26*(4), e2641644.

Wilson, J. D., Klipp, S. P., Leon, K., Liebschutz, J. M., Merlin, J., Murray-Krezan, C., Nolette, S., Phillips, K. T., Stein, M., & Weinstock, N. (2025). "To not feel fake, it can't be fake": co-creation of a harm reduction, peer-delivered, health-system intervention for people who use drugs. *Harm reduction journal*, *22*(Suppl 1), 108.

Wood, E., Tyndall, M. W., Montaner, J. S., & Kerr, T. (2006). Summary of findings from the evaluation of a pilot medically supervised safer injecting facility. *CMAJ*, *175*(11), 1399-1404. https://doi.org/10.1503/cmaj.060863

World Health Organization. (2018). *The SAFER initiative: a world free from alcohol related harm*. World Health Organisation. https://www.who.int/initiatives/SAFER

World Health Organization. (2025). *Restricting alcohol availability in practice: evidence from selected countries*. https://www.who.int/publications/i/item/9789240110083

Yee, A., Bentham, R., Byrne, J. L., Veale, J., Ker, A., Norris, M., Tan, K. K., Jones, H., Polkinghorne, T., & Gonzalez, S. (2025). Counting ourselves: Findings from the 2022 Aotearoa New Zealand trans and non-binary health survey.

Yeh, P. T., Yang, X., Kennedy, C. E., Armstrong, K. A., Fonner, V. A., Sherryn, O'Reilly, K. R., & Sweat, M. D. (2023). The impact of needle and syringe exchange programs on HIV-Related risk behaviors in Low-and Middle-Income countries: a systematic review and meta-analysis examining individual-versus community-level effects. *AIDS and Behavior*, *27*(10), 3306-3331.

Yousefifard, M., Vazirizadeh-Mahabadi, M. H., Neishaboori, A. M., Alavi, S. N. R., Amiri, M., Baratloo, A., & Saberian, P. (2020). Intranasal versus Intramuscular/Intravenous Naloxone for

Pre-hospital Opioid Overdose: A Systematic Review and Meta-analysis. *Adv J Emerg Med*, *4*(2), e27. https://doi.org/10.22114/ajem.v0i0.279

Yu S, G. J., Noller G. (2022). *6 Monthly Drug Use Report: July– December 2022*.

Zinberg, N. E. (1984). *Drug, set, and setting: The basis for controlled intoxicant use* (Vol. 7). Yale University Press New Haven, CT.

Zolopa, C., Clifasefi, S. L., Dobischok, S., Gala, N., Fraser-Purdy, H., Phillips, M. K., Blackmore, S., & Wendt, D. C. (2025). A scoping review of harm reduction practices and possibilities among indigenous populations in Australia, Canada, and the United States. *Drug and Alcohol Dependence*, *269*, 112597. https://doi.org/10.1016/j.drugalcdep.2025.112597

Zoorob, M. (2019). Fentanyl shock: The changing geography of overdose in the United States. *International Journal of Drug Policy*, *70*, 40-46. https://doi.org/https://doi.org/10.1016/j.drugpo.2019.04.010

Zuk, A. M., Ahmed, F., Charania, N. A., Sutherland, C., Kataquapit, G., Moriarity, R. J., Spence, N. D., Tsuji, L. J. S., & Liberda, E. N. (2024). An Indigenous-led buprenorphine-naloxone treatment program to address opioid use in remote Northern Canada. *Dialogues in Health*, *5*, 100190. https://doi.org/https://doi.org/10.1016/j.dialog.2024.100190