

Minimising The Harms From Methamphetamine

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Executive summary

Harmful methamphetamine use has become a serious and intractable health issue in Aotearoa New Zealand over the past 20 years, and it is the country's most feared and stigmatised substance. While Aotearoa New Zealand has turned increasingly towards a health-based approach to drug use over the past several years, no comprehensive analysis has been undertaken about what that might look like in the context of methamphetamine use.

This paper begins by providing an overview of how methamphetamine is used, by whom and why, how big the market is, what the harms are that it causes, and how it is currently regulated. We then recommend how we can reduce those harms by better implementing what the evidence tells us about how to lower demand and support people better using a mix of psychosocial, cultural, and pharmacological approaches.

While only around 1.2% of New Zealanders use methamphetamine each year, according to the New Zealand Health Survey,¹ the relatively low overall number of users hides the significant health, social, and economic impacts of dependent use. While methamphetamine is used in every community in Aotearoa New Zealand, the negative impacts are particularly severe in

¹ Ministry of Health (2021). *Annual Data Explorer 2020/21: New Zealand Health Survey*. <https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer>

communities with high pre-existing levels of deprivation and where prevalence of use is significantly higher than the population average. Wastewater testing shows highest per capita methamphetamine use in rural towns in Northland, Bay of Plenty, and Hawkes Bay.²

Māori use methamphetamine at a higher rate than non-Māori, and are criminalised for its use at a disproportionately higher rate.³ The flow-on impacts of colonisation and ongoing systemic racism lead to Māori being more likely to suffer from mental health and addiction issues, and generally from poorer health overall. That means that methamphetamine use takes a higher toll on Māori, who also face greater barriers to accessing appropriate healthcare. In addition, Māori face cultural impacts from high methamphetamine use that are not experienced by other groups. Community leaders have highlighted the negative impacts from high rates of methamphetamine use as one of the most significant issues facing Māori communities.⁴

Methamphetamine is a strong and addictive stimulant. While the majority of people may use it occasionally over a long period without serious health effects, others can rapidly become dependent and find it extremely difficult to stop using it.

The social and economic impacts of methamphetamine in Aotearoa New Zealand are significant. Large profit margins have led to the development of highly sophisticated distribution networks. In some parts of the country, these networks market methamphetamine aggressively, using many of the same tactics as the alcohol industry, such as freebies, discounts, and targeted advertising. These networks aim to introduce new users to methamphetamine, and to increase use among those who already use.

Anecdotally, methamphetamine has in many places replaced, or partly replaced, cannabis as a key source of income for some gangs and other organised crime groups.

It is clear from local and international evidence that attempting to reduce harmful drug use by focusing on reducing supply alone does not work – where there is demand for a drug, someone will always step in to sell it for a profit. Arresting a dealer or intercepting a large amount at the border may dent supply temporarily, but never for long. It is also clear that aggressively marketing a drug can help to increase demand (alcohol is a good example of this phenomenon).

Historically, our approach to reducing harm from methamphetamine use in Aotearoa New Zealand has primarily been to focus on the supply side: coming down hard on dealers, and attempting to stamp out international trafficking and local manufacture. At the same time, we have punished people who use the drug and provided too little, if any, treatment and other

² National Drug Intelligence Bureau (2022). Obtained 19 June 2022 under the Official Information Act 1982.

³ Mercier K., & Jarrett H. (2022). *State of the nation 2022*. New Zealand Drug Foundation.
<https://www.drugfoundation.org.nz/assets/uploads/2022-uploads/State-of-the-Nation-2022-web.pdf>

⁴ For example, personal communications with staff from Te Rau Ora, an organisation that works to improve Māori health through leadership, education, research, and evaluation.

support options. Support is often only available to those who are already severely dependent, or who enter the criminal justice system.

The public discourse is now starting to acknowledge that controlling use through enforcement alone has been largely unsuccessful and that drug use should be treated as a health and social issue. Prosecuting individuals for their use is neither effective, nor compassionate. A programme in Northland – Te Ara Oranga – has successfully piloted an approach where police, health staff, iwi and local NGOs work together to address social issues, and help people access help, rather than prosecuting people for their use.⁵

To get on top of problematic methamphetamine use in Aotearoa New Zealand we need to increase the focus on innovative, and proven, ways to reduce demand. We also need to help people who experience methamphetamine addiction to extricate themselves from a toxic illicit market. People who are addicted often become trapped by debt and turn to dealing or other crime to support their own use.

First, we propose a comprehensive approach to prevention, harm reduction, early intervention, and accessibility of treatment services. In this paper we examine some of the different interventions that could achieve that – such as rolling out the Te Ara Oranga approach nationally.

Second, we propose a pilot to test whether a stimulant substitution treatment model tailored to the Aotearoa New Zealand context could help individuals move away from the harmful impacts of contact and involvement with the illicit methamphetamine market, thus making it easier for them to access support and treatment, and get their lives back on track.

In our proposed pilot, a substitute stimulant – or where this is ineffective, methamphetamine itself – would be provided in tightly controlled circumstances to people who have become addicted and have struggled to achieve abstinence, despite having been through two rounds of treatment.

Methamphetamine addiction treatment is often successful at helping people reduce their use but does not always help them achieve full abstinence, or maintain abstinence in the long term. This proposal could help both those who have found treatment to be unsuccessful and those who have found it to be partly successful. Prescribed stimulant substitution could help both groups to avoid interaction with the illicit market and the risks that entails.

Our proposal is modelled on highly effective and well-evidenced experiences in Aotearoa New Zealand with opioid substitution treatment, with heroin-assisted treatment in Switzerland and

⁵ Walton, D., & Martin, S. (2021). *The evaluation of Te Ara Oranga: The path to wellbeing. A methamphetamine harm reduction programme in Northland*. Ministry of Health.

other places, as well as recent experiences in Canada, where drugs such as amphetamines and opioids have been provided on prescription to dependent users.^{6,7,8,9}

Summary of recommendations

- **Comprehensive locality-based approaches.** Roll out Te Ara Oranga, a comprehensive social-wellbeing intervention, across the country. This programme has been positively evaluated and found to reduce offending by 34%. The total cost of rolling out Te Ara Oranga would be as little as \$40–\$45 million and is estimated to return \$3–\$7 on each dollar invested.¹⁰
- **A substitution treatment pilot.** Trial stimulant substitution treatment for people who are addicted to methamphetamine, to improve health outcomes and extricate people from harmful contact with the illicit drug market. Our proposal is based on research from Aotearoa New Zealand, Canada, Switzerland, and elsewhere that indicates we may expect to see a range of positive impacts on health, harmful use patterns, and criminal justice involvement.
- **Health harm-reduction measures.** Improve measures that reduce the harm experienced by those who use methamphetamine, or may consider using it, including to:
 - fund the development of pragmatic harm-reduction information and resources for people who use methamphetamine and their families and whānau
 - increase provision of drug checking services
 - provide early intervention services such as screenings and brief interventions in primary and community care, as well as providing targeted health checks and treatment for people who use methamphetamine
 - provide a safe space for people to go when or after using methamphetamine
 - provide intensive support for people who are using while pregnant, or who have young children
 - investigate the potential of peer-led interventions to reduce initiation into methamphetamine use
 - provide safer smoking kits and a bigger range of free injecting equipment to minimise methamphetamine use-related harms.
- **Treatment and support**

⁶ Rolles, S. (2016). *Heroin-Assisted Treatment in Switzerland: Successfully regulating the supply and use of a high-risk injectable drug*. Transform. <http://files.idpc.net/library/Heroin-assisted%20treatment%20Switzerland.pdf>; MacCoun, R., & Reuter, P. (2001). *Drug war heresies: Learning from other vices, times, and places*. Cambridge University Press.

⁷ Palis, H. et al. (2021a). Exploring the effectiveness of dextroamphetamine for the treatment of stimulant use disorder: A qualitative study with patients receiving injectable opioid agonist treatment. *Substance Abuse Treatment, Prevention, and Policy*, 16(1), 68. <https://pubmed.ncbi.nlm.nih.gov/34530878/>

⁸ Tardelli, V. S. et al. (2020). Prescription psychostimulants for the treatment of stimulant use disorder: A systematic review and meta-analysis. *Psychopharmacology*, 237(8), 2233–55. doi:10.1007/s00213-020-05563-3

⁹ Wayne Miles, S. et al. (2013). Extended-release methylphenidate for treatment of amphetamine/methamphetamine dependence: A randomized, double-blind, placebo-controlled trial. *Addiction*, 108(7). DOI:10.1111/add.12109

¹⁰ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*.

- Stepped increase in treatment sector funding to meet demand and eliminate waitlists.
- Implement the findings of the government inquiry into mental health and addiction, which called for increased investment in addiction services and emphasised the importance of providing interventions earlier, before an individual starts to experience serious problems.¹¹
- Ensure services are available in the areas with highest demand, such as small towns in the Bay of Plenty, Northland, and Hawkes Bay.
- Provide more culturally appropriate support and programmes for Māori. These should be designed with the leadership and control of Māori, should include approaches that work with whānau as well as the individual, and should be easily accessible across the country.
- Provide more low-barrier treatment services, such as at-home detox and treatment options that do not require abstinence as a condition of entry.
- Invest in workforce development for addiction and harm-reduction services, and expand the availability of peer support throughout the whole health-care system.
- Trial contingency management, which is the use of incentives in exchange for evidence of abstinence from stimulant use.
- Trial the expansion of exercise-based treatment and support groups.
- Provide counselling and support for whānau and families affected by methamphetamine use, and expand pregnancy and parenting services for people who use methamphetamine, to help reduce the impact on children.
- Provide ongoing after-care support following treatment for addiction.
- Develop training for health providers to reduce stigmatisation and improve care offered to people who use methamphetamine.
- Develop better integrated services for people who use methamphetamine, such as pathways into education and work.
- Improve pathways into diagnosis and well-managed treatment for those who suffer from Attention-Deficit/Hyperactivity Disorder (ADHD) in Aotearoa New Zealand, and further investigate the link between ADHD and methamphetamine use in the Aotearoa New Zealand context. ADHD is a risk factor for methamphetamine use, especially when undiagnosed and untreated.¹²
- **Contextual changes.** Targeted efforts to reduce poverty, improve housing security, and help people who use methamphetamine into employment or education.
- **Regulatory changes,** including to:
 - remove criminal penalties for possession of small quantities of methamphetamine and other drugs, and legalise possession of drug utensils
 - regulate cannabis and other lower harm substances to provide safer alternatives to methamphetamine and keep more people away from the illicit market

¹¹ Government Inquiry into Mental Health and Addiction (2018). *He Ara Oranga: Report of the Government Inquiry into Mental Health and Addiction*. Ministry of Health.

¹² Bordoloi, M., Chandrashekar, G., & Yarasi, N. (2019). ADHD in adults and its relation with methamphetamine use: National data. *Current Developmental Disorders Reports*, 6, 224–227. <https://doi.org/10.1007/s40474-019-00174-w>

- review prescribing restrictions on dexamphetamine and methylphenidate under the Misuse of Drugs Regulations 1977.
- **Research and innovation.**
 - Provide dedicated funding to develop a centre of excellence to:
 - research who uses methamphetamine, why, and how, with a particular focus on improving knowledge and data around Māori use and cessation
 - innovate around harm reduction, treatment, and support approaches, develop treatment guidelines and training, and evaluate interventions
 - use wastewater testing data to help guide delivery of support services to communities most affected by methamphetamine use and to evaluate the effectiveness of interventions aimed at lowering use.

Introduction

Much of this paper relies on international literature and data because there is relatively little data in Aotearoa New Zealand on this topic. There is obviously a need for caution in assuming international data will apply in Aotearoa New Zealand in the same way. We have preferentially sought out Australian literature where nothing is available from Aotearoa New Zealand because of the broad cultural similarities between the two countries.

Who uses methamphetamine and why?

According to the New Zealand Health Survey, use of amphetamines (including methamphetamine) is highly correlated with neighbourhood deprivation levels, gender, ethnicity, and disability.¹³ Māori are more likely to use than non-Māori, and Pacific peoples are less likely to use than non-Pacific people. Men are nearly three times more likely to use amphetamines than women. However, Māori women are nearly three times more likely to use methamphetamine than non-Māori women, a disparity much greater than that between Māori and non-Māori men.

Those living in the poorest neighbourhoods are over seven times more likely to use amphetamines (including methamphetamine) than those in the wealthiest, and the correlation between poverty and the likelihood of using is even greater for women than men. Disabled people are nearly three times more likely to use amphetamines than non-disabled people.¹⁴

¹³ Ministry of Health (2021). Annual Data Explorer 2020/21: *New Zealand Health Survey*. <https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer>

¹⁴ Ministry of Health (2020). *Adults – Topic: Illicit drug use*. https://minhealthnz.shinyapps.io/nz-health-survey-2019-20-annual-dataexplorer/_w_58133efd/#!/explore-topics; Mercier & Jarrett. (2022). *State of the nation 2022*.

Aotearoa New Zealand data shows that people who frequently use methamphetamine (those who **use at least monthly**) tend to be older (mid 30s), are more likely to be male (57% of consumers), and are more likely to be Māori (38% of consumers). The average age increased from 30 years in 2009 to 36 in 2015, suggesting the population of people who use it frequently is ageing. About 22% of the people who used methamphetamine frequently in 2006 were Māori but this increased to 38% in 2015. It is not clear if this change was due to non-Māori using less, or Māori using more.¹⁵

We have no data on the use of methamphetamine in adolescents alone. The New Zealand Health Survey groups people aged 16–24 into a single cohort, which has a lower yearly use prevalence rate (1.4%) than the next cohort of people aged 25–34 (1.7%).¹⁶ Anecdotal evidence indicates use by young people aged 18 and below remains rare, but for those few who become addicted, the impacts can be serious.¹⁷

People use methamphetamine for many reasons. Some people use it because it is pleasurable and it makes them feel good. Others use it because the drug provides relief from negative experiences such as pain, stress, and trauma. Methamphetamine can lead to sensations of euphoria, social confidence, alertness, appetite suppression, and increased libido.¹⁸ These effects lead to the drug being used in common situations and by particular groups.

The range of reasons for using methamphetamine is different for each person. We have identified some situations and groups below to highlight some of the key reasons and motivators. People in each of these groups will also have different support needs, and a different approach will be needed to reduce the negative impacts of use. While we don't have literature-based evidence on the size of these groups, they are based on practice-based evidence about known reasons for people using methamphetamine.¹⁹ Many people are likely to have needs represented across a number of these categories, or their motivations may change over time.

- **Socialising:** Like other drugs, methamphetamine can be used as a way of bonding socially with others.²⁰

¹⁵ Wilkins, C., Prasad, J., Romeo, J. S., & Rychert, M. (2017). *Recent trends in illegal drug use in New Zealand 2006–2016: Findings from the Illicit Drug Monitoring System (IDMS)*. Centre for Social and Health Outcomes Research and Evaluation, Massey University.

¹⁶ Ministry of Health (2021). *Annual Data Explorer 2020/21*.

¹⁷ Welham, K. (2017). The myth: Methamphetamine and minors. *Matters of Substance*, 28(1). <https://www.drugfoundation.org.nz/matters-of-substance/archive/march-2017/methamphetamine-and-minors/>

¹⁸ The Level. (n.d.). *Methamphetamine*. <https://thelevel.org.nz/drug-information/methamphetamine/effects/>

¹⁹ O'Donnell, A. et al. (2019). Which individual, social and environmental influences shape key phases in the amphetamine type stimulant use trajectory? A systematic narrative review and thematic synthesis of the qualitative literature. *Addiction*, 114(1), 24–47. DOI: 10.1111/add.14434.

²⁰ O'Donnell et al. (2019). Which individual, social and environmental influences shape key phases in the amphetamine type stimulant use trajectory?

- **Dealing with trauma and self-managing unmet health and mental health issues:** Like many illegal drugs, methamphetamine can be used to self-manage the effects of trauma, and health and mental health issues. Early traumatic experiences can prompt initiation of methamphetamine usage.²¹
- **Cognitive performance enhancing:** Methamphetamine is sometimes used as a performance-enhancing drug in the workplace, for study, or in other similar settings. Methamphetamine increases energy levels and increases the attention span, as well as focus.
- **People who want or need to stay awake:** Methamphetamine is sometimes used by people who need to remain awake for many hours.²² This may be linked to occupations that require long working hours.
- **Chemsex:** Chemsex generally refers to men who have sex with men under the influence of psychoactive drugs, particularly methamphetamine, though other drugs may also be used in conjunction with methamphetamine. “[P]eople engaging in chemsex report better sex, with these drugs reducing inhibitions and increasing pleasure. They facilitate sustained arousal and induce a feeling of instant rapport with sexual partners.”²³ Methamphetamine also tends to inhibit ejaculation, leading to longer-lasting sexual encounters.
- **Sex workers:** Sex workers may use methamphetamine because of its libido-stimulating properties. This makes their work more enjoyable for them and can increase their willingness to work longer hours.²⁴ Some people addicted to methamphetamine become sex workers to fund their addiction.²⁵
- **Partiers/clubbers:** Methamphetamine is sometimes used specifically by people attending dance parties or nightclubs. Increased energy, ability to stay awake, and enhanced sociability are all factors that lead this group to use methamphetamine, sometimes with other drugs.²⁶
- **Weight loss:** One study of people who regularly use methamphetamine found that just over a third of female participants cited weight loss as one of their reasons for

²¹ O’Donnell et al. (2019). Which individual, social and environmental influences shape key phases in the amphetamine type stimulant use trajectory?

²² O’Donnell et al. (2019). Which individual, social and environmental influences shape key phases in the amphetamine type stimulant use trajectory?

²³ McCall, H., Adams, N., Mason, D., & Willis, J. (2015). What is chemsex and why does it matter? *BMJ*, 351. doi:10.1136/bmj.h5790

²⁴ Ho, H. T., Le, G. M., & Dinh, T. T. (2013). Female sex workers who use amphetamine-type stimulants (ATS) in three cities of Vietnam: Use and sexual risks related to HIV/AIDS. *Global Public Health*, 8(5), 552–569. doi:10.1080/17441692.2013.790459

²⁵ Patel R. et al. (2019). Drug use in street sex workers (DUSSK) study: Results of a mixed methods feasibility study of a complex intervention to reduce illicit drug use in drug dependent female sex workers. *BMJ Open*, 10(12). <https://bmjopen.bmj.com/content/10/12/e036491>

²⁶ Kelly, B. C., LeClair, A., & Parsons, J. T. (2013). Methamphetamine use in club subcultures. *Substance Use & Misuse*, 48(14), 1541–52. doi:10.3109/10826084.2013.808217

methamphetamine usage.²⁷ Methamphetamine suppresses appetite. Amphetamine-like substances have been used medically for weight loss. Phentermine, an amphetamine-like substance, is currently available as a prescription drug for weight loss.

- **Adults with ADHD:** ADHD is a recognised comorbidity of methamphetamine dependence.²⁸ This is unsurprising, given that ADHD is typically treated with stimulants, including methylphenidate (Concerta, Ritalin, Rubifen) and dextroamphetamine (Dexedrine) in Aotearoa New Zealand. The risk-taking characteristics of untreated ADHD can lead to methamphetamine use and methamphetamine can be used to self-medicate ADHD symptoms.²⁹
- **Addiction:** Some people use methamphetamine because they are addicted to it, and their original reasons for initiating or continuing use may no longer apply.

While the discussion above focuses on the factors or motivators that may lead to methamphetamine use, in almost all these circumstances initiation to and ongoing use of methamphetamine is a socially mediated process. People are introduced to methamphetamine by their friends or whānau, and shown how to use it. They may use methamphetamine as a way of bonding or belonging to a social group where methamphetamine is commonly used.³⁰

In a small qualitative study in Auckland in 2009 (n = 20) of people who used methamphetamine (most of whom were in treatment), the majority had been initiated through their social networks, usually via friends or partners. With the exception of one person, participants in the study had used other illicit substances prior to trying methamphetamine and most had used a range of other illicit drugs, with cannabis and amphetamines ('speed') being the most common. Mostly, the initiation was unplanned – only one interviewee stated that they specifically went out and bought the drug the first time they used it.³¹

Factors that may lead people to increase their use of methamphetamine and potentially develop methamphetamine use disorder include:³²

- a desire to intensify the effect or perceived benefit they were gaining from its use
- loss of control of amount and frequency of use
- mental health deterioration

²⁷ Brecht, M.-L., O'Brien, A., von Mayrhauser, C., & Anglin, M. D. (2004). Methamphetamine use behaviors and gender differences. *Addictive Behaviors*, 29(1), 89–106. doi:10.1016/s0306-4603(03)00082-0

²⁸ Obermeit, L. C. et al. (2013). Attention-deficit/hyperactivity disorder among chronic methamphetamine users: Frequency, persistence, and adverse effects on everyday functioning. *Addictive Behaviors*, 38(12), 2874–78. DOI: 10.1016/j.addbeh.2013.08.010.

²⁹ Bordoloi et al. (2019). ADHD in adults and its relation with methamphetamine use.

³⁰ O'Donnell et al. (2019). Which individual, social and environmental influences shape key phases in the amphetamine type stimulant use trajectory?

³¹ Sheridan, K., Butler, R., & Wheeler, A. (2009). Initiation into methamphetamine use: Qualitative findings from an exploration of first time use among a group of New Zealand users. *Journal of Psychoactive Drugs*, 41(1), 11–17.

³² O'Donnell et al. (2019). Which individual, social and environmental influences shape key phases in the amphetamine type stimulant use trajectory?

- family and relationship problems
- unemployment
- unstable housing, food, or finances
- physical health problems.

Summary: People use methamphetamine because it is pleasurable and makes them feel better, at least initially. There is a broad variety of people who use it for differing reasons and initiation is usually socially mediated. People who use methamphetamine more than once a month are more likely to be older (mid 30s) and male. Māori are significantly and disproportionately impacted by methamphetamine use. People who live in wealthy neighbourhoods are much less likely than those who live in poorer neighbourhoods to use amphetamines (including methamphetamine). People who live with a disability are more than three times more likely to use amphetamines than those who do not.

How many people use methamphetamine, and how frequently?

The popularity of any illicit drug is a function of both supply and demand dynamics, as well as social and cultural factors. Methamphetamine's relative popularity in Australia and Aotearoa New Zealand is thought to at least be partly due to the low availability of heroin, cocaine, and amphetamine sulphate.³³ Aotearoa New Zealand's distance from international markets and maritime borders make it more difficult and costly to smuggle in drugs. One factor that may have contributed to methamphetamine becoming established in Aotearoa New Zealand was the availability of the precursor (pseudoephedrine) as an over-the-counter medication. Pseudoephedrine could then be domestically manufactured into methamphetamine. Once the market for methamphetamine was established, banning over-the-counter sales of pseudoephedrine appears to have had no impact at a population level on methamphetamine use.³⁴

The high profit margins on methamphetamine are also likely to have led to its increased availability over other drugs such as cannabis.³⁵ The high profit margins create a strong incentive along the whole supply chain to make methamphetamine more available. While we perceive methamphetamine to be a significant problem in Aotearoa New Zealand, wastewater

³³ Groves, A., & Marmo, M. (2009). How to "melt the ice" on the streets: A social-control analysis on the rise of methamphetamine within Australia and the need to reduce demand. *Current Issues in Criminal Justice*, 20(3), 413–32. doi:10.1080/10345329.2009.12035820

³⁴ Ministry of Health. (2016). *Amphetamine use 2015/16: New Zealand Health Survey*. [https://www.moh.govt.nz/notebook/nbbooks.nsf/0/3DD48A7E0AD81C66CC257DEA00738257/\\$file/amphetamine-use-2015-16-nzhs-dec16.pdf](https://www.moh.govt.nz/notebook/nbbooks.nsf/0/3DD48A7E0AD81C66CC257DEA00738257/$file/amphetamine-use-2015-16-nzhs-dec16.pdf)

³⁵ Wilkins, C., Romeo, J. S., Rychert, M., Prasad, J., & Graydon-Guy, T. (2018). Determinants of high availability of methamphetamine, cannabis, LSD and ecstasy in New Zealand: Are drug dealers promoting methamphetamine rather than cannabis? *International Journal of Drug Policy*, 61, 15–22.

testing suggests that there is higher consumption (per capita) in Australia, the US, Canada, Slovakia, Czech Republic, and some parts of Germany.³⁶

The most recent data (2020/21) from the New Zealand Health Survey suggests that about 1.2% of the adult population, or 40,000 people, have used methamphetamine (or other amphetamines) at least once in the last year.³⁷

In 2012/13, 0.2% of Aotearoa New Zealand adults aged 16–64 years reported having used amphetamines at least monthly (this question is not asked regularly).³⁸ This equated to about 6000 New Zealanders who were actively using the drug at any one time. At the same time, about 0.9% of the population, or about 25,000, reported having used amphetamines in the past year, a slightly lower proportion of the population than currently.³⁹ This suggests that, despite concerted efforts and investment by government since at least 2009, the year in which the Methamphetamine Action Plan was launched,⁴⁰ these efforts have not had a substantial impact on the prevalence of methamphetamine in Aotearoa New Zealand.

The New Zealand Health survey, while methodologically robust, may somewhat under-report methamphetamine use. It interviews people in households, and may miss those who are more transitory, or who are not often at home. People in prison are also excluded. Although respondents enter their responses about drug use anonymously and directly into a tablet computer, some people may not feel comfortable recording their illegal drug use as part of a government survey.

One estimate we have for lifetime use and consumption patterns comes from the Christchurch Health and Development Study, which follows a cohort of people born in Christchurch in 1977. From age 18–35, 28% of study participants reported using methamphetamine at least once; 12% had used the drug but never more than 1–2 times per year; 11% used the drug more frequently than the previous group but never more than monthly; and the remaining 5% of study participants had used at least weekly during at least one reporting period.⁴¹ This study covers a specific age cohort and the experience of other, particularly younger, age cohorts is likely to be different.

³⁶ González-Mariño, I., Baz-Lomba, J. A., Alygizakis, N. A., Andrés-Costa, M. J., Bade, R., Barron, L. P., ... Bodík, I. (2019). Spatio-temporal assessment of illicit drug use at large scale: Evidence from 7 years of international wastewater monitoring. *Addiction*, 115(1), 109–20.

³⁷ Ministry of Health. (2021). *Annual data explorer 2020/21*.

³⁸ The term ‘amphetamines’ in the survey includes methamphetamine. A common phrase used in the literature is ‘amphetamine-type stimulants’, which covers both amphetamines and methamphetamine.

³⁹ Ministry of Health. (2013). *Amphetamine use 2012/13: Key findings of the New Zealand Health Survey*. Ministry of Health.

⁴⁰ Department of the Prime Minister and Cabinet. (2009). *Tackling methamphetamine: An action plan*. This plan aimed to (1) reduce methamphetamine supply by controlling key manufacturing supply and equipment, and targeting the supply chain, and (2) reduce methamphetamine demand through education of the community and treatment of people with addiction problems.

⁴¹ Foulds, J. A., Boden, J. M., McKetin, R., & Newton-Howes, G. (2019). Methamphetamine use and violence: Findings from a longitudinal birth cohort. *Drug and Alcohol Dependence*, 207(107826). doi:10.1016/j.drugalcdep.2019.107826

As outlined further on in this paper, more frequent use of methamphetamine is associated with higher levels of harm. In 2006, people who frequently use methamphetamine in Aotearoa New Zealand said they had used methamphetamine for 57 days in the past six months (180 days). In 2016, this had increased to 70 days.⁴² Unfortunately, we do not have more recent data to help establish whether this upwards trend has continued since 2016. What the Christchurch data does show clearly is that the bulk of people who have used methamphetamine use it infrequently. About 11% of those who use methamphetamine will become dependent over the course of their lives.⁴³

Wastewater testing

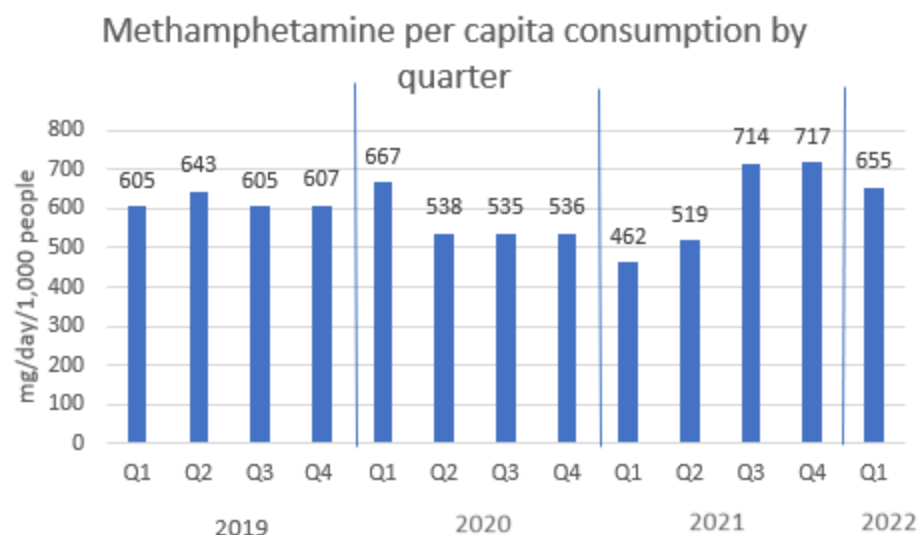
Wastewater testing is another method for estimating methamphetamine consumption. The technique gives an indication of the overall volume of methamphetamine consumed in a community. It has the advantage of not relying on people's willingness to disclose their drug usage in a survey. The disadvantage is that it doesn't tell us anything about how many individuals are using the drug, how much each individual consumes, or the harms suffered. It is also limited to areas with municipal wastewater collection. The exclusion of systems such as septic tanks or portaloos means that some demographic groups (particularly people living in rural areas, which includes many Māori) are not captured by this technique.

There are substantial variations in monthly consumption of methamphetamine, at both the local and national level. Over the three years since wastewater testing began (2019–2021), results have shown no consistent trend up or down in terms of amount consumed per capita.

Population adjusted methamphetamine consumption in Aotearoa New Zealand (monthly average of daily consumption)

⁴² Wilkins et al. (2017). Recent trends in illegal drug use in New Zealand 2006–2016.

⁴³ Anthony, J. C., Warner, L. A., & Kessler, R. C. (1994). Comparative epidemiology of dependence on tobacco, alcohol, controlled substances, and inhalants: Basic findings from the National Comorbidity Survey. *Experimental and Clinical Psychopharmacology*, 2(3), 244–68. doi:10.1037/1064-1297.2.3.244



Source: National Drug Intelligence Bureau⁴⁴

Wastewater testing provides useful insights into the geographical distribution of methamphetamine consumption. Rural towns in Northland, Bay of Plenty, and Hawkes Bay have the highest rates of methamphetamine consumption.^{45,46} Given the high prevalence in rural towns and the lack of sampling of properties not on wastewater networks, there are almost certainly also high rates of use in rural areas around these towns. As one example of how some communities may be hit particularly hard, in Kawerau, after an operation in 2019, police identified 600 people out of a population of 6000 using methamphetamine.⁴⁷ This poses a particular challenge as treatment and addiction services are generally concentrated in Aotearoa New Zealand's cities.

Methamphetamine consumption rates are also generally much lower in the South Island, which probably reflects the fact that most methamphetamine is produced or imported through the upper North Island and then distributed over land (and ferry) to the South Island.⁴⁸

⁴⁴ National Drug Intelligence Bureau (2022). Obtained 19 June 2022 under the Official Information Act 1982.

⁴⁵ Savage, J. (2021). *NZ's meth crisis: The rural towns bearing the brunt*. NZ Herald. <https://www.nzherald.co.nz/nz/nzs-meth-crisis-rural-towns-bearing-the-brunt-new-police-strategy-to-curb-demand/CPR6M34K2LFEJPFRVO2WL66O6Q/>

⁴⁶ Northland is the police district that has returned the highest level of per capita methamphetamine use since wastewater testing began in 2018. New population estimates now put Eastern District (which includes Hawkes Bay) well above Northland.

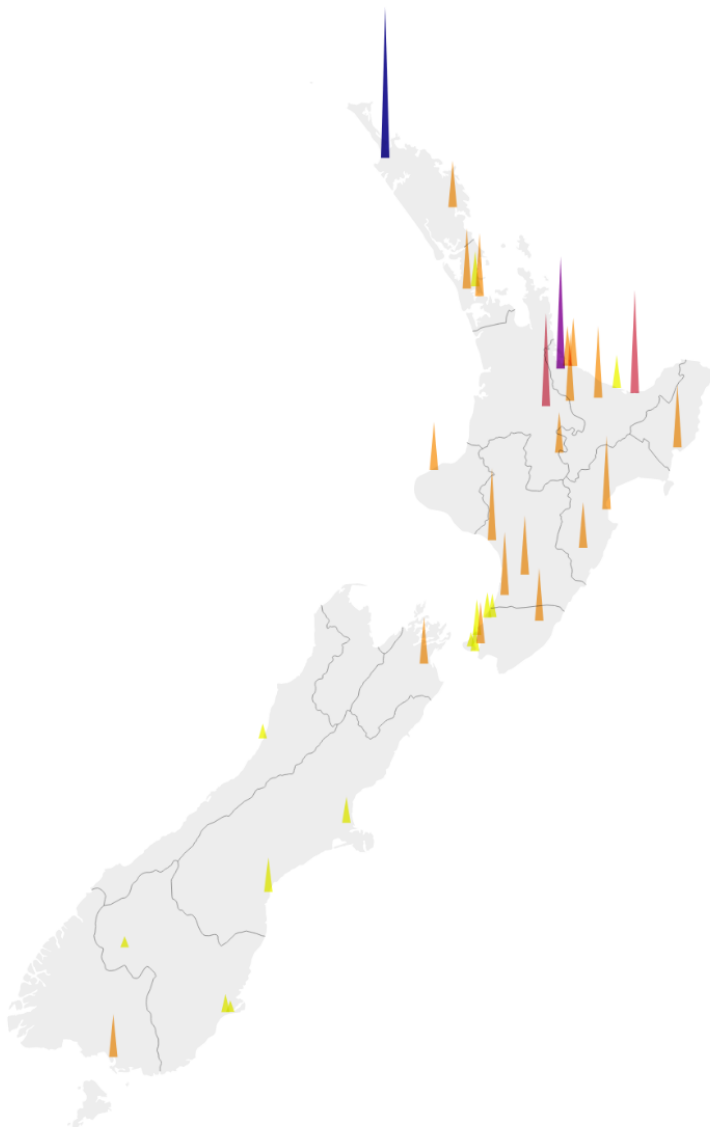
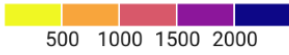
⁴⁷ Savage, J. (2019). *Fighting the demon*. NZ Herald. <https://www.nzherald.co.nz/indepth/national/new-zealands-fight-against-methamphetamine/>

⁴⁸ Savage, J. (2020). *Gangland: New Zealand's underworld of organised crime*. Harper Collins.

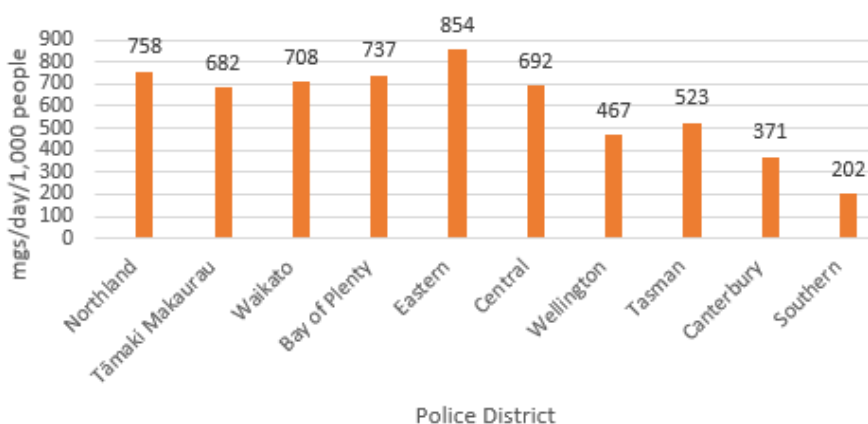
Average 2021 meth use from wastewater testing

2021 Average

Milligrams per 1,000 people
per day



Per capita methamphetamine consumption, 2019-2021 average, by Police District



Source: National Drug Intelligence Bureau⁴⁹

Summary: About 1.2% of the adult population (40,000 adults) have used methamphetamine at least once in the last year but only about 0.2% use the drug at least monthly, rates that are high compared to most European countries, but lower than Australia, the US, and Canada. Around 38% of those using methamphetamine regularly are Māori. This finding is backed up by wastewater data, which shows per capita methamphetamine use is highest in rural towns in Northland, the Bay of Plenty, and Hawkes Bay, which have high Māori populations. Per capita methamphetamine consumption varies monthly. Annual prevalence rates, as recorded in the New Zealand Health Survey, have remained steady for the past decade. About 11% of those who use methamphetamine are affected by dependence over their lifetime.

How is methamphetamine used?

Methamphetamine can be swallowed, snorted, smoked, or injected. Injecting is thought to be the most harmful because it can increase the risk of blood-borne diseases and soft tissue injuries. Smoking may be associated with respiratory issues (vapour inhalation). Snorting can lead to nasal ulcerations. Injecting and smoking also deliver drugs to the brain more quickly, resulting in rapid peak levels of methamphetamine in the bloodstream, and are thought to place people at a higher risk for dependency.⁵⁰

Smoking is thought to be the most common consumption method for people who infrequently use methamphetamine. An Australian study of people who are dependent on methamphetamine

⁴⁹ National Drug Intelligence Bureau (2022). Obtained 19 June 2022 under the Official Information Act 1982.

⁵⁰ Cunningham, J. K., Liu, L.-M., & Muramoto, M. (2008). Methamphetamine suppression and route of administration: Precursor regulation impacts on snorting, smoking, swallowing and injecting. *Addiction*, 103(7), 1174–86. doi:10.1111/j.1360-0443.2008.02208.x

found three groups: those who only smoked the drug (18%), those who only injected the drug (56%), and those who did both (26%). They found that:

...concurrently smoking and injecting methamphetamine may be associated with more frequent methamphetamine use and more frequent injecting drug use than either smoking or injecting alone. This pattern of concurrent smoking and injecting of methamphetamine was also associated with a higher likelihood of violent behaviour and involvement in crime than only injecting the drug.⁵¹

They also found that:

...smoking methamphetamine was associated with taking methamphetamine on more occasions per day than injecting methamphetamine. This is because when people smoke methamphetamine, they smoke a small quantity of the drug on a single occasion and allow the remaining methamphetamine to cool so it can be smoked later, resulting in smaller doses being taken at more regular intervals than when compared to injecting (where a full dose is usually injected on a single occasion). Therefore, the greater number of use occasions per day amongst people who smoked methamphetamine does not necessarily equate to a greater quantity of the drug being consumed. These different use patterns suggest that smoking and injecting methamphetamine may be complementary.⁵²

Although the half-life of methamphetamine is reasonably long (~12 hours), rapid development of tolerance results in a reduction in the perceived drug effect, or 'high'. Smoking the drug thereafter may reinstate the drug high, as it provides a similarly rapid and intense drug effect to injection, allowing a person to 'top-up' their high at regular intervals after they inject the drug.⁵³

The researchers saw:

...little evidence of people transitioning from injecting methamphetamine to the exclusive use of non-injecting routes of administration. This is consistent with previous evidence and suggests that once injecting stimulant use is established, it is likely to remain the preferred route of administration.

They did find some suggestions in the data that some people transition from smoking to injecting use.⁵⁴

In Aotearoa New Zealand, injecting methamphetamine appears to be becoming more common among people who frequently use methamphetamine. In 2006, 28% had injected

⁵¹ McKetin, R., Sutherland, R., Peacock, A., Farrell, M. and Degenhardt, L. (2021). Patterns of smoking and injecting methamphetamine and their association with health and social outcomes. *Drug and Alcohol Review*, 40(7), 1256–65. <https://doi.org/10.1111/dar.13364>, page 1261.

⁵² McKetin et al. (2021). Patterns of smoking and injecting methamphetamine, page 1262.

⁵³ McKetin et al. (2021). Patterns of smoking and injecting methamphetamine, page 1262.

⁵⁴ McKetin et al. (2021). Patterns of smoking and injecting methamphetamine, page 1262.

methamphetamine in the past six months and this increased to 52% in 2016.⁵⁵ Of clients who visited needle exchanges in Aotearoa New Zealand between July 2020 and September 2021, 29% identified methamphetamine as their most commonly injected drug, making it the most-injected drug ahead of methadone (24%) and methylphenidate (17%). Māori clients of needle exchanges were more likely to use methamphetamine and less likely to use methadone than other ethnicities. Younger clients were even more likely to inject methamphetamine. As one example, 68% of Māori clients aged 16–24 injected methamphetamine, and only 30% of those aged 50 and over did so.⁵⁶

Modes of administration are strongly determined by the specific culture and norms that develop within a community of people who use drugs.

Polydrug use is very common with methamphetamine:

People who use stimulants typically use a range of drug types. Cannabis use is very common, as is the use of other stimulants (eg, ecstasy), particularly in recreational settings. Heavy consumption of alcohol is common, which when used with stimulants increases the risk of cardiotoxicity and violent behaviour. The combined use of stimulants and opioids places pressure on the cardiovascular and respiratory systems, and central nervous system, with unpredictable health outcomes.⁵⁷

People who frequently use methamphetamine in Aotearoa New Zealand consume a range of other drugs, both prescribed and illicit. It is notable that 27% report using anti-depressants.⁵⁸ The drugs they most commonly used in the previous six months, other than methamphetamine, were tobacco (89%), cannabis (81%), alcohol (77%), codeine (41%), tramadol (33%), methylphenidate (Ritalin) (33%), benzodiazepines (31%), ecstasy (31%), amphetamines (30%), GHB (27%), synthetic cannabinoids (26%), and methadone (17%).⁵⁹ The combination of methamphetamine with tramadol is very dangerous. Most of the other combinations require caution, as they create elevated health risks.⁶⁰

Summary: Methamphetamine is most commonly smoked or injected. Smoking is more common among people who use methamphetamine infrequently, but injecting appears to be becoming more common among those who use it frequently. Some people both smoke and inject. People who smoke and use methamphetamine frequently tend to use multiple times a day, but with

⁵⁵ Wilkins et al. (2017). Recent trends in illegal drug use in New Zealand 2006–2016.

⁵⁶ Yu, S. et al. (2021). *Quarterly drug use report*. New Zealand Needle Exchange Programme.

⁵⁷ Farrell, M. et al. (2019). Responding to global stimulant use: Challenges and opportunities. *Lancet*, 394(10209), 1652–67, page 1655.

⁵⁸ Wilkins et al. (2017). Recent trends in illegal drug use in New Zealand 2006–2016, page 24.

⁵⁹ Wilkins et al. (2017). Recent trends in illegal drug use in New Zealand 2006–2016, page 24.

⁶⁰ Know Your Stuff NZ. (2018). Leave the mixing to the DJ! <https://knowyourstuff.nz/2018/02/16/more-drugs-do-not-mean-more-fun/>

smaller quantities each time, whereas someone who injects is likely to inject a larger dose, but use less frequently over the course of a day. Of clients of needle exchanges, Māori aged 16–24 are the most likely cohort to inject methamphetamine over other drugs.

How is methamphetamine currently regulated in Aotearoa New Zealand?

Methamphetamine is currently regulated under the Misuse of Drugs Act 1975 (MoDA). MoDA doesn't have a purpose statement but it seeks to control the use of drugs with the potential to cause dependency or harm. This is done by prohibiting most psychoactive drugs, with very narrow exemptions for scientific and medical purposes. Methamphetamine is classified as a Class A drug under MoDA. Class A drugs attract a maximum lifetime prison sentence for import, supply, or manufacture, and six months' imprisonment for possession. Possession of 5 grams or more is considered supply rather than possession.

Under the current law, the police must only bring a prosecution for a possession offence "if it is required in the public interest". Police must determine whether a health-centred or therapeutic approach would be more beneficial to the public interest than a prosecution.

Whether a person is prosecuted for methamphetamine possession will depend on a range of issues, including whether they have a previous conviction, whether they have committed other offences on the same day, and whether they are willing to consider getting treatment. In practice, discretion is also applied differently by police according to drug type – a person caught with methamphetamine is several times more likely to be prosecuted than a person caught with cannabis.⁶¹

The importation of pseudoephedrine or ephedrine (precursors for manufacture) attracts jail sentences of up to eight years.

In 2021, half (51%) of all drugs charges in Aotearoa New Zealand were for methamphetamine offences.⁶² The New Zealand Drug Foundation estimates the government currently spends more than four times as much on drug law enforcement (for all illicit substances) as it does on treatment and other support for substance use disorders.⁶³ The Foundation estimates enforcement expenditure by police, the Department of Corrections, the Ministry of Justice, and customs at between \$365 and \$410 million per annum, compared to around \$93 million on services to treat drug addiction (not including alcohol).⁶⁴

⁶¹ Mercier & Jarrett. (2022). *State of the nation 2022*.

⁶² Ministry of Justice (2021). *Drug offences*. <https://www.justice.govt.nz/assets/Documents/Publications/4gj2oyl-Drug-offences-dec2021-v1.0.xlsx>

⁶³ NZ Drug Foundation. (2022). Budget 2022 a chance to move away from failed approaches to drugs. Media Release.

⁶⁴ Personal communication with NZ Drug Foundation, July 2022.

Can methamphetamine use disorders be treated effectively?

Psychosocial, behavioural, and psychological approaches

Treatment for methamphetamine use disorder can be effective. The Australian Patient Pathways study found 66% of clients attending alcohol and other drug services in Victoria and Western Australia who had methamphetamine as their primary drug of concern showed reliable reductions in use of, or abstinence from, methamphetamine as a result of treatment one year after treatment began.⁶⁵

A systematic review of the literature by AshaRani et al. (2020) looked at 44 studies and found that behavioural interventions, including cognitive behavioural therapy, contingency management, exercise, residential rehabilitation-based therapies, repetitive transcranial magnetic stimulation, and the matrix model⁶⁶ were effective in promoting abstinence and reducing methamphetamine use or craving in the participants.⁶⁷ While contingency management interventions showed the strongest evidence favouring the outcomes assessed, tailored cognitive behavioural therapy alone or together with contingency management was also effective.

Many studies compare interventions to ‘treatment as usual’, rather than to ‘no treatment’. Further, caution is required in extrapolating overseas treatment findings to Aotearoa New Zealand because standards of care differ and Aotearoa New Zealand has a professionalised addiction practitioner workforce, which many countries do not. Because ‘treatment as usual’ looks quite different in Aotearoa New Zealand than elsewhere, this makes it harder to assess different treatment options.

A major weakness of most treatment studies is that they focus on abstinence as the outcome goal, rather than harm reduction. As outlined later in this paper, most harms associated with methamphetamine use have a dose-response relationship. The more frequently methamphetamine is used, and the quantities used, the more significant the harm. For this reason, the population-level goals of treatment should include reduced consumption as a supplementary measure alongside abstinence. Improvements in the mental and physical health of the person, as well as their wellbeing (relationships with others, employment, housing) should also be relevant to a treatment’s ‘success’. Abstinence may be an appropriate goal for an individual, but the evidence suggests it is much harder to achieve than a reduction in

⁶⁵ Manning, V. et al. (2017). Substance use outcomes following treatment: Findings from the Australian Patient Pathways Study. *Australian and New Zealand Journal of Psychiatry*, 51(2), 177–89.

⁶⁶ The ‘matrix model’ provides a framework for engaging people with stimulant use disorder in treatment. Treatment includes elements of relapse prevention, individual sessions, family and group therapies, social support groups, drug education, and self-help participation.

⁶⁷ AshaRani, P. V. et al. (2020). Non-pharmacological interventions for methamphetamine use disorder: A systematic review. *Drug Alcohol Dependence*, 212(108060). <https://pubmed.ncbi.nlm.nih.gov/32445927/>

consumption. Total abstinence should therefore not be the only goal or measure of success for treatment interventions.

A global review by Farrell et al. did not come to such positive conclusions about treatment, concluding that psychosocial interventions generally have a weak overall effect on treating methamphetamine dependence with the intervention (measured by abstinence), compared to 'treatment as usual'.⁶⁸

As Farrell et al. note, cognitive behavioural therapy is commonly used to help people reduce their stimulant use, but Cochrane reviews conclude it is no more effective at inducing abstinence than treatment as usual. Farrell et al. report that:

...the same is true of other forms of counselling and interpersonal therapies, motivational interviewing, screening and brief intervention, and relapse prevention. Other psychosocial interventions that have been evaluated (meditation, 12-step, supportive psychodynamic expressive therapy, and therapeutic communities) have consistently produced abstinence outcomes that do not differ substantially from 'usual care'.⁶⁹

Considerable evidence shows that aerobic exercise is beneficial for people being treated for substance-use disorders. A useful adjunct to standard treatment modalities may be group-based aerobic exercise. A randomised controlled trial of aerobics suggests improvements in craving control, as well as cognitive function, and physical fitness in men with methamphetamine use disorders.⁷⁰ Unfortunately, we haven't found studies on the overall impacts of exercise on longer-term rehabilitation outcomes. Nonetheless, the improvements in functioning suggest this could be a useful addition to conventional treatment programmes.

Contingency management

Meta-analyses indicate that contingency management in particular leads to a statistically significant reduction in stimulant use. Contingency management⁷¹ involves providing non-financial or financial incentives in exchange for evidence (such as urine tests with no trace of methamphetamine) of abstinence from stimulant use. As Farrell et al. note, however,

⁶⁸ Farrell et al. (2019). Responding to global stimulant use. Treatment as usual (TAU) is a non-specific therapy including case management and any unstructured, non-manualised, psychosocial intervention.

⁶⁹ Farrell et al. (2019). Responding to global stimulant use, page 1658.

⁷⁰ Zhu, T. et al. (2021). Effects of a group-based aerobic exercise program on the cognitive functions and emotions of substance use disorder patients: A randomized controlled trial. *International Journal of Mental Health and Addiction*. <https://doi.org/10.1007/s11469-021-00518-x>

⁷¹ Contingency management (CM) is a behavioural intervention that emphasises the positive reinforcement of healthy behaviours, whereby people who use stimulants are rewarded when they provide drug-free urine samples. The reward for abstinence varies between trials. In some instances, cash is given to participants but most trials use vouchers of different values to minimise the risk of patients spending cash on drugs. Other studies use a lottery system whereby patients draw a token that is worth prizes of escalating values. The value of prizes is relatively low: participants can't earn more than about \$500 over the course of a 12-week trial.

“contingency management has not been applied in routine care because of substantial opposition from service planners, clinicians, and communities to contingency management.”⁷²

Some of this opposition may stem from the fact that, in many trials, the rewards are an entry into a prize lottery. A lottery system is a form of gambling and may be more effective than a consistent reward because it engages similar cognitive pathways as a substance-use disorder. Whether it is appropriate to engage these pathways during a treatment programme is a separate and important question. Contingency management is also a form of extrinsic motivation, which may be detrimental to intrinsic motivation, particularly when the extrinsic motivation is no longer available.

Detoxification programmes

An Australian study comparing residential rehabilitation programmes and detoxification programmes with a quasi-control group – who had received no treatment of any kind in the month prior to entering the study – showed that detoxification on its own didn’t reduce methamphetamine use relative to not receiving any treatment. The authors reported their findings were consistent with previous research, which suggested that detoxification should not be provided as a stand-alone service. Detoxification programmes in the study typically involved brief (for example, one week) in-patient stays with medical support to manage withdrawal symptoms. Residential rehabilitation typically involved longer stays (such as several weeks to months) in a drug-free residential setting that provided an intensive programme of integrated services and therapeutic activities.

The study also found a reduction in the frequency of methamphetamine use over the three-year follow-up period in all three groups. When the residential group was compared with the quasi-control and detoxification groups combined (n = 213), unadjusted effects for residential rehabilitation remained significant at all follow-ups. For every 100 residential rehabilitation clients, 33 were continuously abstinent at three months, although this dropped to 14 after a year, and dropped further to only six after three years.⁷³

Reducing harm rather than requiring abstinence

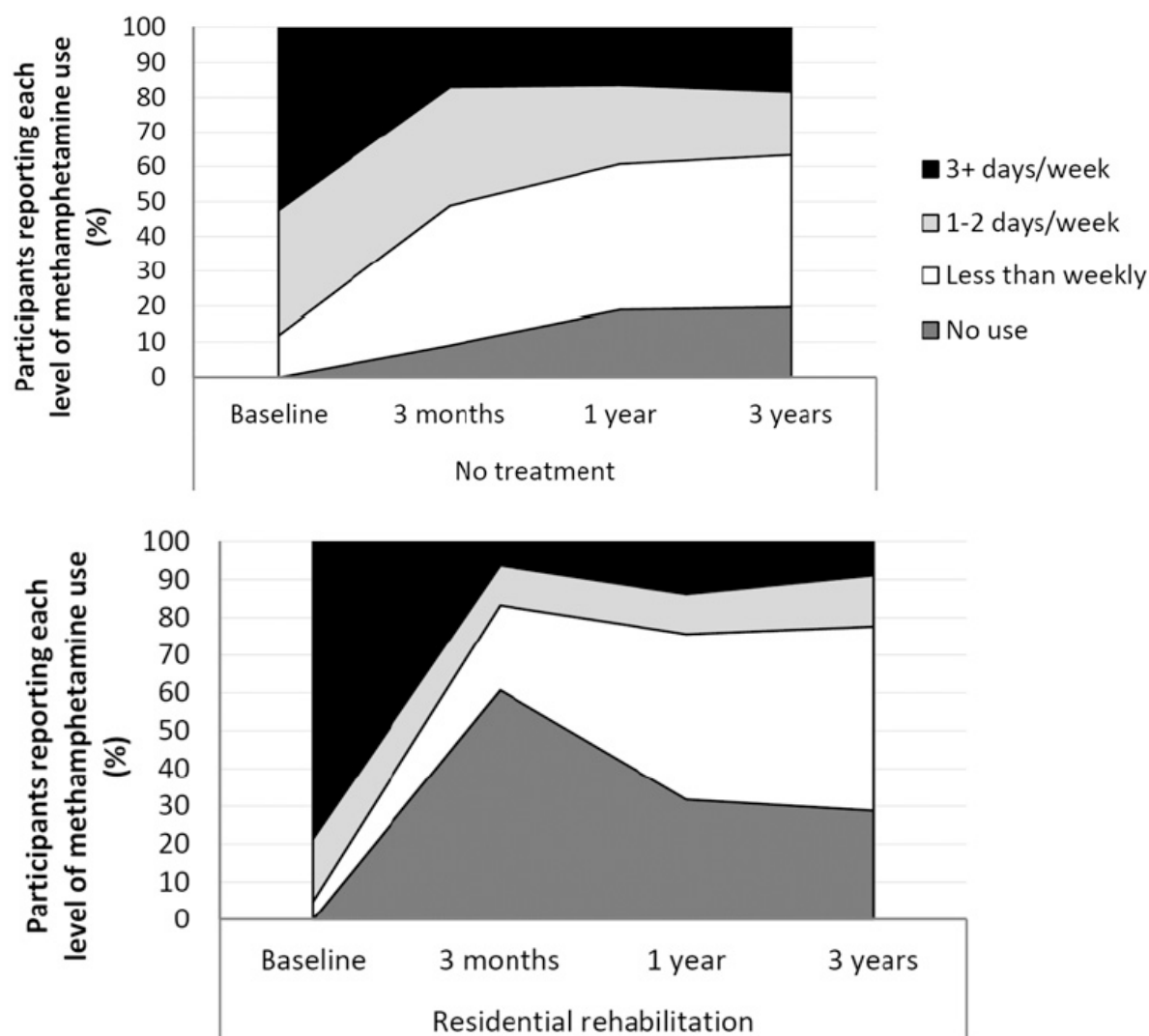
If we re-evaluate existing studies from the point of view of reducing use, rather than achieving full abstinence, we see much better outcomes from psychosocial interventions. Even in the absence of interventions, of those people who use methamphetamine at least weekly, about half will be using methamphetamine less than weekly 1–3 years later.⁷⁴ By comparison, a cohort that receives residential rehabilitation treatment will see a much greater reduction in their use of

⁷² Farrell et al. (2019). Responding to global stimulant use.

⁷³ McKetin, R. et al. (2012). Evaluating the impact of community-based treatment options on methamphetamine use: Findings from the Methamphetamine Treatment Evaluation Study (MATES). *Addiction*, 107(11), 1998–2008. doi:10.1111/j.1360-0443.2012.03933.x

⁷⁴ McKetin et al. (2012). Evaluating the impact of community-based treatment options on methamphetamine use.

methamphetamine at three years: only 10% will still be using methamphetamine more than three times a week, compared to just under 20% of the 'no-intervention' group.



Frequency of methamphetamine use reported at each follow-up by group⁷⁵

Most importantly, residential rehabilitation improves a wide range of important outcomes. In the Australian MATES study, participants in residential rehabilitation in Brisbane saw significant improvements in various mental health outcomes after treatment (these were measured at 12 months). These improvements included:⁷⁶

- decrease in prevalence of psychotic symptoms (19% vs 45%)

⁷⁵ McKetin et al. (2012). Evaluating the impact of community-based treatment options on methamphetamine use, page 7.

⁷⁶ Cogger, S., McKetin, R., Ross, J., & Najman, J. (2008). *Methamphetamine Treatment Evaluation Study (MATES): Findings from the Brisbane site*. National Drug and Alcohol Research Centre.

- decrease in prevalence of hostility (41% vs 71%)
- decrease in participation in any crime (39% vs 68%)
- decrease in mental health impairment (35% vs 88%)
- decrease in psychological distress (38% vs 63%)
- decrease in social phobia (9% vs 31%)
- decrease in panic disorder (20% vs 32%).

An evaluation of a residential treatment programme in Aotearoa New Zealand had similar findings of reduced substance use and improved mental and physical health, as well as reductions in inter-personal conflict and increased engagement in work.⁷⁷

An Australian study of alcohol and drug treatment programmes found that:

...just over half of the participants (52.0%) showed reliable reductions in use of, or abstinence from, their primary drug of concern. This was highest among clients who reported meth/amphetamine (66%) as their primary drug of concern and lowest among those who reported alcohol (47%), with 31% achieving abstinence from all drugs of concern.⁷⁸

This suggests that methamphetamine is easier to quit than alcohol.⁷⁹

A consistent theme in many studies is the difficulty of maintaining behaviour changes over long periods of time. Many study participants need to re-engage occasionally with treatment in order to maintain their reduced consumption. After-care may not be as intensive as an initial intervention but needs to be available.

Kaupapa Māori approaches

Kaupapa Māori (Māori approach/practice) addiction treatment programmes are designed specifically for Māori, and take a holistic approach to recovery: focusing on collective, whānau-based outcomes and including cultural approaches within treatment. They have long been recognised as essential to achieving positive Māori health outcomes, especially given Māori have disproportionately high use rates of methamphetamine compared to other ethnicities.⁸⁰ While kaupapa Māori addiction services are available in Aotearoa New Zealand, they are underfunded and access is heavily dependent on where a person lives.⁸¹

⁷⁷ King, J., Stevenson, B., Moss, M., & Garden, E. (2019). *Review of outcomes for clients of Higher Ground*. Report prepared for Higher Ground Drug Rehabilitation Trust. Julian King & Associates Limited.

⁷⁸ Manning et al. (2017). Substance use outcomes following treatment.

⁷⁹ Manning et al. (2017). Substance use outcomes following treatment.

⁸⁰ Wirihana, R. (2008). Utilising matauranga Maori to improve the social functioning of tangata whaiora in Maori mental health services. In Levy, M., Nikora, L. W., Masters-Awatere, B., Rua, M., & Waitoki, W. (Eds). *Claiming Spaces: Proceedings of the 2007 National Maori and Pacific Psychologies Symposium, 23–24 November 2007* (pp. 103–104). Māori and Psychology Research Unit, University of Waikato.

⁸¹ Mercier & Jarrett. (2022). *State of the nation 2022*.

Kaupapa Māori services often utilise the model 'Te Whare Tapa Whā', which uses the analogy of a whare (house), looking at the four walls as the key elements of hauora (health): taha tinana (physical health); taha wairua (spiritual health); taha whānau (family health) and taha hinengaro (mental/emotional health).⁸²

Kaupapa Māori approaches to treating mental health and addiction issues often include cultural activities such as kapa haka, and learning te reo (Māori language), tikanga (practices and customs), and whakapapa (genealogy). They are often focused around the marae, and usually work with the whānau rather than just the individual.⁸³

While there is not a large body of published data on the success of these approaches, there is widespread agreement that they work and are essential. The lack of academic research is likely to be a reflection of the difficulty in measuring the success of Indigenous interventions using Western research methodologies and outcomes,⁸⁴ and an overall lack of investment into kaupapa Māori research.

Another under-studied area is the efficacy of non-residential treatment approaches compared to residential approaches. The focus on residential approaches can create barriers to accessing support, particularly for people in lower socioeconomic groups or for Māori who have to leave whānau support systems to engage in residential treatment.

Pharmaceutical approaches

Agonist-based therapies are treatments using a drug with similar pharmacological and behavioural effects to the drug being used. They generally relieve cravings and other symptoms of withdrawal. They are commonly used for the treatment of opioid (methadone or buprenorphine/naloxone) and tobacco (nicotine) use disorders.

A number of clinical trials for the treatment of stimulant (cocaine, amphetamine, and methamphetamine) use disorders have been undertaken using various psychostimulants (modafinil, methylphenidate, and amphetamines). Two trials in a 2020 meta-analysis used prescription amphetamines specifically to treat methamphetamine use disorders, and, while the findings were partially positive, none assessed sustained abstinence.

Another study conducted in patients with amphetamine use disorder and ADHD found that a high dose of extended release methylphenidate reduced use of amphetamine as compared to a

⁸² Durie, M. (2019). *Sir Mason Durie on the foundations of wellbeing*. Radio NZ.

<https://www.rnz.co.nz/national/programmes/afternoons/audio/2018714471/sir-mason-durie-on-the-foundations-of-wellbeing>

⁸³ For example, Kirimatao Paipa. (2021). *Te Puarangi Evaluation Report*. Kia Maia Limited.

⁸⁴ 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), 129–36. doi:10.1177/1177180120919166

placebo. This result indicates that trials with high doses and extended release formulation of prescription psychostimulants could promote sustained abstinence from methamphetamine.⁸⁵

These agonist trials often suffer from being of a relatively short duration and using low doses. None have been trialled in a similar way to methadone as a maintenance therapy. They also often have not assessed reduced use or reduced cravings as a goal rather than abstinence. Like many rehabilitation studies, there is also often no assessment of the outcomes on trial participants' lives that are important to them, such as being able to hold down a job. Agonist-based therapies are discussed further below in a section proposing a large-scale trial of stimulant substitution treatment.

For non-agonist pharmaceutical treatments, recent trials of a combination of naltrexone⁸⁶ and bupropion⁸⁷ found that a small number of trial participants (about 11%) were able to abstain from methamphetamine use for 12 weeks. The effect was small, but better than the placebo.⁸⁸

Summary: About 11% of those who use methamphetamine are affected by dependence over their lifetime. A number of different approaches are offered in different parts of the world with varying efficacy. Most focus on abstinence as a goal. Psychosocial interventions work both to help achieve abstinence, but also to reduce use. Reducing harmful use (as opposed to stopping use outright) is a useful goal, given the harms caused by methamphetamine (including health, social, and cultural harms) have a dose-response relationship. Residential rehabilitation programmes (and possibly other cultural and psychosocial interventions) also reduce drug use and improve mental and physical health. There is a growing body of practice-based evidence that kaupapa Māori approaches can provide an effective role in reducing methamphetamine use. Agonist therapies (pharmaceutical drugs with similar effects to the abused drug) are under-researched but may potentially allow some users to attain or maintain abstinence.

Treatment and support for those who use methamphetamine

- Stepped increase in treatment sector funding to meet demand and eliminate waitlists.
- Implement findings of government inquiry into mental health and addiction. The report highlighted the need for increased investment in addiction services and the importance of providing interventions earlier – well before an individual starts to experience serious problems. The report also recommended replacing criminal sanctions for the possession of controlled drugs for personal use with civil responses.⁸⁹

⁸⁵ Tardelli et al. (2020). Prescription psychostimulants for the treatment of stimulant use disorder.

⁸⁶ A drug used to treat alcoholism and opiate withdrawal.

⁸⁷ An atypical antidepressant.

⁸⁸ Trivedi, M. H. et al. (2021). Bupropion and naltrexone in methamphetamine use disorder. *New England Journal of Medicine*, 384,140–53.

⁸⁹ Government Inquiry into Mental Health and Addiction. (2018). *He Ara Oranga*.

- Ensure services are available in the areas with highest demand, such as small towns in the Bay of Plenty, Northland, and Hawkes Bay.
- Provide culturally appropriate support and programmes for Māori. A kaupapa Māori approach is essential in places with a large Māori population. The Te Ara Oranga evaluators noted the programme there could be improved by the addition of conjoint family therapy or a properly co-designed kaupapa Māori approach that involves whānau (or iwi-derived surrogates for whānau). This recommendation implies full equal partnership with iwi Māori and other appropriate Māori organisations at a local level. Kaupapa Māori approaches should be accessible in areas where they are most needed. One example is the need to expand the availability of home-based, community based,⁹⁰ and residential treatment programmes across the country.
- Provide more low-barrier treatment services, such as at-home detox and treatment options that do not require abstinence as a condition of entry.
- Invest in workforce development for addiction treatment and harm reduction, particularly for kaupapa Māori approaches. Building the workforce will require long-term investment and focus. Ensuring Māori lead the development and implementation of this process is absolutely essential.
- Expand the availability of peer support in support services, harm reduction, and addiction treatment services and throughout the whole health-care system. As just one example, placing peer support workers in emergency departments in Northland as part of the Te Ara Oranga programme broke down stigma and led to positive outcomes in the way doctors work with patients who use methamphetamine.⁹¹
- Trial contingency management in abstinence-based methamphetamine addiction treatment services, alongside other existing modalities.
- Trial the expansion of exercise-based treatment or support groups, alongside other treatment modalities.
- Provide counselling and support for families affected by methamphetamine use. This should include expanding pregnancy and parenting services that work to address the additional challenges and stigma parents who use methamphetamine face, and can help them reduce the impact on their children.
- Provide ongoing after-care support and follow up for people who have undergone treatment for methamphetamine addiction. This should last a few years after they 'complete' treatment.
- Develop training for health providers to reduce stigmatisation and improve the care offered to people who use methamphetamine. Stigma is a significant barrier to alcohol and other drug (AOD) addiction recovery and people seeking help.⁹² This may be one of

⁹⁰ Short cognitive behavioural therapy-based programmes can be effective in reducing amphetamine usage and improving other health outcomes. See Baker, A. et al. (2005). Brief cognitive behavioural interventions for regular amphetamine users: A step in the right direction. *Addiction*, 100(3), 367–78. doi:10.1111/j.1360-0443.2005.01002.x

⁹¹ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*.

⁹² Jowett, R; Dale, M and Cooper, L. (2021). "Mitigating barriers to addiction recovery in Aotearoa New Zealand: A lived experience perspective". *Aotearoa NZ Social Work*, Vol 33, Number 2, page 47

the most stigmatised groups in society, making it very hard for someone to come forward for help.

- Develop better integrated services for people who use methamphetamine, such as pathways into education and work.
- Improve pathways into diagnosis and well-managed treatment for those who suffer from ADHD in Aotearoa New Zealand, and investigate further the link between ADHD and methamphetamine use in the Aotearoa New Zealand context. ADHD is a risk factor for methamphetamine and other stimulant use, especially when undiagnosed and untreated. It is under-diagnosed in Aotearoa New Zealand.⁹³ People struggle to get a diagnosis and may wait many months to access one of the few experts who can diagnose the condition. Once diagnosed, a patient must visit a specialist every two years to be allowed to continue to receive their prescription via their doctor. This leads some people to treat their symptoms with illicit methamphetamine.⁹⁴ Improving pathways into diagnosis and well-managed treatment (including psychosocial responses) for those who suffer from ADHD could reduce the number of people who develop harmful use patterns. This is particularly important for under-treated groups.⁹⁵

What are the negative impacts of methamphetamine supply and use?⁹⁶

Abstinence is worth reconsidering as the only worthwhile goal in treatment. For some, it is extremely difficult to achieve. The fact that most treatment is so focused on abstinence may make it harder for people to seek help. A pragmatic parallel approach would be to focus on reducing harm to the individual and society from drug use, with a greater focus on achieving outcomes that are more meaningful to the individual, such as reduced distress, and improved health, housing, and social engagement. Some will choose abstinence and others may prefer to focus on harm reduction, or other outcomes that also bring value. Another important approach to reducing harm is preventing people from becoming dependent in the first place. But before seeking to reduce harms, we must first understand the nature of the harms from a supply chain perspective.

In assessing the harm to individuals and communities from methamphetamine (or any drug), governments have tended to look at factors such as the number of people using the drug, the quantity they consume, the harms of that consumption, how much they spend on the drug, and how they buy and consume the drug. To better understand the harms from methamphetamine, we have set out a simplified version of the supply chain structure and attempted to identify

⁹³ ADHD New Zealand. (n.d.). Welcome to ADHD New Zealand. <https://www.adhd.org.nz/>

⁹⁴ Personal communication with ADHD New Zealand, June 2022.

⁹⁵ D'Souza, S. (2019). Trends in the dispensing of ADHD medication to New Zealand youth. Presentation to COMPASS research colloquium. <https://cdn.auckland.ac.nz/assets/auckland/arts/our-research/research-institutes-centres-groups/compass/annual-research-colloquia/2019-colloquium/compasscolloq2019-8-dsouza-adhd.pdf>

⁹⁶ The framework and much of the analysis in this section draws on and adapts MacCoun & Reuter. (2001). *Drug war heresies*.

potential harms associated with each part of the supply chain. These harms fall on different groups: the person who uses, dealers, family, whānau, friends, communities, employers, and society at large.

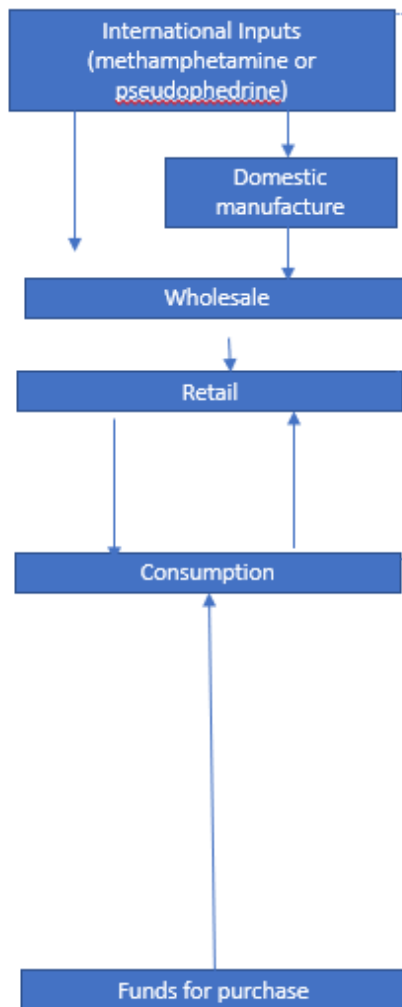
It is important to note this is not intended to be a list of harms that impact on all people who use methamphetamine. The majority who use methamphetamine will never experience addiction, violence, or road accidents as a result of their use. Instead, the model attempts to list as many as possible of the wide range of harms that are perpetuated and heightened in society through the use of methamphetamine. Some of these harms are caused by the use of methamphetamine, and some are caused by the existing law, illicit business models, stigma, and fear that are associated with the substance. It is also worth comparing this list with some of the harms caused by alcohol use in Aotearoa New Zealand – many of the consumption-related harms are very similar, whereas those that relate to the supply chain are quite different due to methamphetamine's illegal status.

While we can identify harms, many, or even most, of these cannot be accurately quantified or costed, often due to a lack of data.⁹⁷ This paper provides a high-level overview and mapping of harms but it is by no means exhaustive. Further work is needed to better understand the nature and magnitude of these harms.

⁹⁷ Though note that some of the harms have been costed in New Zealand's most recent drug harm index: McFadden, M., Bellamore, L., & MacDonald, B. (2022). *The New Zealand Illicit Drug Harm Index 2020: Version 1.1*. Ministry of Health.

A simplification of the current NZ methamphetamine market

The supply chain



Potential harms

- Connection to international cartels
- Portion of violence and harms in other countries due to manufacture and trafficking

- Environmental impacts
- Health and safety effects from occupational exposure to manufacturing process

- Funds expansion into other illicit markets

- Indebtedness
- Violence
- Untaxed sector of economy

- Addiction: physical and mental impacts and suffering
- Communicable disease transmission and other injuries caused by method of use, or by increased sexual urges
- Violence – perpetrator and victim
- Family violence
- Neonatal impacts
- Health system costs
- Difficulty sustaining employment
- Broken relationships and suffering of others
- Family breakdown and abuse or neglect of children
- Road accidents
- Community fear
- Unnecessary evictions and remediation of houses due to moral panic

- Economic impacts on the individual
- Criminal activity or prostitution to fund purchases

The legal model

Legal framework and enforcement

- Prevention of quality and safety control
- Inhibits voluntary seeking of treatment
- Restrictions on medical uses of meth and related drugs
- Costs of policing, courts and jails
- Violence, firearms and intimidation associated with an illicit market
- Risks of corruption
- Expansion into other illicit markets
- Loss of tax revenue
- Coercion and control of those in the supply chain

Harms from the supply chain

Methamphetamine is either manufactured in Aotearoa New Zealand from imported precursors such as pseudoephedrine or manufactured overseas and imported as the final product. Over time, small-scale manufacture has become less common and laboratories have become more commercial and able to produce larger quantities. In the authors' view, this shift away from small-scale manufacture is likely to be the only impact from the banning of over-the-counter sales of pseudoephedrine. Imports have also increased over the past 10 years, with most imports originating in Mexico and the Golden Triangle (Myanmar, Laos, and Thailand).⁹⁸

A recent report into an innovative programme in Northland, Te Ara Oranga, took an in-depth look at how the supply chain for methamphetamine operates in Northland, concluding it causes multiple harms in the way it is set up, both in terms of pulling people into a life of crime, increasing demand by encouraging new users, and encouraging those who already use to consume more. Anecdotally, this has also been reported in many other communities across Aotearoa New Zealand.

The evaluators found no clear distinction in Northland between the people involved in supply and use:

It is convenient to sharply distinguish between those who use and those who supply, but the bifurcation is a fiction in the experience of those we talked to. The opportunity to participate in selling drugs is extended to nearly everyone as part of the operating model for the distribution of methamphetamine ... The vast majority offered the opportunity are misled into a cycle of dependency on criminality and victimisation by gangs and organised crime.⁹⁹

The evaluators emphasised the sophisticated marketing and distribution model operated for methamphetamine in Northland, where gangs exploit the vulnerabilities of communities in actions that mirror the efforts of large, well-funded corporations targeting consumers: "These actions include driving down competition (from cannabis, for example), product giveaways, multi-level marketing, deferred payment, comparative advertising, viral marketing, and targeted marketing."¹⁰⁰

The evaluators hypothesise that Northland was deliberately targeted by organised crime as the testing ground to establish a wide methamphetamine market, emphasising methamphetamine has been 'pushed' into Northland, rather than pulled in due to the other social problems that

⁹⁸ Evidence-Based Policing Centre (2021). *Methamphetamine in New Zealand: What is currently known about the harm it causes?* New Zealand Police.

⁹⁹ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 89.

¹⁰⁰ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 24.

exist in the region. They go on to point out that Northland community groups identify this model of marketing as the key destructive mechanism for their communities.

The business model (selling) is actively promoted to those who are vulnerable because they have convictions for other drug use, minor crime, or because their use of the drug itself impoverishes them. Prison is an especially fertile recruiting ground for new sellers.

One way dealers will encourage more consumption in Northland is to sell an inferior product so the customer returns within hours for more. Those who attempt to give up may be actively targeted by dealers to keep using, with freebies and discounted products. This behaviour mirrors experiences in other countries, and with other drugs. Dealers will often also allow customers to buy their drugs on credit. This can lead to substantial levels of indebtedness, which can force the customer into either working in the supply chain or committing other crimes to pay off or service their debt.¹⁰¹ This indebtedness can be an instrument of coercion or control. People on the lower rungs of the sales model can spend huge amounts of time just staying afloat, often jeopardising their families and relationships and losing everything they may have accumulated throughout their lives in the process: “They just do not look after their kids, too busy looking for meth and looking to sell. It takes up so much of their time.”¹⁰²

The illegal status of the debt within this business model means that all the normal protections and regulations of credit markets do not apply.¹⁰³ Violence and coercion is therefore used to enforce debts instead of the courts. Unfortunately, this is a pattern that is repeated in countries around the world: the supply of illicit drugs leads to an increase in violence and other types of crime because there is no legal framework to resolve disputes.¹⁰⁴

International

Methamphetamine is either manufactured in Aotearoa New Zealand from imported precursors such as pseudoephedrine or manufactured overseas and imported as methamphetamine. The demand from Aotearoa New Zealand means that a portion of the harms overseas should be added to the tally of the harm caused by methamphetamine consumption in Aotearoa New Zealand. This includes violence, corruption, and enforcement harms as well as manufacturing harms in the relevant countries.

Another harm associated with methamphetamine is the connection to international criminal networks required to obtain methamphetamine or its precursors and pre-precursors. There is a

¹⁰¹ Hari, J. (2019). *Chasing the scream*. Bloomsbury Publishing.

¹⁰² Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 84..

¹⁰³ Wilkins, C., Reilly, J., Rose, E., Roy, D., Pledger, M., & Lee, A. (2004). *The socio-economic impact of amphetamine type stimulants in New Zealand: Final report*. Centre for Social and Health Outcomes Research and Evaluation, Massey University.

¹⁰⁴ Hari. (2019). *Chasing the scream*.

risk these criminal networks could become further established in Aotearoa New Zealand and shift into other areas of criminal influence. These networks may also introduce different and more dangerous criminal operating models to local criminal networks.

Environmental

Manufacturing of methamphetamine has environmental impacts and risks from the chemicals used in the process. Illicit manufacturing will often lead to poor manufacturing practices and the dumping of chemical waste. There may be substantial contamination of the production area, depending on the production method used.¹⁰⁵ The manufacturing process, particularly when undertaken by poorly trained people, can also include a number of health and safety risks to workers, their whānau and extended families, first responders, and the public.¹⁰⁶ Manufacturing methods have improved over time, however, meaning some of the health risks from manufacturing are less concerning than they were several years ago.¹⁰⁷

Harms from consumption

Almost all the harms described below are only experienced by the small minority of people who use methamphetamine frequently and in ways that cause them difficulties. Some of these harms may not have any direct causal relationship with methamphetamine use, and could instead be mediated or moderated by other underlying factors such as poverty or underlying mental health conditions, which are also correlated with methamphetamine use disorders.

Frequent and continued use of methamphetamine can lead to a number of physical, psychological, and social harms to the person using the drug. Some of these harms are acute symptoms while others are chronic and are dependent on dose. The physical harms include abdominal cramps, shaking, high body temperature, teeth grinding, poor oral health, toxicity in the brain and liver, stroke, cardiac arrhythmia, pulmonary problems, and cardiovascular disease. Psychological harms can include substance use disorder, paranoia, hallucinations, delusions, mood disturbance and formication (tactile hallucination of insects crawling on the skin), anhedonia, dysphoric mood, fatigue, anxiety, depression, psychosis, agitation, and violent or suicidal impulses. Neurocognitive impairments include deficits in memory, attention, and language.¹⁰⁸ Some of these harms can lead to death, typically by seizures, cardiac arrhythmias

¹⁰⁵ Watanabe-Galloway, S., Ryan, S., Hansen, K., Hullsiek, B., Muli, V., & Malone, A. C. (2009). Effects of methamphetamine abuse beyond individual users. *Journal of Psychoactive Drugs*, 41(3), 241–48. doi:10.1080/02791072.2009.10400534

¹⁰⁶ Melnikova, N., Welles, W. L., Wilburn, R. E., Rice, N., Wu, J., & Stanbury, M. (2011). Hazards of illicit methamphetamine production and efforts at reduction: Data from the hazardous substances emergency events surveillance system. *Public Health Reports*, 126(Suppl 1), 116–23. doi: 10.1177/003335491112605115.

¹⁰⁷ Gluckman, P. (2018). *Methamphetamine contamination in residential properties: Exposures, risk levels, and interpretation of standards*. Office of the Prime Minister's Chief Science Advisor.

¹⁰⁸ Radfar, S. R., & Rawson, R. A. (2014). Current research on methamphetamine: Epidemiology, medical and psychiatric effects, treatment, and harm reduction efforts. *Addict Health*, 6(3–4), 146–54.

or respiratory failure. Suicidal and violent impulses can also result in injury and death.¹⁰⁹ These physical and psychological harms are borne primarily by the individuals and their whānau, and they also impose considerable costs on the health care system.

Relatively little is known about the effects of methamphetamine on adolescents, compared to adults. There is a range of impairments caused by methamphetamine in the developing brain and more research is needed in this area.¹¹⁰

Not all these symptoms are a direct result of the pharmacological impact of methamphetamine. For example, some psychotic symptoms may be a consequence of extreme sleep deprivation caused by methamphetamine.¹¹¹ There is an increased risk of psychosis in those who use methamphetamine at least weekly. Research to date has found no persistent risk of psychosis for those who stop using methamphetamine and do not have a pre-existing psychotic illness.¹¹²

Methamphetamine use can also lead to transmission of communicable diseases. Needle sharing is associated with the transmission of viruses such as HIV and hepatitis C. The effects of increased sexual arousal also lead to higher risk sexual activities and associated sexually transmitted infections.¹¹³

Vein injury is also a risk for those who inject methamphetamine, which is gradually becoming more common in Aotearoa New Zealand.¹¹⁴

Methamphetamine use increases the risks of both perpetrating and being a victim of violence. It also increases the risk of perpetrating violence against an intimate partner. Methamphetamine associated risk of violence has a dose-response relationship. Those who have used the substance at least weekly at any time from age 18–35 have substantially elevated risks of being involved in violence compared to people who used less often, or had never used.¹¹⁵

¹⁰⁹ Darke, S., Kaye, S., McKetin, R., & Duflou, J. (2008). Major physical and psychological harms of methamphetamine use. *Drug and Alcohol Review*, 27(3), 253–62. doi:10.1080/09595230801923702

¹¹⁰ Buck, J. M., & Siegel, J. A. (2015). The effects of adolescent methamphetamine exposure. *Frontiers in Neuroscience*, 9(151). doi:10.3389/fnins.2015.00151

¹¹¹ Waters, F., Chiu, V., Atkinson, A., & Blom, J. D. (2018). Severe sleep deprivation causes hallucinations and a gradual progression toward psychosis with increasing time awake. *Frontiers in Psychiatry*, 9(303). doi:10.3389/fpsyt.2018.00303

¹¹² Boden, J., Foulds, J., Newton-Howes, G., & McKetin, R. (2021). Methamphetamine use and psychotic symptoms: Findings from a New Zealand longitudinal birth cohort. *Psychological Medicine*, 1–8. doi:10.1017/S0033291721002415

¹¹³ Darke, S., Kaye, S., McKetin, R., & Duflou, J. (2008). Major physical and psychological harms of methamphetamine use.

¹¹⁴ Noller, G. et al (2021). *Harm reduction report July 2020 to June 2021*. Unpublished technical report. Needle Exchange Services Trust.

¹¹⁵ Foulds, J., Boden, J., McKetin, R., & Newton-Howes, G. (2020). Methamphetamine use and violence: Findings from a longitudinal birth cohort. *Drug and Alcohol Dependence*, 207(107826). doi: 10.1016/j.drugalcdep.2019.107826

Neonatal exposure to methamphetamine results in a range of teratogenic effects on physical growth, and social, emotional development. These include decreased height in the exposed child, though these effects have been seen more strongly in the US than in Aotearoa New Zealand, suggesting other systemic influences on maternal health may be more important. The exposure also increases emotional reactivity in young children. Heavy methamphetamine exposure was linked with poorer inhibitory control in children.¹¹⁶ These harms are borne by the children themselves as well as those around them.

In addition to the harmful effects and burden on the individuals concerned and their whānau, all the physical and psychological harms listed above create costs for the health care and welfare systems including emergency services, mental health services, temporary housing services, benefit payments, and ACC.

Chronic methamphetamine use has a significant impact on the relationships between the person who uses methamphetamine and other people. People who use methamphetamine chronically are often unable to sustain employment because of the neurocognitive impacts of their consumption.¹¹⁷ This creates harm for them as they lose a source of income and social connection.

Whānau and extended family impacts from chronic methamphetamine use

The violence associated with chronic methamphetamine use, particularly intimate partner violence, as well as other impacts of use such as impulsiveness and loss of routines, has a damaging effect on the relationship between the person who uses methamphetamine and their families and communities.¹¹⁸

Problematic methamphetamine use is associated with family breakdown and parents becoming unable to care for their children. A Grandparents Raising Grandchildren survey in 2018 found that 72% of grandparents (who were looking after grandchildren and who responded to the survey) were doing so because of the parents' drug use. In that group, 86% said methamphetamine was the drug involved.¹¹⁹

¹¹⁶ Smith, L. M. et al. (2015). Developmental and behavioral consequences of prenatal methamphetamine exposure: A review of the Infant Development, Environment, and Lifestyle (IDEAL) study. *Neurotoxicology and Teratology*, 51, 35–44. doi:10.1016/j.ntt.2015.07.006

¹¹⁷ Weber, E. et al. (2012). Neurocognitive deficits are associated with unemployment in chronic methamphetamine users. *Drug and Alcohol Dependency*, 125(1–2), 146–53. doi:10.1016/j.drugalcdep.2012.04.002

¹¹⁸ Watt, M. H. et al. (2014). The impact of methamphetamine ("tik") on a peri-urban community in Cape Town, South Africa. *International Journal of Drug Policy*, 25(2), 219–25. doi:10.1016/j.drugpo.2013.10.007

¹¹⁹ Jones, K. (2018). *Grandparents bearing the burden of more parents on meth*. Stuff. <https://www.stuff.co.nz/national/99099143/grandparents-bearing-the-burden-of-more-parents-on-meth>

Methamphetamine is frequently cited as a factor in reports of concern of suspected child maltreatment to Oranga Tamariki.¹²⁰ In other cases, responsible parents have had their children removed due to institutional responses to methamphetamine use that presume anyone who uses it is an incompetent parent.

Anecdotally, the presence of methamphetamine in hair follicle tests can result in interventions by Oranga Tamariki and the Family Court, without a full assessment of actual care or protection issues. This is a harm caused by the institutional response, rather than the drug itself. These harms are experienced by the person who uses methamphetamine, their children, whānau, and friends, and the impact can be lifelong.

Road safety

Methamphetamine also impairs driving ability and is a factor in road accidents. One South African study found that 2% of the study population had ever driven a car within three hours of consuming methamphetamine.¹²¹ In Aotearoa New Zealand, methamphetamine was found in 13% of the tested blood samples of fatally injured drivers between 2016 and 2018.¹²²

Where blood samples of drivers were taken in hospital after a road accident, stimulants, including methamphetamine, were found in 57% of those samples that contained any drug. This was second only to cannabis, which was detected in 67% of samples that contained any drug.¹²³

The impairment caused by methamphetamine is acute, so accidents may be caused by anyone driving while under the influence of the drug.

Fear and stigma

The fear of methamphetamine and its associated activities also causes harm to communities. The increased use of firearms by organised criminal groups and gangs in the community creates fear, and behaviour based on anticipation of violence. Even if ordinary community members are not the target of that violence, there is an elevated level of community awareness

¹²⁰ Oranga Tamariki. (2020). *Methamphetamine and care: What we know to date*. <https://www.orangatamariki.govt.nz/assets/Uploads/About-us/Research/Latestresearch/Methamphetamine-and-care/Methamphetamine-and-Care.pdf>

¹²¹ Malhotra, N., Starkey, N. J., & Charlton, S. G. (2017). Driving under the influence of drugs: Perceptions and attitudes of New Zealand drivers. *Accident Analysis and Prevention*, 106, 44–52.

¹²² van Lamoén, N. (2019). *Drug-involved driving has overtaken alcohol in fatal crashes: The New Zealand experience with a vexed public health and road safety problem*. Presented at the International Council on Alcohol, Drugs and Traffic Safety, Edmonton, Canada. https://t2019.org/wp-content/uploads/2019/09/Nils-van-Lamoén_New-Zealand-Experience-.pptx.pdf

¹²³ Mercier & Jarrett. (2022). *State of the nation 2022*.

and concern, especially in small towns, about collateral damage to by-standers.¹²⁴ Even though violence is the exception rather than the norm, it is still a serious and increasing problem associated with the methamphetamine and wider drug trade.¹²⁵

Media reporting

Fear of methamphetamine is partly driven by media reporting. Media organisations have a long history of unbalanced and inaccurate reporting on methamphetamine.¹²⁶ The use of words such as ‘epidemic’ and ‘crisis’ are commonly used and generate an inflated perception of the risks and scale of the problem. They also serve to stigmatise the people who use these drugs. It paints people who use methamphetamine as dangerous, violent, deviant, and aggressive: a type of folk devils.¹²⁷

Moral panic about ‘methamphetamine-contaminated’ housing

Fear of methamphetamine itself also created a moral panic in Aotearoa New Zealand around contamination of houses from its consumption.¹²⁸ There are known and serious risks from methamphetamine production sites but there is no evidence of any risk from environmental exposure to sites where methamphetamine has been previously consumed. Nevertheless, Housing New Zealand began evicting tenants for simple methamphetamine use (as opposed to manufacture) in 2013, taking a zero-tolerance approach. At least 800 tenants were evicted with their families as a result.¹²⁹

A New Zealand Standard was published in 2017¹³⁰ that supposedly determined a level at which a house was considered to be ‘contaminated’ by previous methamphetamine use. This was set at a very low level and led to further large numbers of both community housing and private tenants being evicted from their homes for consuming methamphetamine, along with significant

¹²⁴ Piper, D. (2022). *Auckland police sent to Kaikohe after shootings, worrying leaders in both places*. Stuff. <https://www.stuff.co.nz/national/crime/128775914/auckland-police-sent-to-kaikohe-after-shootings-worrying-leaders-in-both-places>

¹²⁵ For example: Jackson, B. (2022). *Southland and Otago have the highest MDMA use per capita for 2021*. Stuff. <https://www.stuff.co.nz/national/health/128788897/southland-and-otago-has-highest-mdma-use-per-capita-for-2021>

¹²⁶ Wallace, C. (2006). *Menace or moral panic? Methamphetamine and the New Zealand press* [Unpublished master’s thesis]. Auckland University of Technology. <http://orapp.aut.ac.nz/bitstream/handle/10292/215/WallaceC.pdf?sequence=2&isAllowed=y>

¹²⁷ Fitzpatrick, C. (2018). *Toxic legacy: A content analysis of New Zealand news media coverage of methamphetamine* [Unpublished master’s thesis]. University of Auckland. <https://researchspace.auckland.ac.nz/handle/2292/37295>

¹²⁸ Sanchez Lozano, C. D., Wilkins, C., & Rychert, M. (2020). Investigating the New Zealand policy response to methamphetamine-contaminated houses. *Drug Testing and Analysis*, 12, 691–703.

¹²⁹ Cooke, H (2018). *Housing NZ to compensate 800 tenants over bogus meth testing*. Stuff. <https://www.stuff.co.nz/national/politics/107225424/housing-nz-to-compensate-800-tenants-over-bogus-meth-testing>

¹³⁰ Standards NZ. (2017). NZS 8510:2017 Testing and decontamination of methamphetamine-contaminated properties. Standards New Zealand.

expenditure on unnecessary remediation of properties. While evictions of Kāinga Ora (previously Housing NZ) tenants for methamphetamine use have now stopped, people continue to be evicted from other types of rentals for methamphetamine use and charged large amounts for ‘remediation’. This is an ongoing harm caused directly by the stigma and fear surrounding methamphetamine, rather than by any evidence that traces of the substance itself can cause health impacts.

Acquisitive crime

Another harm from methamphetamine use is acquisitive crime, where people steal to fund the purchase of methamphetamine. An Aotearoa New Zealand study of arrested individuals shows a strong relationship between the level of spending on methamphetamine by an individual in the past month and the level of their earnings from acquisitive crime (property crime and drug dealing) in the past month.¹³¹ There is some debate in the literature about the direction of causation (do those earning more money from crime decide to spend their money on drugs, or do those who want to consume drugs commit crimes to fund their drug usage?).

A more in-depth Australian study led by Rebecca McKetin showed “that methamphetamine use is associated with a large increase in the likelihood of crime beyond any pre-existing risk for criminality amongst people who use the drug”:¹³²

The observed effects were substantial, with participants five times more likely to report crime during months when they were using methamphetamine compared to when they were not using the drug. Effects were also dose-related, with higher odds of criminal involvement associated with more frequent methamphetamine use.¹³³

Of the study participants who used methamphetamine for more than 16 days a month, more than half reported that they had engaged in dealing activity that month. The Australian study suggests that small-scale dealing is often undertaken by those who are seeking to fund their own methamphetamine use. This finding accords with the Te Ara Oranga evaluation in Northland, which reported that dealing to support one’s own use was not only common but built into the success of the illicit marketing model.¹³⁴

Harms from current form of regulation

¹³¹ Wilkins, C., Sweetsur, P. (2011). The association between spending on methamphetamine/amphetamine and cannabis for personal use and earnings from acquisitive crime among police detainees in New Zealand. *Addiction*, 106, 789–97.

¹³² McKetin, R., Boden, J. M., Foulds, J. A., Najman, J. M., Ali, R., Degenhardt, L., Baker, A. L., Ross, J., Farrell, M., & Weatherburn, D. (2020). The contribution of methamphetamine use to crime: Evidence from Australian longitudinal data. *Drug and Alcohol Dependence*, 216(108262). DOI: [10.1016/j.drugalcdep.2020.108262](https://doi.org/10.1016/j.drugalcdep.2020.108262), page 4.

¹³³ McKetin et al. (2020). The contribution of methamphetamine use to crime, page 4.

¹³⁴ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*.

Health and treatment impacts

Some of the harms from methamphetamine arise from the way it is regulated and the choices made about when and how to enforce those regulations. The illegal status of methamphetamine causes a number of harms. Even harms that may generally be primarily associated with consumption (such as physical effects of the drug) can be exacerbated by its illegal status (for example, where methamphetamine supply becomes contaminated, leading to worse health effects).

Making a substance illegal means suppliers do not have to comply with any quality or safety regulations. This leads to adulteration, bulking, and contamination of drugs with relatively harmless fillers, sometimes harmful contaminants, and sometimes with other drugs. Methamphetamine quality is not as commonly monitored as some other drugs. In Aotearoa New Zealand, it is generally diluted with relatively benign inert substances or adulterants that may mimic the effects of the drug including caffeine, ephedrine, sugars, paracetamol, and dimethyl sulphone (MSM). MSM is emerging as a common bulking agent for methamphetamine.¹³⁵

Criminal penalties for possession of methamphetamine, and the stigma associated with a criminal activity, may act as a barrier to people finding the support they need for a methamphetamine use problem.¹³⁶

Legal controls to curb illicit use lead to barriers to accessing legitimate but related pharmaceuticals. The stigmatisation of methamphetamine may have led to higher barriers for people with ADHD accessing methylphenidate and dexamphetamine. Diagnosis of ADHD can only be undertaken by a psychiatrist or paediatrician in Aotearoa New Zealand and patients must revisit them every two years to renew a 'special authority' that allows their GP to prescribe their medication,¹³⁷ creating substantial barriers to effective treatment for people living with ADHD.

The rate of dispensing of ADHD medications in Aotearoa New Zealand is significantly below prevalence rates, and routine ADHD screening is generally not undertaken in substance use disorder treatment. This impact is felt particularly severely by Māori and Pacific peoples, who

¹³⁵ Cole, C., Jones, L., McVeigh, J., Kicman, A., Syed, Q., & Bellis, M. (2010). *CUT: A Guide to Adulterants, Bulking Agents and Other Contaminants Found in Illicit Drug*. Faculty of Health and Applied Social Sciences, Liverpool John Moores University.

¹³⁶ NZ Drug Foundation. (2020). *Briefing to the incoming Parliament*. NZ Drug Foundation.

¹³⁷ Medsafe. (2022). *Restrictions on the Supply, Prescribing or Administration of Medicines under the Medicines Act 1981 and Misuse of Drugs Regulations 1977*. <https://www.medsafe.govt.nz/profs/riss/restrict.asp>

are dispensed ADHD medications at lower rates than Pākehā.¹³⁸ Some argue it should be standard in addiction services to screen for those with co-morbid ADHD.¹³⁹

Methylphenidate, dexamphetamine, ephedrine, and pseudoephedrine are the only pharmaceuticals with prescribing regulations under the Misuse of Drugs Regulations 1977. The regulatory system for prescribing methylphenidate and dexamphetamine is more stringent than benzodiazepines, for example, which also have significant dependency potential.

The controls on methamphetamine precursors have also led to the banning of over-the-counter sales of pseudoephedrine. While medical practitioners are able to prescribe pseudoephedrine, the change in the market has led to all legal suppliers of pseudoephedrine withdrawing from the Aotearoa New Zealand market. Pseudoephedrine is an effective drug for the treatment of cold symptoms with no effective substitutes.¹⁴⁰

The banning of pseudoephedrine has imposed a cost on the general population who now have to suffer the unrelieved symptoms of colds. This is an example of how criminalisation of drugs and the associated stigma have impacts across the whole population. When the controls were brought in in 2009, Sir Peter Gluckman, the then Prime Minister's Chief Science Advisor, considered the use of a nation-wide electronic point of sale monitoring system to detect suspicious patterns of sales. This option was discounted because at the time it would have been expensive and not all pharmacies had internet connections. Given the changes in connectivity and electronic systems in the subsequent 13 years, it would be possible to reverse the over-the-counter ban and bring in an electronic monitoring system instead. This change would be unlikely to have any substantial effect on the availability of methamphetamine.

An illegal market can also have other health consequences, particularly if it undermines public health efforts. A general fear of prosecution is likely to lead many people who sell or use methamphetamine to be unwilling to cooperate with contact tracing efforts during a disease outbreak.¹⁴¹ Anecdotally, this may have been a factor in the failure of attempts to control the Delta outbreak in Aotearoa New Zealand in late 2021, damaging attempts to return to elimination of COVID-19, and resulting in many additional infections, hospitalisations, and deaths, a prolonged lockdown in Auckland, and huge social and economic costs to Aotearoa

¹³⁸ D'Souza, S. (2019). *Trends in the dispensing of ADHD medication to New Zealand youth*. Presentation to COMPASS research colloquium. <https://cdn.auckland.ac.nz/assets/auckland/arts/our-research/research-institutes-centres-groups/compass/annual-research-colloquia/2019-colloquium/compasscolloq2019-8-dsouza-adhd.pdf>

¹³⁹ Young, J. T., Bellgrove, M. A., & Arunogiri, S. (2021). Assessment of attention-deficit hyperactivity disorder in people with substance use disorder: Another case of what gets measured gets done. *Australian and New Zealand Journal of Psychiatry*, 28. doi: 10.1177/00048674211009607.

¹⁴⁰ Eccles, R. (2007). Substitution of phenylephrine for pseudoephedrine as a nasal decongestant. An illogical way to control methamphetamine abuse. *British Journal of Clinical Pharmacology*, 63, 10–14. <https://doi.org/10.1111/j.1365-2125.2006.02833.x>

¹⁴¹ Cheng, D. (2021). *Covid 19 Delta outbreak: New Ōtorohanga case, two infected in Christchurch including recent traveller from Auckland*. NZ Herald. <https://www.nzherald.co.nz/nz/politics/covid-19-delta-outbreak-new-otorohanga-case-two-infected-in-christchurch-including-recent-traveller-from-auckland/CVQ4T7QK2TCXCOLSAVG5CYE3TU/>

New Zealand. Further anecdote suggests that distrust of the health system and health messaging may also have led to higher rates of infection for those who use methamphetamine. Notably, rates of vaccination for clients who were accessing alcohol and other drug treatment services in the previous year were on average 30% lower than for the general population at the end of 2021.¹⁴² Other drug-using cohorts who do not access treatment services will likely have had even lower rates of vaccination.

In legal markets, it is possible to undertake consumer recalls of faulty or dangerous products. With an illegal market, it is also very difficult to communicate with people who are consuming methamphetamine. This makes it very difficult to adequately warn people about a specific issue, such as contamination of a batch of methamphetamine with fentanyl. This significantly increases the risks of adverse health consequences.

Particularly in North America, methamphetamine is often sold contaminated with fentanyl and other synthetic opioids,¹⁴³ which presents the serious risk of death from overdose. While this has not been an issue in Aotearoa New Zealand to date, a recent scare in the Wairarapa presents the risk we may experience similar problems in the future.¹⁴⁴

Policing and criminalisation

The most substantial harms and costs associated with the regulation of methamphetamine come from the costs and harms associated with policing the illegal production, supply, and consumption. In the five years from 2017 to 2021, 11,955 people were convicted of a methamphetamine offence.¹⁴⁵

Significant resources are spent every year in policing, judging, and jailing those who supply, sell, and consume methamphetamine. The victims of crime suffer significant uncompensated harms. The individuals who are criminalised or jailed also experience significant harms from both the deprivation of freedom, often the loss of children, sometimes permanently, and the ongoing consequences of a criminal record, such as diminished employment prospects, difficulties obtaining insurance, and an inability to travel to many countries. These costs are also borne by families, especially children who may be placed in care (often with lifelong traumatic impact), and grandparents who may have to step in as caregivers with minimal support. Evidence suggests that imprisonment has little impact on someone's likelihood of using drugs

¹⁴² Mercier & Jarrett. (2022). *State of the nation 2022*.

¹⁴³ Payer, D. E., Young, M. M., Maloney-Hall, B., Mill, C., Leclerc, P., Buxton, J., & Canadian Community Epidemiology Network on Drug Use, & the National Drug Checking Working Group. (2020). *Adulterants, contaminants and co-occurring substances in drugs on the illegal market in Canada: An analysis of data from drug seizures, drug checking and urine toxicology*. Canadian Centre on Substance Use and Addiction.

¹⁴⁴ NZ Drug Foundation (2022). *What happened in Wairarapa could happen again*. NZ Drug Foundation. <https://www.drugfoundation.org.nz/news-media-and-events/what-happened-in-wairarapa/>

¹⁴⁵ Ministry of Justice (2022). *Methamphetamine offences*. <https://www.justice.govt.nz/assets/Documents/Publications/4r5arw3-Methamphetamine-offences-dec2021-v1.0.xlsx>

because it is not an effective rehabilitation setting. Punishing people for using methamphetamine serves little useful purpose.¹⁴⁶

The burdens of policing and imprisonment fall disproportionately on Māori. While Māori are somewhat more likely to consume drugs than Pākehā, Māori made up 48% of those convicted of a low-level drug offence in 2020/21 – a disproportion far outweighing what might be expected based on use rates alone.¹⁴⁷ Māori are convicted of low-level drug offences at more than four times the rate of non-Māori.¹⁴⁸ This is part of a broader pattern of racial disparities at every stage in the justice system. Despite Māori being only 16% of the population, in 2018 Māori made up 38% of people proceeded against by police, 42% of those convicted, and 57% of people in prison.¹⁴⁹

In August 2019, the Misuse of Drugs Act was amended slightly, to codify into law the police's existing discretion to only prosecute for possession or use of drugs "if it is required in the public interest". Police must now determine whether a health-centred or therapeutic approach would be more beneficial to the public interest than a prosecution.

The introduction of the amendment has reduced monthly prosecutions for possession offences by about 15% compared to the six years prior, and rates appear to be continuing to fall slowly over time since the amendment.¹⁵⁰ But emerging evidence shows that discretion is used less frequently with methamphetamine. In addition, Māori are both far more likely to be 'policed' and are also more likely to have a previous conviction, which weighs towards prosecution. The result is that Māori continue to be far more likely to be prosecuted for low-level offences than non-Māori.^{151,152}

Violence and corruption

An illegal market means participants in that market are unable to rely on lawyers and courts to create and enforce contracts. Instead, violence and intimidation are used to uphold

¹⁴⁶ See for example Winter, R. J., Young, J. T., Stoové, M., Agius, P. A., Hellard, M. E., & Kinner, S. A. (2016). Resumption of injecting drug use following release from prison in Australia. *Drug and Alcohol Dependence*, 168, 104–11, <https://doi.org/10.1016/j.drugalcdep.2016.08.640>.

¹⁴⁷ Mercier & Jarrett. (2022). *State of the nation 2022*.

¹⁴⁸ Mercier & Jarrett. (2022). *State of the nation 2022*.

¹⁴⁹ Te Uepū Hāpai i te Ora. (2019). *Turuki! Turuki! Move together!: Transforming Our Criminal Justice System*. <https://www.justice.govt.nz/assets/Documents/Publications/turuki-turuki.pdf>

¹⁵⁰ De Malmanche, S. (2021). *The policing of drugs in New Zealand*. Evidence Based Policing Centre. <https://www.police.govt.nz/sites/default/files/publications/the-policing-of-drugs-nz.pdf>

¹⁵¹ Cheng, D. (2021). *Are police 'racist'? Data reveals huge differences across ethnicities from police use of drug laws*. NZ Herald. <https://www.nzherald.co.nz/nz/politics/are-police-racist-data-reveals-huge-differences-across-ethnicities-from-police-use-of-drug-laws/YA2BSJB3G5GO2O2FFW7HTNO4/>

¹⁵² Mercier & Jarrett. (2022). *State of the nation 2022*.

obligations.¹⁵³ It's difficult to assess the levels of violence associated specifically with methamphetamine supply and distribution in Aotearoa New Zealand, but there are data points that suggest it has some measurable impact. In almost all media reports of substantial domestic methamphetamine seizures (excluding those at the border), firearms and/or ammunition are found alongside the drugs.

The Stuff Homicide report also suggests that about 30% of firearms homicides (excluding the Christchurch terror attacks) had some kind of connection to gangs or “the criminal underworld”.¹⁵⁴ There appears to have been an upswing in these cases, with a spike of seven shootings with criminal or gang connections in 2018 and at least five in 2019. There has been a noticeable increase in intimidation, threats, and assaults with firearms in the last few years.¹⁵⁵ It is difficult to draw strong conclusions about the association between methamphetamine and violent crime, particularly murder. In the popular imagination, there is much conflation of gangs with the organised crime groups that source and distribute methamphetamine, yet only 13% of people charged with methamphetamine supply or manufacture are on the National Gang List.¹⁵⁶ This suggests some link between the methamphetamine market and gangs in Aotearoa New Zealand, but it also shows that it is only a part of the picture.

Corruption is another harm associated with illicit markets. Drug prohibitions in consuming nations have driven high levels of systemic corruption in supplier countries such as Mexico.¹⁵⁷ In Aotearoa New Zealand, the profits from methamphetamine imports and distribution create significant incentives for corruption of police, customs officers, air/port workers, and the like. It appears that in countries with reasonably strong anti-corruption systems, the corruption associated with the drug trade tends to be limited to a few individuals and is not systemic.¹⁵⁸ However, for a country such as Aotearoa New Zealand, with its very strong record of anti-corruption, even low-level corruption creates harms and risks.

Other impacts

Illicit markets generate profits that are untaxed. This represents a loss of revenue to the state, which could be used to offset some of the harms associated with consumption of psychoactive substances – as happens with alcohol and tobacco. These illicit profits are generally

¹⁵³ MacCoun & Reuter. (2001). *Drug war heresies*.

¹⁵⁴ Fyers, A., & Ensor, B. (2020). *The Homicide Report – The Analysis*. Stuff. <https://interactives.stuff.co.nz/the-homicide-report/>

¹⁵⁵ NZ Police. (2022). *Firearms Data*. <https://www.police.govt.nz/about-us/publication/firearms-data>

¹⁵⁶ National Drug Intelligence Bureau, data supplied in an Official Information Act 1982 request to the NZ Drug Foundation 29 October 2021.

¹⁵⁷ MacCoun & Reuter. (2001). *Drug war heresies*.

¹⁵⁸ Paoli, L. (2017). What is the link between organized crime and drug trafficking? *Rausch*, 6, 181–89. https://www.researchgate.net/profile/Letizia-Paoli/publication/325120387_What_is_the_link_between_organized_crime_and_drug_trafficking/links/5af96c040f7e9b026bf73457/What-is-the-link-between-organized-crime-and-drug-trafficking.pdf

'laundered', which poses risks to the integrity of the financial system. Profits from the dealing of methamphetamine may also be used to fund expansion into other illicit drug markets. For example, the development of international supply chains for methamphetamine may have also facilitated the greater availability of cocaine in Aotearoa New Zealand as dealers seek to diversify.¹⁵⁹

Workers in the supply chain are also not afforded any employment law protections and may be victims themselves of coercion and control exerted by those who control the supply chain. Sometimes people who are addicted to methamphetamine are forced to work in the supply chain in order to pay off their debts to dealers or to fund their addiction. See the discussion above on the Te Ara Oranga evaluation and acquisitive crime for more information on this point. In other cases, people with addictions may be coerced into sex work to pay off their debts.

Additional harms experienced by Māori

The sections above have highlighted particular impacts on Māori, who are both more likely to consume methamphetamine than non-Māori communities, and also bear the disproportionate brunt of police enforcement activity.

Unfortunately, data on methamphetamine use patterns is poor overall and particularly so for Māori because of the smaller data set sizes in the New Zealand Health Survey. Research into the specific health impacts experienced by Māori in relation to methamphetamine use is underdeveloped. A greater focus on developing Māori-specific data, and allocating more research to methamphetamine use and treatment could help remedy this.

Due to the ongoing spillover impacts of colonisation, Māori as a population group have significantly worse pre-existing physical and mental health issues,¹⁶⁰ and worse access to health care.¹⁶¹ Māori are more likely to live in poorer neighbourhoods, which are correlated with both higher likelihood of methamphetamine use and worse health outcomes overall. These pre-existing health disparities exacerbate the health effects of methamphetamine use for Māori. There are also specific cultural harms that Māori suffer, which are not felt in the same way by other communities.

Cultural harms

Māori may suffer cultural harms from methamphetamine use, which are not felt in the same way by other communities.

¹⁵⁹ Savage. (2020), *Gangland*.

¹⁶⁰ Government Inquiry into Mental Health and Addiction. (2018). *He Ara Oranga*.

¹⁶¹ Ministry of Health. (2019). *Wai 2575 Māori Health Trends Report*. Ministry of Health.

The highest use of methamphetamine is in small rural areas in Northland, Bay of Plenty, and Hawkes Bay, many of which have a high population concentration of Māori. When a significant chunk of a community regularly uses methamphetamine, this can pull such a number of people away from their family, cultural, and community responsibilities that it impacts the health, wairua (spirit), and cohesion of the whole community. In some instances, it may affect the viability of marae if whaikōrero (orators), karanga (those who make the ceremonial call), kōhanga kaiako (pre-school teachers), and others are impacted by methamphetamine use. It can also affect Māori in their roles as kaitiakitanga (guardians) of our whenua (land) and waterways.

Most significantly, the disruptions to whānau caused both by methamphetamine use and the enforcement of a criminal justice approach (including imprisonment), affects whakapapa, which connects people together and builds a sense of self. Methamphetamine is seen as undermining that sense of self and sense of cohesion for whole communities.

A disconnection from whānau, hapū, and iwi is reported by users of the Te Ara Oranga programme in Northland to be a deep-seated driver of methamphetamine use. Evaluators of Te Ara Oranga noted that the psychosocial effects of separation from whānau may be more acute for Māori because they are more likely to hold a collective worldview compared to the more individualised notions of family that are often held by Pākehā.¹⁶²

Physical health issues

In terms of physical health, Māori are far more likely than non-Māori to suffer from issues such as diabetes, liver disease, heart disease, and poor oral health¹⁶³ – all of which may be further exacerbated by methamphetamine use.

A recent study examining methamphetamine-associated cardiomyopathy (MAC) found young Māori men with low socioeconomic status were particularly badly affected by the disease. Sixty-two consecutive patients presenting to Middlemore Hospital with MAC were included in the study. They had a median age of 41, 87% were male and 63% Māori. The authors of the study noted that the ethnic disparity in the cohort was in part a reflection of the socioeconomic disparity in the Counties Manukau community, with 58% of Māori living in the poorest neighbourhoods (deciles 9 or 10), compared to only 17% of Europeans: “Low socioeconomic status measures may be a proxy for variables such as psychosocial stress, poor access to healthcare and reduced adherence to therapy, which could contribute to the higher incidence of MAC in Māori.”¹⁶⁴

Issues compounded by a health system that does not serve Māori well

¹⁶² Walton & Martin. (2021). *The evaluation of Te Ara Oranga*.

¹⁶³ Ministry of Health. (2019). *Wai 2575 Māori Health Trends Report*.

¹⁶⁴ Kai Ming Wang, T. et al. (2019). Poor outcomes in methamphetamine-associated cardiomyopathy: A growing health issue in New Zealand. *New Zealand Medical Journal*, 132(1502). <https://journal.nzma.org.nz/journal-articles/poor-outcomes-in-methamphetamine-associated-cardiomyopathy-a-growing-health-issue-in-new-zealand>, page 62.

In 2019, the Waitangi Tribunal released a major report about breaches of te Tiriti within the health sector in relation to primary care, legislation, and health policy (case Wai 2575).¹⁶⁵ The report found inequitable health outcomes experienced by Māori are due to colonisation and systemic racism, and reflect a persistent disregard of Te Tiriti o Waitangi. These failures have led to serious disparities in the mental health and addictions sector, as well as in Māori being able to access appropriate treatment for substance use disorder.¹⁶⁶

Indigenous people across the globe experience poorer health outcomes from drug use for similar reasons, and it is increasingly recognised that Indigenous communities need access to the resources and power to be able to develop their own solutions.^{167,168}

Te Tiriti o Waitangi must be explicit and central to the planned transformation of the mental health and addiction system. In relation to how we deal with methamphetamine use, this means ensuring that treatment, harm reduction, and other support for Māori who use methamphetamine is designed by Māori, for Māori, and is properly funded and easily accessible to all.

Services must be culturally, spiritually, and physically safe for Māori, and acknowledge wairuatanga (spirituality) as a key contributor to mental wellbeing.¹⁶⁹ Research and evaluation of services should use a kaupapa Māori approach that can identify the impact of institutional racism and help produce outcomes capable of addressing the multiple determinants of Māori wellbeing.¹⁷⁰

Magnitude and sources of harm

¹⁶⁵ Waitangi Tribunal. (2019). *HAUORA Report on Stage One of the Health Services and Outcomes Kaupapa Inquiry. Wai 2575*. Legislation Direct.

¹⁶⁶ New Zealand Mental Health and Wellbeing Commission. (2022). *Te Huringa: Change and transformation. Mental Health Service and Addiction Service Monitoring Report 2022*.

¹⁶⁷ International Indigenous Intervention to the 2019 United Nations General Assembly Special Session on Drugs. (2019). <https://www.drugfoundation.org.nz/assets/uploads/2018-uploads/International-Indigenous-Intervention-2019-UNGASS-pages.pdf>

¹⁶⁸ Health Canada Expert Task Force on Substance Use Report. (2021). *Report #2. Recommendations on the Federal Government's drug policy as articulated in a draft Canadian Drugs and Substances Strategy (CDSS)*. <https://www.canada.ca/en/health-canada/corporate/about-health-canada/public-engagement/external-advisory-bodies/expert-task-force-substance-use/reports/report-2-2021.html>

¹⁶⁹ New Zealand Mental Health and Wellbeing Commission. (2022). *Te Huringa*.

¹⁷⁰ Haitana, T., Pitama, S., Cormack, D., Clarke, M., & Lacey, C. (2020). The transformative potential of kaupapa Māori research and Indigenous methodologies: Positioning Māori patient experiences of mental health services. *International Journal of Qualitative Methods*, doi:10.1177/1609406920953752

The New Zealand Drug Harm Index (NZDHI) attempts to quantify drug harms in Aotearoa New Zealand by adding up the cost of personal harm to the individual as a result of their drug use and the cost of community harm. The estimates are \$404.52 million for personal harm and \$418.98 million for community harm for methamphetamine.¹⁷¹ While the NZDHI is useful in that it provides some hard figures, it suffers from a number of methodological difficulties.¹⁷²

First, harm caused by each drug is estimated based on total consumption (as seen in wastewater results), rather than by calculating the number of people who are dependent on the drug. This means casual use of a drug by multiple people is calculated as just as harmful as use by one person who is dependent and uses the equivalent amount, which cannot be the case. In addition, personal harm is calculated by counting deaths and hospitalisations – a crude way to measure impact on an individual of a lifelong addiction that may never take them near a hospital. As a result, the index likely dramatically underestimates the true harm of methamphetamine on individuals, families, and communities.

We have not attempted to quantify harms in Aotearoa New Zealand in this way as this would be a substantial piece of work in its own right. However, it is worth noting that the social costs and harms of drug use are very skewed in the population of people who use drugs. The majority of harms are generated by the small number of people who are dependent on the drug and use it regularly.¹⁷³ The United Nations Office on Drugs and Crime estimates that around 10% of illegal drug use can be defined as problematic, with different drugs experiencing slightly higher or lower rates of dependency. As with alcohol, there is a Pareto distribution: the heaviest consuming 20% consume the bulk of all the drugs consumed and account for the bulk of the harms experienced.¹⁷⁴

According to the New Zealand Health Survey, 1.2% of adults in Aotearoa New Zealand aged 16 and over consumed amphetamines (including methamphetamine) in 2020 – around 40,000 people. A previous survey in 2012/13 indicated that less than one quarter of those who use amphetamines use monthly or more often¹⁷⁵ – which would equate to around 9000 people using monthly or more often. While monthly use doesn't correlate directly to harmful use, we can see the group that is likely to need the most intensive interventions is relatively small. This suggests interventions that are able to target and change the behaviour of this small group, and prevent others from joining this group, may have the most effect on the overall scale of harms.

¹⁷¹ McFadden et al. (2022). *The New Zealand Illicit Drug Harm Index 2020*.

¹⁷² For example, see Woodbridge, M. (2010). How effective is the New Zealand Drug Harm Index? *Matters of Substance*, 20(1), 25–27. <https://search.informit.org/doi/10.3316/informit.628911436913487>

¹⁷³ Moore, T. J. (2007). *Working estimates of the social costs per gram and per user for cannabis, cocaine, opiates and amphetamines*. Drug Policy Modelling Project monograph series No. 14. NDARC.

¹⁷⁴ Rolles, S., Slade, H., & Nicholls, J. (2020). *How to regulate stimulants: A practical guide*. Transform Drug Policy Foundation.

¹⁷⁵ Ministry of Health. (2013). *Amphetamine Use 2012/13: Key findings of the New Zealand Health Survey*. Ministry of Health.

An Australian study quantified the costs associated with the social harms of methamphetamine consumption. That study found that more than half the costs were related to the crime associated with methamphetamine: both the trafficking of methamphetamine and associated acquisitive crime. This included costs related to policing, courts, corrections, and victims of crime.¹⁷⁶

A different approach to quantifying harms is to rank drug harms. The most common way this is done is through multi-criteria decision analysis. An Australian drug harms ranking study ranked the most harmful substances to users as fentanyl (part score 50), heroin (part score 45), and crystal methamphetamine (part score 42). The most harmful substances to others were alcohol (part score 41), crystal methamphetamine (part score 24), and cigarettes/tobacco (part score 14). Overall, alcohol was the most harmful drug when harm to users and harm to others was combined (total score 77), followed by methamphetamine (66), and heroin (58). Alcohol consistently tops rankings of harm across the world. In the UK and EU, heroin is the next most harmful substance after alcohol.¹⁷⁷

A similar piece of work ranking relative drug harms in Aotearoa New Zealand is currently being undertaken and should be published in the near future.¹⁷⁸

What is the evidence on the best harm-reduction strategies for people who use methamphetamine?

Now that we have identified the harms from methamphetamine, we turn to the best way to reduce those harms. ‘Harm reduction’ is a term that has been used in drug policy since the 1990s. There isn’t a universally agreed definition, but we adopt the following one for this paper.¹⁷⁹ A policy, programme, or intervention is harm-reducing if:

- “the primary goal is the reduction of drug related harm rather than drug use *per se*,
- Where abstinence-oriented strategies are included, strategies are also included to reduce the harm for those who continue to use drugs; and
- Strategies are included which aim to demonstrate that, on the balance of probability, it is likely to result in a net reduction in drug-related harm.”¹⁸⁰

¹⁷⁶ Tait, R. J., Whetton, S., Shanahan, M., Cartwright, K., Ferrante, A., Gray, D., Kaye, S., McKetin, R., Pidd, K., Ritter, A., Roche, A., & Allsop, S. (2018). Quantifying the societal cost of methamphetamine use to Australia. *International Journal of Drug Policy*, 62, 30–36.

¹⁷⁷ Bonomo, Y. et al. (2019). The Australian drug harms ranking study. *Journal of Psychopharmacology*, doi:10.1177/0269881119841569

¹⁷⁸ HRD NZ (n.d.). *A drug harms ranking study for Aotearoa New Zealand*. <https://hrc.govt.nz/resources/research-repository/drug-harms-ranking-study-aotearoa-new-zealand>

¹⁷⁹ Lenton, S., & Single, E. (1998). The definition of harm reduction. *Drug and Alcohol Review*, 17(2), 213–19. DOI: 10.1080/09595239800187011

¹⁸⁰ Trevino, A. (2019). *Clinard and Quinney's criminal behavior systems*, 4th Ed. Routledge.

While many proponents of harm reduction have focused on pragmatic solutions that work within existing legal frameworks, given the level of harm associated with the current legal framework for methamphetamine, we have also chosen to consider potential harm-reduction measures that may arise from changing the legal framework that regulates methamphetamine use.

In a paper on responding to global stimulant use, Michael Farrell and others provide the following observations on harm reduction measures:

- “Harm reduction approaches to reducing risky stimulant use and the harms of acute intoxication are not well evaluated. Common strategies include providing information and education about avoiding rapid-onset routes of administration (such as smoking and injecting), limiting the quantity and frequency of stimulant use, identifying early signs of stimulant psychosis (eg, illusions and persecutory ideation), general advice on risk assessment (eg, drug driving), and tips on general health (eg, sleep hygiene, diet, and dental health).”¹⁸¹
- “The absence of an effective policy response to the scale and severity of harms related to stimulant use, combined with the fear and stigmatisation of so-called problem users, has restricted the allocation of resources to reduce stimulant-related harms. Insufficient long-term investment into the development and implementation of evidence-based treatment strategies have been made, with an over-reliance on law enforcement.”¹⁸²
- “Most people who use stimulants have little contact with treatment services, and these services do not always provide respectful, tailored, and specific treatment. Major barriers to seeking help include stigma, low perceived need to reduce use, self-medication of poor mental health, and concerns about confidentiality. The design of treatment and other health services should respond to the needs and experiences of people who use stimulant drugs (eg, by being available in acute care settings where people who use stimulants are over-represented).”¹⁸³
- Evaluations of drug courts show they reduce the number of re-imprisonments, but there is substantial participant selection bias. Evaluations have not found compelling evidence of effectiveness. “Police diversion before court has been suggested to avert substantial criminal justice costs and reduce drug use and reoffending, but the evidence supporting this theory is weak.”¹⁸⁴

There is good evidence on harm-reduction measures related to communicable diseases:

¹⁸¹ Farrell et al. (2019). Responding to global stimulant use, page 1662.

¹⁸² Farrell et al. (2019). Responding to global stimulant use, page 1663.

¹⁸³ Farrell et al. (2019). Responding to global stimulant use, page 1663.

¹⁸⁴ Farrell et al. (2019). Responding to global stimulant use, page 1660.

- “the provision of sterile injecting equipment through needle and syringe programmes ... provision of materials for safer inhalation of drugs, which might reduce injecting risk behaviour; and professionally supervised drug consumption rooms. Testing and treatment of HIV and HCV infections might reduce injecting risk and incidence in people who inject drugs.”¹⁸⁵
- “Provision of condoms and pre-exposure prophylaxis (PrEP) for both HIV and sexually transmitted infections reduce sexual risk behaviours, and the transmission of HIV, HCV, and sexually transmitted infections in people who inject drugs and MSM, rather than specifically in people who use stimulants. Condoms and treatment for infectious diseases will probably prevent blood borne viruses and sexually transmitted infections in people who use stimulants, but who do not inject them as these interventions do in the general population. However, there is a poor understanding of blood borne virus and sexually transmitted infection risk in this context (eg, via pipe sharing and sexual risk behaviour), and of the effectiveness of interventions to mitigate these risks.”¹⁸⁶

Farrell et al. also write:

Managing agitation and violence in stimulant-induced psychoses is a substantial challenge for frontline emergency medical and police services. This risk of violent behaviour has an immediate, but unquantified adverse effect on family and peers. More research is needed on the effectiveness of protocols to reduce agitation related to stimulant intoxication and to manage violence risk more generally. Punitive responses to aggressive or violent behaviour within clinical services can exclude people who use stimulants from treatment and perpetuate their engagement with the criminal justice system. Therefore, treatment needs to be delivered in ways to reduce the risk of violent behaviour.¹⁸⁷

In summary, harm reduction approaches that reduce methamphetamine use internationally are not well evaluated and most countries rely instead on stigmatising law enforcement approaches in an attempt to reduce supply and demand.

Examples of harm reduction in Aotearoa New Zealand

In Aotearoa New Zealand, there is good evidence about the value of interventions that reduce the risk of communicable diseases, such as safer consumption equipment. Needle exchanges were developed here in the late 1980s, in response to the HIV/AIDs crisis. In great part due to this, we have one of the lowest rates of HIV in the world among those who inject drugs (including methamphetamine) – just 0.2%. The needle exchange programme also helps improve diagnosis and treatment of hepatitis C, reduces stigma, and promotes safer drug use.¹⁸⁸

¹⁸⁵ Farrell et al. (2019). Responding to global stimulant use, page 1660.

¹⁸⁶ Farrell et al. (2019). Responding to global stimulant use, page 1660.

¹⁸⁷ Farrell et al. (2019). Responding to global stimulant use, page 1662.

¹⁸⁸ Yu et al. (2021). Quarterly drug use report.

Another good example of harm reduction for methamphetamine (and other drug use) in Aotearoa New Zealand is drug checking, which is offered at festivals, events, and clinics. In December 2021, Aotearoa New Zealand became the first country in the world to permanently legalise drug checking, and this was backed up with limited funding. People bringing methamphetamine to a drug-checking service can expect a very different conversation from what people could expect from a treatment service. There is no underlying agenda that they should stop using, and no entry criteria. The service aims to help people talk about their use of methamphetamine and how to prevent problems arising. The service reaches a different audience than traditional treatment offerings, as most of those who use the service are not likely to be experiencing stimulant use disorders.¹⁸⁹

A third example of a positive harm-reduction intervention for methamphetamine use in Aotearoa New Zealand is Rewired: Auckland. Gay, bisexual, and other men who have sex with men use illicit drugs at higher rates and are more likely to experience mental distress and substance use disorder compared to heterosexual populations.¹⁹⁰ This group can find it difficult to get support from mainstream services because the services don't reflect their experiences.

Rewired: Auckland, launched in 2019 by the Burnett Foundation Aotearoa and the Drug Foundation, is a support group for men who have sex with men and want support to review, reduce, or stop their methamphetamine use. Each participant is supported to reach their own goals rather than focusing on abstinence as the only measure of success.

The Aotearoa New Zealand programme is based on a similar one developed in Australia and was co-developed with people with lived experience. Rewired in Aotearoa New Zealand has been trialled with excellent outcomes (though results have not yet been published). Among the participants:

- 75% reduced their psychological distress and moved into a less concerning bracket of the Kessler Psychological Distress Scale or remained in the 'well' bracket. These changes were more pronounced for those who began the group in the 'severe' bracket
- 75% reduced the number of days on which they had used methamphetamine in the past month
- 88% finished the group feeling closer to where they wanted to be in their relationship with methamphetamine (with an average increase of 2.1 points on a 10-point scale)

¹⁸⁹ Personal communication from Ben Birks Ang, Deputy Executive Director Programmes, NZ Drug Foundation.

¹⁹⁰ Saxton P. et al. (2019). 'Flux NZ': An online national cohort investigating HIV, STI and drug-related practices among New Zealand gay and bisexual men. Poster presentation.

- 88% finished the group feeling more satisfied with their progress towards where they wanted to be in their relationship with methamphetamine (with an average increase of 2.6 points on a 10-point scale).¹⁹¹

The Aotearoa New Zealand Rewired participants reported they could not talk about their experiences in mainstream support groups because of how different it was to the experiences of other group members and the fear of stigma from their sexual identity and activities.

An evaluation of the Australian programme on which Rewired: Auckland was modelled showed similar improvements in participant psychological distress, personal wellbeing, stage of change, and reductions in methamphetamine use.¹⁹² Further qualitative analysis revealed additional benefits associated with addressing fear and discrimination.

This example shows that harm-reduction initiatives can dramatically reduce methamphetamine harm and use, especially when there is no entry threshold to attending, and the support is tailored to specific groups so the support offered reflects their experiences.

A comprehensive approach to addressing harm from methamphetamine – Te Ara Oranga

Te Ara Oranga, piloted in Northland since 2016 and now expanding to the Eastern Bay of Plenty, is a comprehensive social-wellbeing intervention designed to address all aspects of the harmful consequences of methamphetamine use for users, whānau, and community. It does this through partnerships between police and Health, iwi, NGOs, and other service providers – the strength of these partnerships is seen as core to its success. Te Ara Oranga also includes elements of prevention, treatment, and peer leadership. The combined response addresses both supply and demand, and includes targeted enforcement, treatment for individuals, and whānau, community education, and health promotion work. Te Ara Oranga also uses de-stigmatisation approaches, such as bringing peer support workers into emergency wards to help doctors better understand patients.

The programme is a blend of initiatives centred on a 16-week programme based on the Matrix Model from North America, but tailored to be culturally appropriate to the communities it serves. The success of Te Ara Oranga is evidenced in the changes of mindset identified by the evaluators across agencies, professionals and communities: "...the programme has developed significant innovation, developed novel partnerships, and with the weight of community support, forged a programme that is leading-edge in design and operation."¹⁹³

In Northland, Te Ara Oranga aims to counter the gang-led business model that markets methamphetamine by giving people an alternative narrative and has been successful in this.

¹⁹¹ NZ Drug Foundation. (2021). *Proceeds of Crime funding proposal* (unpublished).

¹⁹² Burgess, K., Parkhill, G., Wiggins, J., Ruth, S., & Stoovè, M. (2018). Re-Wired: Treatment and peer support for men who have sex with men who use methamphetamine. *Sex Health*, 15(2), 157–59.

¹⁹³ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 12.

The multi-dimensional approach has been shown to reduce reoffending by 34%¹⁹⁴ and provide a return of \$3–\$7 on each dollar invested.¹⁹⁵

The total cost of rolling out Te Ara Oranga would be as little as \$40–\$45 million nationwide, and would have an impressive return of investment of at least \$100–150m per annum.¹⁹⁶ The programme has been referred to as a game changer: “Te Ara Oranga has been shown to reduce drug-related harm and support better community health, improved social wellbeing including re-engagement with whānau and employment, and better justice outcomes including reduced family violence and crime.”¹⁹⁷

The importance of law reform

As discussed above, by some calculations, more than half the costs of the social harm of methamphetamine are related to the crime associated with methamphetamine: both the trafficking of methamphetamine and associated acquisitive crime. This includes costs related to policing, courts, corrections, and victims of crime.¹⁹⁸ The scale of these harms poses a serious question as to whether the current regulatory settings (prohibition with discretionary decriminalisation of possession) are optimal for minimising the harms associated with methamphetamine consumption.

An optimal regulatory system for methamphetamine would need to:

- reduce risks of harm from methamphetamine consumption
- reduce the size and scale of the illicit market
- minimise the number of people who are new consumers of methamphetamine
- offer treatment and support to all people who use methamphetamine with problematic use patterns.

Methamphetamine clearly poses acute and chronic risks of harm to both people who use methamphetamine and their communities. But prohibition as a regulatory model also entails high levels of harm. Our laws prevent people accessing help when they need it, and they leave thousands every year with a conviction that impacts on employment, relationships, and travel. In the five years from 2017 to 2021, 11,955 people were convicted of a methamphetamine offence.¹⁹⁹ Of those, 3983 were sentenced to prison, with a huge impact on their own futures,

¹⁹⁴ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 18.

¹⁹⁵ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 12.

¹⁹⁶ NZ Drug Foundation. (2022). Budget 2022 chance to move away from failed approaches to drugs. Press release.

¹⁹⁷ Little, A. (2022). Meth addiction service launched in Eastern Bay of Plenty. Beehive Press Release. <https://www.beehive.govt.nz/release/meth-addiction-service-launched-eastern-bay-plenty>

¹⁹⁸ Tait et al. (2018). Quantifying the societal cost of methamphetamine use to Australia.

¹⁹⁹ Ministry of Justice (2022). *Methamphetamine offences*. Retrieved from <https://www.justice.govt.nz/assets/Documents/Publications/4r5arw3-Methamphetamine-offences-dec2021-v1.0.xlsx>

their families, and their communities. Yet our law has not been effective in managing the risks to those who consume methamphetamine and their communities.

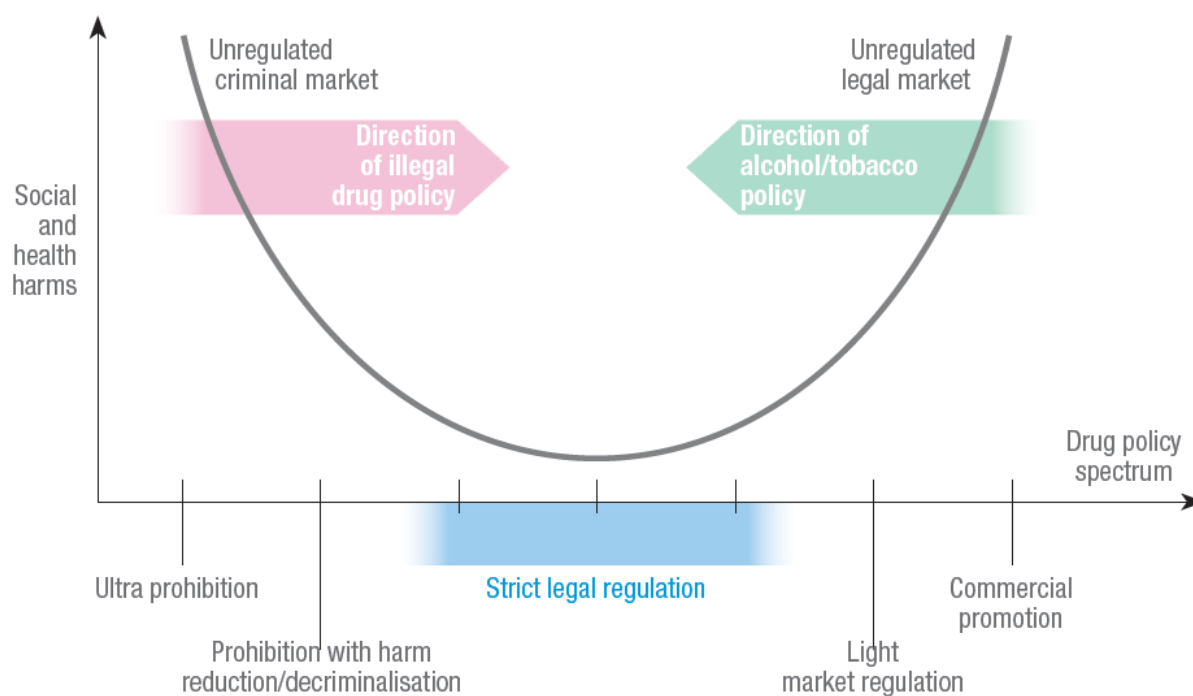
Theory of drug regulation

Assessing alternatives to prohibition requires a brief digression into the theory of drug regulation.

There are many different ways of regulating drug markets. Alcohol is regulated through age restrictions, the licensing of outlets, and controls on hours and locations of sale. Tobacco is regulated through age restrictions, plain packaging, and restrictions on retail outlets. Alcohol and tobacco are more strictly regulated than other consumables because they are not 'ordinary commodities' and can create dependency and long-term health issues, and have negative effects on people other than the person consuming it.²⁰⁰ The fact that alcohol and tobacco are not illegal like other drugs with potential to harm – despite their huge harm profiles compared to most illicit substances – is a historical, social, and cultural phenomenon rather than a logical one.

Different regulatory models for psychoactive drugs are shown on the graph below. The bottom axis represents the spectrum of regulatory controls from complete prohibition (which leads to an unregulated criminal market) and complete deregulation (which leads to a largely unregulated legal market). The social and health harms are generally highest at these two extreme ends of the spectrum, but decline in markets with strict but legal supply mechanisms. A common theme internationally is a move away from the extremes of unregulated legal or criminal drug markets towards decriminalisation or strict legal regulation. The question is, which model would most effectively reduce the harms from methamphetamine in Aotearoa New Zealand? The legal status of other drugs is also important, because people who use drugs usually use several different drugs.

²⁰⁰ Transform Drug Policy Foundation. (2020). *How to regulate stimulants*. Transform.



A spectrum of policy options

ADAPTED FROM Marks, J. (1987). The Paradox of Prohibition. *Mersey Drugs Journal* 1

Decriminalisation

Some of the harms caused by methamphetamine can be addressed through decriminalisation: removing criminal penalties for individuals who possess drugs for personal use. As well as removing the harm caused by the criminalisation of methamphetamine use (such as convictions for possession offences), decriminalisation would make it easier for people who use methamphetamine to access treatment, advice, drug testing, and other harm reduction measures. Decriminalisation can destigmatise drug use and remove the fear of legal repercussions. This makes it easier for people who use drugs to access information, support, and healthcare for any drug-related issues.²⁰¹

We recommend that Aotearoa New Zealand shift to full decriminalisation, with the removal of the existing police discretion, which is so unevenly applied. The current system leads to serious inequities in its application, with regional disparities and Māori being more likely to be prosecuted.²⁰²

²⁰¹ Trevino, A. (2019). *Clinard and Quinney's criminal behavior systems*, 4th Ed. Routledge.

²⁰² Cheng, D. (2021). *Regions where police are most and least likely to charge drug users*. NZ Herald. <https://www.nzherald.co.nz/nz/politics/regions-where-police-are-most-and-least-likely-to-charge-drug-users/KNL52BPFG4QTMSSM6HIWDNVOM/>

Under a model of decriminalisation, selling and purchasing methamphetamine would continue to attract criminal penalties. Decriminalisation therefore has almost no impact on the harms associated with the supply chain, which would remain a prohibited criminal venture. It also creates difficult questions as to the boundaries where criminal sanctions begin.

The evidence suggests that many people who use methamphetamine also sell it as a way of helping to fund their consumption. Because of this, a system that discriminates between people who use and people who sell will not necessarily be effective in managing the population of people who use it frequently and problematically.

Regulation of cannabis and low harm substances

Alongside decriminalising methamphetamine, we propose legalising cannabis and 'low harm'²⁰³ psychoactive drugs, with strict regulatory controls. The regulation of low harm substances was actually provided for in Aotearoa New Zealand legislation with the passing of the Psychoactive Substances Act 2013. Unfortunately, the Act has never functioned as intended and no substances have ever been approved for sale. The classification of substances to determine what meets the definition of 'low harm' needs to be an evidence-based process led by scientists.

People make choices about consuming a particular drug in the context of what is available in the market. It would be helpful to legalise access to less harmful drugs, so people who use drugs are less likely to come into contact with more harmful drugs via the illicit market.

Around the country, there is a public perception in many communities that cannabis markets have been consciously replaced with methamphetamine, because the profit margin is higher:

...people talk about it getting harder and harder to find marijuana, but easier and easier to find meth. It is like we are having a marijuana drought, like supply has dried up, like someone bought it all and took it away so the only thing out there is alcohol and meth.²⁰⁴

We propose legalising cannabis with strict controls, and getting the Psychoactive Substances Act 2013 working as it was originally intended, so other substances can provide realistic and legal alternatives to methamphetamine.

Could something similar to Opioid Substitution Therapy (OST) work for methamphetamine?

²⁰³ Harm levels could be modelled using the existing criteria in the Psychoactive Substances Act 2013, for example, or through multicriteria decision analysis such as: Nutt, D. J., King, L. A., & Phillips, L. D. (2010). Drug harms in the UK: A multicriteria decision analysis. *The Lancet*, 376(9752), 1558–65.

²⁰⁴ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*, page 87

Agonist-based therapies are treatments using a drug with similar pharmacological and behavioural effects to the drug being used. They generally relieve cravings and other symptoms of withdrawal. They are commonly used for the treatment of opioid (methadone or buprenorphine/naloxone) and tobacco (nicotine) use disorders.

In Aotearoa New Zealand and many other countries, opioid agonists such as methadone are prescribed to people who are addicted to opioids to prevent withdrawal and reduce cravings. Opioid Substitution Therapy (OST) has been shown to save lives,²⁰⁵ reduce harm to people, reduce criminal behaviour,²⁰⁶ and be an extremely cost-effective intervention (savings can exceed costs by a ratio of 12:1, according to the World Health Organization).²⁰⁷

OST helps people with opioid addiction to improve their day-to-day functioning, and manage withdrawal symptoms. The added stability the treatment brings can help people stay in treatment, engage in their care, and work toward recovery. The treatment can also significantly lower the risk of drug-related harms such as hepatitis C and HIV transmission, as well as fatal overdose.²⁰⁸ It can also improve health-related quality of life.²⁰⁹

OST is long-term maintenance therapy rather than a 'cure' because treatment must be continued for the effects to continue. The approach is a harm reduction one, rather than a treatment in the traditional sense.

There has been some research, here and in other countries, to investigate whether agonist therapies can help people who use methamphetamine, in the same way that methadone and buprenorphine/naloxone work for opioids. Trials have had mixed levels of success for various reasons, but they do show some promise, and are worth investigating further here.

Treatment of stimulant use disorders with agonist therapy

A number of clinical trials for the treatment of stimulant (cocaine, amphetamine, and methamphetamine) use disorders have been undertaken using various psychostimulants (modafinil, methylphenidate, and amphetamines).

²⁰⁵ Santo, T. et al. (2021). Association of opioid agonist treatment with all-cause mortality and specific causes of death among people with opioid dependence: A systematic review and meta-analysis. *AMA Psychiatry*, 78(9), 979–93. doi:10.1001/jamapsychiatry.2021.0976

²⁰⁶ Gisev, N. et al. (2019). The effect of entry and retention in opioid agonist treatment on contact with the criminal justice system among opioid-dependent people: A retrospective cohort study. *The Lancet*, 4(7), E334–E342.

²⁰⁷ WHO/UNODC/UNAIDS. (2004). *Position paper: Substitution maintenance therapy in the management of opioid dependence and HIV/AIDS prevention*. <https://www.unodc.org/documents/hiv-aids/Position%20Paper%20sub.%20maint.%20therapy.pdf>

²⁰⁸ WHO/UNODC/UNAIDS. (2004). Position paper.

²⁰⁹ Aas, C. F. et al. (2020). Health-related quality of life of long-term patients receiving opioid agonist therapy: A nested prospective cohort study in Norway. *Substance Abuse Treatment, Prevention, and Policy*, 15(68). <https://doi.org/10.1186/s13011-020-00309-y>

A small-scale study in Aotearoa New Zealand and Finland in 2012 aimed to assess the efficacy of methylphenidate as a substitution therapy for amphetamine/methamphetamine dependence. The study found no statistically significant difference in the percentage of positive urines (an abstinence measure) between those receiving methylphenidate and placebo. However, there was a significant difference ($P < 0.05$) between the active and placebo arms in terms of retention of participants in the study, which suggests participants in the active arm perceived some benefit from the study.

The researchers concluded that the low retention rate of those on the placebo made it difficult to draw firm conclusions about the efficacy of the treatment, and they suggested that any replication of the work consider alternatives to the rigid clinic attendance criteria, and consider using an increased dose: “In these strongly dependent people, different doses or dosing regimens of methylphenidate substitution might yet prove to be effective.”²¹⁰

As discussed above in the section on treatment methods, two trials in a 2020 meta-analysis used prescription amphetamines specifically to treat methamphetamine use disorders, and, while findings were partially positive, none assessed sustained abstinence. Another study conducted in patients with amphetamine use disorder and ADHD found that a high dose of extended release methylphenidate reduced use of amphetamine as compared to a placebo. This result indicates that trials with high doses and extended release formulation of prescription psychostimulants could promote sustained abstinence from methamphetamine.²¹¹

The Canadian experience

In British Columbia, medical practitioners have been able to prescribe amphetamines to users of methamphetamine during the COVID-19 pandemic in the same way as they prescribe methadone to those addicted to opioids. The purpose of the initiative is to reduce the risk to this group from both contaminated supply and to enable them to stay at home as part of broader efforts to suppress viral transmission. The two stimulant drugs offered under the stimulant risk mitigation (safer supply) guidance are methylphenidate (Ritalin) and dextroamphetamine (Dexedrine).²¹²

Dextroamphetamine (a central nervous system stimulant) has been found to be a safe and effective treatment for stimulant dependence among people who are also receiving heroin-assisted treatment.²¹³

²¹⁰ Wayne Miles et al. (2013). Extended-release methylphenidate for treatment of amphetamine/methamphetamine dependence, page 6.

²¹¹ Tardelli et al. (2020). Prescription psychostimulants for the treatment of stimulant use disorder.

²¹² British Columbia Centre on Substance Use. (2020). *Risk mitigation in the context of dual public health emergencies: Interim clinical guidance*. <https://www.bccsu.ca/wp-content/uploads/2020/05/Risk-Mitigation-in-the-Context-of-Dual-Public-Health-Emergencies-v1.6.pdf>

²¹³ Nuijten, M., Blanken, P., van de Wetering, B., Nuijen, B., van den Brink, W., & Hendriks, V. (2016). Sustained-release dexamfetamine in the treatment of chronic cocaine-dependent patients on heroin-assisted treatment: A randomised, double-blind, placebo-controlled trial. *The Lancet*, 387(10034). doi: [10.1016/S0140-6736\(16\)00](https://doi.org/10.1016/S0140-6736(16)00)

Results have been mixed from a qualitative British Columbia study of people who have also been using opioid agonist treatment alongside dextroamphetamine for stimulant use. For people with stimulant use disorders, the sub-set who were using the stimulant for a boost of energy or wakefulness found the prescribed psychostimulants to be very useful and many preferred it to their illicit supply. Other people who were seeking a particular effect or high were unable to get that from the sustained-release prescribed medications, and so they continued to use illicit stimulants.²¹⁴

The lack of success for this second group may well be because the daily maximum doses doctors could prescribe (60mg)²¹⁵ were not sufficient to meet patient needs, or to compete with the doses they were currently using. A systematic review defined a 'robust dose' as 60mg or more, and noted that trials with high doses and extended release formulation of prescription amphetamines could promote sustained abstinence from methamphetamine.²¹⁶

There are several other factors that could explain the mixed acceptability of dextroamphetamine as a substitute for street methamphetamine:

- Canadian methamphetamine is often contaminated with fentanyl or benzodiazepines. People who use it may be habituated to a combination of drugs with effects unlike pure meth/amphetamine.
- Some people who use methamphetamine may have a strong preference for methamphetamine over amphetamine.
- People were not able to consume the prescribed medication in the same way they would normally consume methamphetamine (smoking or injecting) because the formulation was unsuitable for this mode of use, which led to different or diminished effects.

Despite mixed results, recent experience in British Columbia, Aotearoa New Zealand, and elsewhere certainly leaves space for more research to establish whether stimulant substitution treatment could work more effectively with higher doses, different modes of administration, or different treatment protocols in the Aotearoa New Zealand context.

Proposal of a pilot of stimulant substitution treatment (SST)

We propose a pilot to test a model of treatment that we have termed stimulant substitution treatment (SST). The pilot would address a cohort of people who are addicted to methamphetamine but have struggled to abstain from use despite undergoing two rounds of treatment. The pilot would test a few different substitutes for illicit methamphetamine.

We estimate that 6–8000 people are responsible for the bulk of the consumption of methamphetamine in Aotearoa New Zealand and much of the harm experienced. An ideal

²¹⁴ Palis et al. (2021). Exploring the effectiveness of dextroamphetamine for the treatment of stimulant use disorder.

²¹⁵ British Columbia Centre of Substance Use. (2020). *Risk mitigation in the context of dual public health emergencies*.

²¹⁶ Tardelli et al. (2020). Prescription psychostimulants for the treatment of stimulant use disorder.

intervention would help them to live better lives, seek support, and reduce their use in the long term, similar to the way Opioid Substitution Treatment does for the many thousands of people who are addicted to opioids in this country. A pilot could help establish if that is a realistic proposal.

By providing a stimulant substitute to illicit methamphetamine, we would also aim to reduce the harmful impacts upon participants of the illicit market, a significant source of harm in its own right. Without the stress of sourcing methamphetamine illegally, and struggling to pay the huge costs of that (sometimes via criminal activity or via sex work), participants should be able to focus more on living healthy, well lives. Another objective would be to reduce levels of acquisitive crime. This could be tracked by monitoring local crime statistics, alongside qualitative measures. Such outcomes have been identified in Switzerland, where people who are addicted to opioids are able to source a substitute to illicit heroin (either methadone or prescribed heroin). This example of substitution of an illicit product is outlined in more detail below.²¹⁷

Importantly, we would expect the pilot to help those taking part to reduce their use of methamphetamine, and certainly to reduce harmful patterns of use. Steady parenting, prioritising healthy eating and exercise, or holding down employment – sometimes side-lined in extreme cases of addiction – can once again be a focus. Importantly, participants will more easily be able to distance themselves from the people who ensured they had a regular supply of illicit methamphetamine, and who may be otherwise holding back their recovery (abusive partners or dealers, for example). Impacts on the health outcomes for individuals should be relatively easy to measure as part of the pilot.

If the pilot were to be successful and expanded across the country, over time these three objectives (removing individuals from the illicit market, reducing acquisitive crime, and reducing harmful use patterns) may well also reduce the number of people who are new or irregular consumers of methamphetamine. Fewer people should be introduced to methamphetamine because:

- people will be less motivated to deal to fund their own use, meaning fewer people dealing in the community
- people may be less likely to use it in social settings
- organised crime could well move away from a market that has become less profitable (it is thought that the heaviest consuming 20% of those who use methamphetamine – many of whom would be eligible for SST – account for the vast bulk of demand).

Where other stimulants don't work, we suggest trialling prescribed methamphetamine

Research shows some limited potential for stimulant substitution therapy such as methylphenidate (Ritalin) and dextroamphetamine, and this should be further explored. However, for some people, these substances may not work because they do not give them the

²¹⁷ Rolles. (2016). *Heroin-Assisted Treatment in Switzerland*; MacCoun & Reuter. (2001). *Drug war heresies*.

effect they are seeking through their use of methamphetamine. We therefore turn to the idea of trialling substitution therapy with methamphetamine for those people, in controlled conditions. Something similar has been tried with heroin in Switzerland and other places, and has been hugely successful.

Experience of heroin-assisted treatment in Switzerland²¹⁸

Heroin-assisted treatment (HAT) is the prescribing of medical-grade heroin as a treatment for heroin dependence. Switzerland had a serious public health crisis with heroin use in the 1980s, particularly with sharing of needles and high rates of HIV transmission. By 1990, HIV prevalence was 40% among people who had been injecting drugs for more than 10 years.

Initially, Switzerland responded to its heroin problem with a law enforcement crackdown. This was associated with a dramatic rise in people who injected drugs, from 4000 in 1975, when the law changed, to 30,000 in 1992. In Zurich, authorities attempted to limit heroin injecting to a specific park, the Platzspitz, where people using drugs were not arrested. While some health interventions were delivered in the park, ongoing health and crime problems spilled over into neighbouring areas and the tolerance zone was shut down in 1992. The main concerns of the broader community were about the unsightliness of public heroin consumption and concerns about acquisitive crime.

In 1992, a major rethink of heroin policy was undertaken. This included a combination of existing harm-reduction measures (opioid substitution and needle exchanges) as well as HAT. The Swiss HAT model required patients to attend a clinic up to three times a day and use their prescriptions on site under medical supervision. This meant patients had the benefit of prescribed supply (heroin of known strength, with no adulterants, and clean injecting equipment) with the benefits of regular access to services and supervised use in a safe facility. On-site consumption also prevented diversion to the illegal market.

HAT was initially set up as a trial with heroin, morphine, and methadone on offer. Patients were required to pay a nominal fee (about \$15) for each dose. Patients preferred heroin over the other drugs and so they were no longer offered. Participants had to be at least 20 years old and have had two years of intravenous injecting and have failed at two other treatment attempts. Participants were allowed to choose their own dose. Faced with no constraints, many participants initially used very high doses but soon stabilised at a lower level. No overdoses were reported among participants while they stayed in the trial. The initial trial of HAT was expanded after the evaluations found good results. The programmes were set up as empirical investigations with evaluation and evolution in line with the results. Retention in the trial was very high and most of those dropping out moved to other treatment modalities such as methadone or abstinence-based programmes.

²¹⁸ Rolles. (2016). *Heroin-Assisted Treatment in Switzerland*; MacCoun & Reuter. (2001). *Drug war heresies*.

HAT participants had significant improvements in their health outcomes. Illicit consumption was significantly reduced and heroin was not diverted to illicit markets. Participants also greatly reduced their acquisitive crime activity (this benefit alone exceeded the cost of treatment) and reported increases in employment. Self-reported mental health improved. Importantly, initiation of new heroin use fell as medicalisation made it less attractive. This, combined with the reduced demand from people who used heroin heavily, led to reductions in street dealing and recruitment by people who both consumed and dealt heroin. These positive outcomes have been reproduced in other countries that adopted the model. While it is an expensive model to implement, HAT also has greater benefits than other interventions and results in significant net savings to society.

What does this mean for our pilot?

Many of the positive benefits of HAT are similar to that of OST. Some people always preferred methadone. Others switched to methadone after a period of HAT. The Swiss model is so effective because anyone with problematic opioid use can access the therapy that works best for them. People do not all use drugs for the same reasons and so it is unsurprising that not all treatments work for all people. Specifically, in the Swiss case, some people preferred heroin over methadone because they could only continue to experience the desired effect from heroin. If we want to find a workable solution for as many as possible of the cohort of people who use methamphetamine, we should trial different substitutes alongside methamphetamine.

Trials of substitutes for methamphetamine in Canada and elsewhere have shown mixed results: they work well for some people but not others. We therefore suggest it is worth trialling both methamphetamine and other stimulant substitutes in an Aotearoa New Zealand pilot programme, to find the mix of therapeutic models that works for everyone. Ultimately, the use of drugs is a culturally and socially mediated process, so we need to find what works best in our context.

Limitations

Some of the characteristics of methamphetamine compared to opioids may make SST more challenging than OST or HAT. There may be medical ethics difficulties with the prescription of methamphetamine, given the harmful physical effects of consumption of the drug (hypertension and cardiomyopathy, for example). These effects make it somewhat different in nature to prescribing opioids, or methadone as part of opioid substitution treatment. That said, doctors sometimes prescribe highly toxic substances (such as chemotherapy drugs) or drugs with substantial side-effects in order to treat a specific condition. It is also worth noting that methamphetamine is a prescription drug in the United States, marketed as Desoxyn, and used to treat ADHD.

How might a stimulant substitution treatment (SST) model look?

Details about how SST may work would need to be further teased out, but a possible model is described here.

Participants would need to be at least 18 years old, have had two years of regular (weekly) methamphetamine usage, and have had at least two treatment attempts. Participants would receive a prescription for a stimulant such as methylphenidate, dextroamphetamine, or methamphetamine (the pilot could evaluate the difference between using the different drugs). Ideally, at the start of the day, they would need to decide their consumption level for that day and would not be allowed to increase the level after they start consuming. This is because when a person is under the influence it is easier to want more than the person may consider sensible when sober.²¹⁹

It is important that the participant is able to consume the prescription by their preferred route of administration, and that they can set the daily amount prescribed themselves (not doing this has been highlighted as a failing of previous trials). This makes it much less likely that they will turn to the illicit market for supply to achieve their preferred type of experience. They would be able to consume their stimulant via inhalation, injection, or orally.

The pilot programmes could run in different parts of the country and would need to be subject to rigorous evaluation.

Rationale for piloting this approach

While decriminalisation of methamphetamine (and other drugs) will be an effective intervention to reduce harm from criminalisation, reduce stigma, and make it easier for people to access support, harms resulting from involvement in the illicit methamphetamine market would continue to be an issue. These fall most heavily to people who use frequently or are addicted, and include indebtedness and coercion, involuntary prostitution, acquisitive crime, and dealing to support methamphetamine use.

As mentioned above, we estimate that 6–8000 people are responsible for the bulk of the consumption of methamphetamine in Aotearoa New Zealand and much of the harm experienced. This approach aims to maintain, or better yet, reduce the size of this group of people and reduce the harmful impacts upon them of the illicit market, a significant source of harm in its own right.

Substitute/maintenance prescribing aims to support this group of frequent users and help them extricate themselves from the harms suffered by them as a result of contact with the illicit market so they are able to switch their focus towards healthier and happier lives. This approach should also significantly reduce acquisitive crime.

²¹⁹ People with drug-use experience recommend limiting the amount an individual makes available to themselves before they get high, because the desire to keep taking more is very strong. See Trott, D. M. (2019). *The Drug Users Bible*. MxZero Publishing.

Conclusion

Methamphetamine, and the way it is regulated, causes multiple harms in Aotearoa New Zealand, from dependence, loss of livelihoods, and breakdown of relationships and families, all the way through to loss of life on our roads, and the pain of convictions and imprisonment.

Narcotics Anonymous, in guidance to people with addiction issues, warns that “insanity is repeating the same mistakes and expecting different results.”²²⁰ The same can be said of our current approach to dealing with methamphetamine harms. Aotearoa New Zealand has made significant investments in wide-ranging programmes such as the 2009 Methamphetamine Action Plan, with little to no impact. It is obvious the model of criminalisation and supply controls does not work. Instead, we need to try other approaches, in the hope of achieving different results.

In this paper we have attempted to set out a comprehensive model to address the harms from methamphetamine. We have proposed a suite of interventions that could reduce harm to those who use methamphetamine, alongside treatment suggestions.

Without adjusting the social determinants of addiction, our goals to reduce methamphetamine harm will be harder to achieve: we need to acknowledge the harms are much greater in communities that are less wealthy, and harms fall more heavily to Māori than to other ethnicities (this includes both harms from using methamphetamine, and from the criminal justice approach to dealing with it). Making real progress means addressing underlying social issues such as poverty, housing, and the impacts of colonisation.

We propose a full suite of harm reduction and treatment interventions here, many of which will be familiar already. However, we also propose changes to our regulatory system. We need to decriminalise the use of methamphetamine, to ensure everyone can access harm reduction and treatment if and when they need it, and to stop harmful convictions. We also propose regulating cannabis and lower harm substances for sale, as a way to nudge people away from more harmful substances such as methamphetamine.

Finally, we propose a pilot programme of stimulant-assisted treatment in Aotearoa New Zealand. The purpose of the pilot would be to help extricate people who are addicted to methamphetamine from the harms that result from reliance on the black market. Based on overseas experiences, we would expect the trial to reduce demand, reduce acquisitive crime, and reduce harmful use patterns for those who take part.

This is a new approach to dealing with methamphetamine, which may surprise some. However, the alternative is to continue with the status quo – where thousands of people and their families struggle with the daily reality of methamphetamine addiction. For some, this means serious

²²⁰ Narcotics Anonymous (1981). Unpublished pamphlet from World Conference. <http://www.nauca.us/wp-content/uploads/2015/04/1981-11-Basic-Text-Approval-Form-White.pdf>, page 11.

health and mental health impacts, family and economic breakdown, involvement with an illicit market that creates multiple harms in its own right, as well as convictions or even imprisonment.

The status quo has proved unable to fundamentally address the harms experienced in our country from methamphetamine use over the past two decades. By addressing both supply and demand from multiple different angles, and focusing on treatment, prevention, and harm reduction rather than criminalisation, our proposal could have a significant impact on the very real harms caused by methamphetamine in Aotearoa New Zealand.

Full list of recommendations for reducing the harms of methamphetamine

Our full proposal is as follows:

Comprehensive locality-based approaches

- Roll out Te Ara Oranga, a comprehensive social-wellbeing intervention, across the country. This programme has been positively evaluated and found to reduce offending by 34%. The total cost of rolling out Te Ara Oranga would be as little as \$40–\$45 million and is estimated to return \$3–\$7 on each dollar invested.²²¹

A substitution treatment pilot

- Trial stimulant substitution treatment for people who are addicted to methamphetamine, to improve health outcomes and extricate people from harmful contact with the illicit drug market. Our proposal is based on research from Aotearoa New Zealand, Canada, Switzerland, and elsewhere that indicates we may expect to see a range of positive impacts on health, harmful use patterns, and criminal justice involvement.

Health harm reduction measures

- Fund and invest in pragmatic harm-reduction information and education to all people who use drugs, and their family, friends, and whānau. Information and education can help people by encouraging them to reflect on their drug use, be aware of warning signs of problematic use, and know how to access support if they need it. It can also empower friends and family members to provide support to people who use methamphetamine, while also looking after themselves.
- Fund broader provision of drug checking services. These services provide a unique opportunity to have conversations with people who use methamphetamine about their use, and can also help reduce the risk of harm should methamphetamine supplies become contaminated with other substances, as has happened overseas.²²²

²²¹ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*.

²²² Mercier & Jarrett. (2022). *State of the nation 2022*.

- Provide early intervention services: screenings and brief interventions in primary and community care, such as a substance use check-up, similar to sexual health check-ups.
- Offer health checks and treatment that deal specifically with the health impacts of methamphetamine use, such as dental care, sexual health, and heart check-ups. This is particularly important for Māori, who already face worse health outcomes without factoring in the compounding impact of methamphetamine use.
- Provide a safe place for people to go when or after using methamphetamine. This gives them a safe place, if they need it, a way to reduce the impact of their use on others around them, and an opportunity to have conversations about their use or other challenges in their life.
- Provide intensive support for people who use methamphetamine who are pregnant and who have children. Rather than simply removing children because parents are using methamphetamine, explore other options such as providing extra financial support, helping them into employment, ensuring housing is secure, and ensuring every family member has access to psychosocial support.
- Given the key role friends and partners play during initiation, investigate the potential of peer-led interventions to reduce new initiations into methamphetamine use, as recommended by Sheridan et al.²²³ One trial of a brief intervention undertaken with injecting heroin users in the UK resulted in a reduction in initiation to injecting at a three-month follow-up.²²⁴
- Fund the provision of safer smoking kits to minimise methamphetamine smoking-related harms. Kits could include rubber mouth pieces, information on harm reduction, and disinfectant wipes, for example. Providing kits may increase engagement with health-care services (including harm reduction services) and decrease injuries attributable to hot, damaged, or makeshift pipes among people who smoke methamphetamine.²²⁵

Treatment and support for those who use methamphetamine

- Stepped increase in treatment sector funding to meet demand and eliminate waitlists.
- Implement findings of government inquiry into mental health and addiction. The report highlighted the need for increased investment in addiction services and the importance of providing interventions earlier – well before an individual starts to experience serious problems. The report also recommended replacing criminal sanctions for the possession of controlled drugs for personal use, with civil responses.²²⁶
- Ensure support services are available in small towns and regions with high levels of methamphetamine consumption.
- Provide culturally appropriate support and programmes for Māori. A kaupapa Māori approach is essential in places with a large Māori population. The Te Ara Oranga

²²³ Sheridan et al. (2009). Initiation into methamphetamine use.

²²⁴ Hunt et al. (1998). Evaluation of a brief intervention to reduce initiation into injecting.

²²⁵ Imtiaz et al. (2019). Safer smoking kits for methamphetamine consumption.

²²⁶ Government Inquiry into Mental Health and Addiction (2018). *He Ara Oranga*.

evaluators noted the programme there could be improved by the addition of conjoint family therapy or a properly co-designed kaupapa Māori approach that involves whānau (or iwi-derived surrogates for whānau). This recommendation implies full equal partnership with iwi Māori and other appropriate Māori organisations at a local level. Kaupapa Māori approaches should be accessible in areas where they are most needed. One example is the need to expand the availability of home-based, community based,²²⁷ and residential treatment programmes across the country.

- Provide more low-barrier treatment services, such as at-home detox and treatment options that do not require abstinence as a condition of entry.
- Invest in workforce development for addiction treatment and harm reduction, particularly for kaupapa Māori approaches. Building the workforce will require long-term investment and focus. Ensuring Māori lead the development and implementation of this process is absolutely essential.
- Expand the availability of peer support in support services, harm reduction, and addiction treatment services and throughout the whole health care system. As just one example, placing peer support workers in emergency departments in Northland as part of the Te Ara Oranga programme broke down stigma and led to positive outcomes in the way doctors work with patients who use methamphetamine.²²⁸
- Trial contingency management in abstinence-based methamphetamine addiction treatment services, alongside other existing modalities.
- Trial the expansion of exercise-based treatment or support groups, alongside other treatment modalities.
- Provide counselling and support for families affected by methamphetamine use. This should include expanding pregnancy and parenting services that work to address the additional challenges and stigma that parents who use methamphetamine face, and can help them reduce the impact on their children.
- Provide ongoing after-care support and follow up for people who have undergone treatment for methamphetamine addiction. This should last a few years after they 'complete' treatment.
- Develop training for health providers to reduce stigmatisation and improve the care offered to people who use methamphetamine. Stigma is a significant barrier to AOD addiction recovery and people seeking help.²²⁹ This may be one of the most stigmatised groups in society, making it very hard for someone to come forward for help.
- Develop better integrated services for people who use methamphetamine, such as pathways into education and work.
- Improve pathways into diagnosis and well-managed treatment for those who suffer from ADHD in Aotearoa New Zealand, and investigate further the link between ADHD and methamphetamine use in the Aotearoa New Zealand context. ADHD is a risk factor for

²²⁷ Short cognitive behavioural therapy-based programmes can be effective in reducing amphetamine usage and improving other health outcomes: see Baker et al. (2005). Brief cognitive behavioural interventions for regular amphetamine users.

²²⁸ Walton & Martin. (2021). *The evaluation of Te Ara Oranga*.

²²⁹ Jowett, R; Dale, M and Cooper, L. (2021). "Mitigating barriers to addiction recovery in Aotearoa New Zealand: A lived experience perspective". Aotearoa NZ Social Work, Vol 33, Number 2, page 47

methamphetamine and other stimulant use, especially when undiagnosed and untreated. It is under-diagnosed in Aotearoa New Zealand.²³⁰ People struggle to get a diagnosis and may wait many months to access one of the few experts who can diagnose the condition. Once diagnosed, a patient must visit a specialist every two years to be allowed to continue to receive their prescription via their doctor. This leads some people to treat their symptoms with illicit methamphetamine.²³¹ Improving pathways into diagnosis and well-managed treatment (including psychosocial responses) for those who suffer from ADHD could reduce the number of people who develop harmful use patterns. This is particularly important for under-treated groups.²³²

Contextual changes

- Targeted efforts to reduce poverty, improve housing security, and help people who use methamphetamine into employment or education.

Regulatory changes

- Full decriminalisation of possession of small quantities of any drug (no police discretion or judgment).
- Legalise possession of drug utensils. There is no evidence the current offence deters drug use. The current law prohibiting drug utensils can make drug use more dangerous by making it harder to develop and sell products that are focused on reducing harm.
- Legalisation and regulation of cannabis and other less harmful psychoactive drugs for sale in licensed outlets, with strict regulatory controls. An evidence-based process led by scientists to classify substances according to their risks and harms.
- Review prescribing restrictions on dexamphetamine and methylphenidate under the Misuse of Drugs Regulations 1977. In particular, examine whether it is necessary for patients to be re-assessed by an expert every two years or forfeit their prescription. Investigate whether controls on dexamphetamine and methylphenidate should be aligned with other pharmaceuticals with addiction potential such as benzodiazepines. Alongside improving access to diagnosis, this could enable better and more equitable treatment of ADHD.

Research and innovation

- Provide dedicated funding to develop a centre of excellence to:
 - research who uses methamphetamine, why, and how, and what makes it more or less likely that they will experience problems – with a particular focus on improving data and knowledge around Māori use

²³⁰ ADHD New Zealand. (n.d.). Welcome to ADHD New Zealand. <https://www.adhd.org.nz/>

²³¹ Personal communication with ADHD New Zealand, June 2022.

²³² D'Souza. (2019). Trends in the dispensing of ADHD medication to New Zealand youth.

- innovate around harm reduction and support approaches, develop evidence-based treatment guidelines and training (particularly approaches developed for Māori, by Māori), and evaluate interventions aimed at reducing its impact
- use wastewater testing data to help guide delivery of support services to communities most affected by methamphetamine use and to evaluate the effectiveness of interventions aimed at lowering use.