The Evaluation of Te Ara Oranga: The Path to Wellbeing

A Methamphetamine Harm Reduction Programme in Northland

FINAL REPORT

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Disclosure of authors' interests

This work was funded by the New Zealand Ministry of Health. The work was researched and written by Crow's Nest Research employees. Appraisal of the evidence, formulation of recommendations and reporting are independent of the Ministry of Health, New Zealand Police, Northland District Health Board, or anyone else associated with Te Ara Oranga.

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Ethics and permissions

Kaunihera Kaumatua approved the locality assessment process for the study Northland DHB reference # 2020-12.

Locality Assessment No. 2020-12 was approved by the Chief Medical Officer of Health on 6 April 2020.

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Foreword

New Zealanders are all too aware of the devastating impact methamphetamine has on individuals, families, and communities. The harm caused by its sale and use are particularly severe in some of our most marginalised communities, with Māori, Pacific people and those living in areas of socio-economic deprivation being more likely to experience harm from drug use. These are also the groups most likely to want help but not receive it. Research indicates that the majority of people who seek help for methamphetamine use have been chronic users for between 5 and 10 years, making relapse post-treatment sadly all too common. Heavy methamphetamine use has been found to have specific withdrawal symptoms including reduced ability to control emotions and behaviours for many months.

Consequently, there is an urgent need in New Zealand for innovative therapeutic solutions from communities and this report evaluates such an initiative in Northland, Te Ara Oranga. The path to wellbeing is a unique partnership between police, government mental health and addiction services, community groups and iwi service-providers to give methamphetamine-users the opportunity to get therapeutic help. It centres on a 16-week programme, based on the widely known Matrix Model from North America. However, the evaluation clearly distinguishes the core ideas in Te Ara Oranga from those in the Matrix Model, ensuring the approach is culturally appropriate and tailored to our people. The sophisticated response adopted by the people of Northland is evident in the changes of mindset across agencies, professionals, and communities.

The evaluation raises and considers the complex social issues that underpin widespread use of methamphetamine in the region. It crosses between disciplines, blending an understanding of addiction, public health, marketing, policing, public administration, and policy. An understanding of the impact methamphetamine has on Māori lies at the heart of its success. Te Ara Oranga is identified as a unique programme that is contrasted to those that operate in other countries and its approach is offered to those who would like to learn a new way of approaching a very challenging and often persistent set of problems impacting on individuals, families, and communities.

The evaluation employs a cutting-edge strategy using data-matching of police and state health data to track progress and outcomes. Co-operation between the agencies has produced powerful insights in comparing the pathways of those who engaged with Te Ara Oranga as against those who did not.

All too often programmes designed for small groups are marginalised and misunderstood. The costs and benefits of Te Ara Oranga are considered within an effort to describe not only how the programme works but to determine whether such an effort might be meaningful at a larger scale. The evidence suggests that the large effect from Te Ara Oranga will have a positive return on investment from a wider societal perspective. In a nutshell, this report concludes that Te Ara Oranga works.

Periodically placed within this report are the real-life stories of those who have journeyed with methamphetamine use. These stories are powerful illustrations of the disruption methamphetamine use has for users, whānau and communities. These stories underscore that for methamphetamine-users, there is often a very thin line between being an 'offender' and a 'victim'.

The evaluators were supported to produce their own account without barriers. There are recommendations for the development of Te Ara Oranga and for the process of adopting the programme in other communities. For those of us looking from outside the programme, it may be uncomfortable to confront our expectations of what is possible and required to genuinely address methamphetamine use in Aotearoa New Zealand. These recommendations are formed from a pragmatic perspective of what is truly possible when solid evidence is brought to solve a complex set of problems. It is my sincere hope that those who are in positions to influence change closely study this evaluation report and seriously consider its recommendations. By doing so, we could go some way to addressing the negative impact of methamphetamine in our country.

Professor Ian Lambie, ONZM, Registered Clinical Psychologist, Chief Science Advisor, Justice Sector, July 2021.

Executive Summary

The objectives of this section

This section summarises the evaluation of Te Ara Oranga, the Northland methamphetamine reduction programme implemented by Northland DHB (NDHB) and NZ Police commenced in October 2017. The long-term impact of the initiative is understood in a comprehensive set of evaluation materials produced over an 18-month period from November 2019.

This report has different sections to from a comprehensive co-ordinated evaluation. These combine to address a set of straightforward aims.

(1) To determine the impact of the whole-of-community response approach to reducing methamphetamine demand and use, with referrals to health providers being a key frontline response undertaken in co-operation with Police and the Northland DHB.

(2) To determine the implementation practice and how it differs across regions within Northland.

(3) To determine 'what success looks like'. This goes beyond the observation of current practice to inform future development of the programme or its trajectory of development.

The evaluations in this report

The Process Evaluation (pp 18–121) outlines what Te Ara Oranga is and how it operates (Te Ara Oranga Evaluation Working Group, 2018). The materials are developed from 54 interviews of Police, Health and partner agencies frontline workers, management, and designers of the programme. The report offers a detailed understanding of Te Ara Oranga, documents its operation, its operating principles, and its novelty.

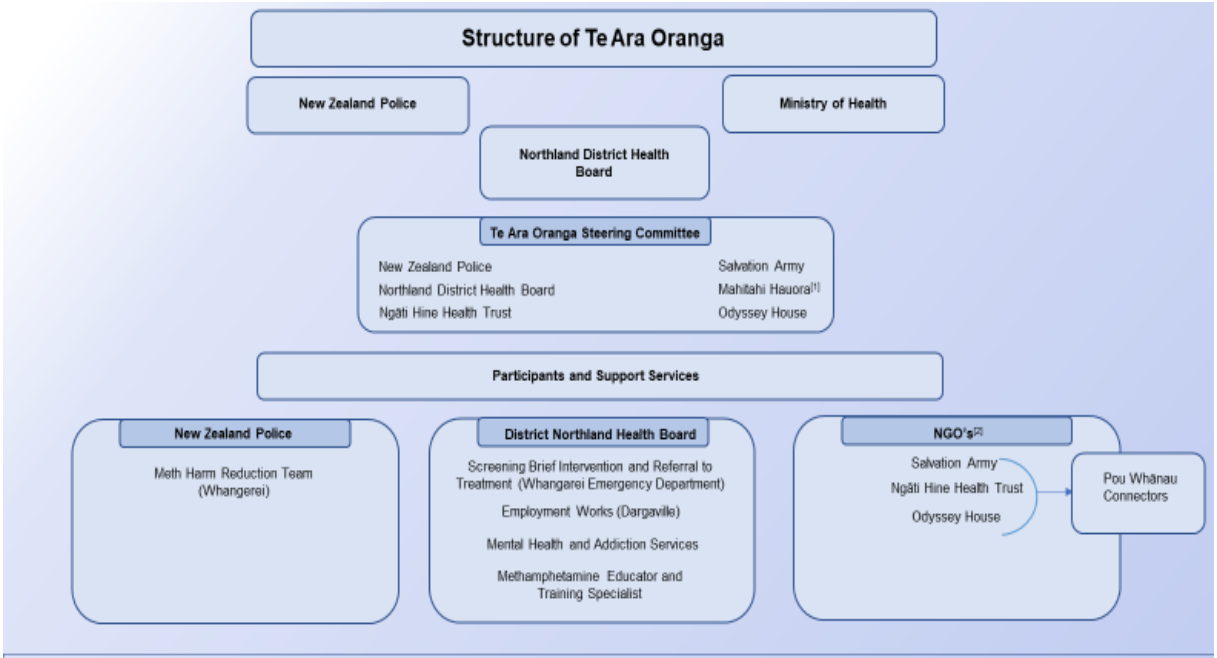
The evaluation contrasts this uniqueness with how overseas health-referral programmes operate, such as the well-known implementation of decriminalisation of hard drugs in Portugal. Te Ara Oranga is seen as a blend of initiatives, building on Police and Public Health programmes, and adapting the Matrix Model, used elsewhere. The section concludes that Te Ara Oranga is uniquely formed in the circumstances of Northland, New Zealand. When understood as being 'born from necessity' 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.

The Outcomes Evaluation (pp 121–159) is a comprehensive analytical evaluation of outcomes using cross-matched Police and Health data. The evaluation utilises administrative data from health and police to track the progress (up to 2½ years) of those referred to Te Ara Oranga. Referrals were compared to those categories of people that were identified as Methamphetamine users but who did not receive a Te Ara Oranga service. It is extraordinarily rare to gain comprehensive data that traces individuals' contacts with Police and Health systems. The evaluation is technically sophisticated and uses leading-edge data analytics to demonstrate a 34% reduction in post-referral crime harm (using the NZ Crime Harm Index, Curtis-Ham & Walton, 2017a).

The Cost Benefit Analysis (CBA) (pp 161–185) considers a simple question: is the amount of impact that Te Ara Oranga demonstrates sufficient to bring about a positive return on the investment to deliver the programme? The cost-accounting is complicated by the lack of detailed understanding of many complex conceptual issues concerning the definition of 'user of methamphetamine'. The concept ranges from casual, moderate, and heavy/dependent users. However, relying significantly on the NZ Drug Harm Nga gangs, and inmates were used to select and document six journey maps that appear between sections of this report. These describe the impacts of long-term involvement with methamphetamine use on users and their families. The materials provide an honest insight into the dislocation experienced by those affected by long-term drug use. By cross-matching to available data it is possible to trace the points in a person's history where a need for support is identifiable and Te Ara Oranga could have been applied to save decades of loss to wellbeing.

Each of the main evaluations observes opportunities that could enhance development of Te Ara Oranga. These are represented in sets of recommendations. Some of these insights have been shared with those running the programme (for example, at the National Disrupting Organised Crime Conference 2020, NDHB training days, and with short reports to Police and Health staff). This sharing followed a pre-agreed principle to 'share as we go'. This process has meant refinement of recommendations and an improvement in the products of the evaluation.

Figure 1: An outline of the formal structure of Te Ara Oranga



Note: see p. 49 for further information.

Summary of recommendations

1. The communities of Northland witnessed the introduction and spread of methamphetamine, and they have strong opinions about how it came about, how to stop it and how they can help. There is much to be learned by an effort to listen to them to refine a programme within a broad Te Ara Oranga framework. It is communities (along with service users and whānau) that recognise the need to address the 'business model' operated by gangs, alongside offering service to those in need. Now the model of Te Ara Oranga has been established and can be properly conveyed, and evidenced, it is appropriate to revise how well the model matches with community need and expectations.

2. A common protocol of monitoring a person's progress would assist cross-agency support beyond the initial referral. There are systemic problems associated with a trial implementation. Current data-sharing protocols significantly impede the partnership (e.g., Police cannot get a formal follow-up on the success or otherwise of their referrals). These issues should be addressed as a part of the revision and expansion of the model elsewhere. A common, clear, consistent cross-agency data protocol would be helpful.

3. Invest in an onboarding assessment that determines the usage status of each person referred to Te Ara Oranga, one that accurately determines if a person is a dependent user or a casual user. (Also see Research Opportunities, recommendation 2.)

4. Driving down demand means destigmatising users and their involvement and role in supplying the drug to others. Political champions and leadership have a role to play in supporting Police's exercise of discretion by supporting law changes that align with the basic principle in operation within Te Ara Oranga.

5. Pou Whānau connectors should have a better-defined role supported with training, advanced-education, and supervision. The role can be expanded across other wellbeing concerns and to aftercare.

6. The social marketing effort to drive down demand is seriously under-resourced. The intent is driven by community-demand as is evidenced by the fact that the particularly good progress is developed using community-supported resource. However, while Te Ara Oranga's governance rightly focuses effort to deliver services, the effort to drive down demand is somewhat neglected.

7. The programme requires a research-informed, actively monitored, evaluated social-marketing campaign. As Te Ara Oranga might be developed elsewhere there are significant economies of scale in developing and supporting Te Ara Oranga programmes at a national level that could co-ordinate and support systems of common operation at a local level.

8. The analysis of the counter-marketing opportunities is normally undertaken as an 'Environmental Scan'. When co-ordinated with market research, designers can then produce effective, sustainable marketing impacts on target audiences.

9. The programme's support infrastructure requires significant attention. Te Ara Oranga are so overwhelmed by an unanticipated demand for their services that they prioritise resource to support treatment needs. However, in so doing their ability to progress, monitor and evaluate the performance of their new efforts is undermined.

10. It is recommended that resource be applied to collate the experiences and current practices of Health, Police and non-government organisations providers in a comparison location. This will assist to better understand the potential impediments to the implementation of Te Ara Oranga elsewhere. Northland responded to crisis and an almost overwhelming need. Te Ara Oranga model applied elsewhere may not be embraced with such support in locations with only an emergent problem.

11. Prioritise research that investigates the trajectory and progression through stages of dependency for methamphetamine use. This is especially important to understand because the lived experience facilitates self-exemption from receiving support and allows harm to the wellbeing of users and whānau.

Recommendations for implementing Te Ara Oranga in new areas

1. There is common agreement that a strong partnership between Police and Health is a key to the successful implementation of Te Ara Oranga. Start with establishing these relationships and build the other important stakeholders into the programme. Maintain this relationship with an active effort at a leadership/management level across the two organisations.

2. Accept that Te Ara Oranga offers service independent of a 'level of addiction'. The concept of addiction is exceptionally difficult to operationalise and any effort to triage referrals based on 'level of addiction' (as is the case in Portugal, for example) would likely undermine the demonstrated success of Te Ara Oranga. Instead, invest in staff training to understand the trajectory of use of methamphetamine, Prochaska and DiClemente's stages of contemplation, and the concept of addiction. Northland maintains a clinical educator to support the training of all staff associated with Te Ara Oranga.

3. Setting up the Matrix Model would be usefully informed by the practices of Northland. Be mindful that not all users are at the same level. It is possible to trigger some users with group sessions and their mixing with heavier users may not be ideal. The protocols established in Northland were refined through experience.

4. The Pou Whānau connector roles are evolving and have been shaped by experience. In Northland they are employees of the Non-Government Organisations contracted to the programme by the DHB. The roles have huge potential when given a proper structure and the NDHB have moved to support this change and develop the potential of these roles.

5. A *Meth Harm Team* must be established within the Police district in which Te Ara Oranga operates. The design may vary but it works within a Prevention-First philosophy. This team must be well-supported by the leadership within the Northland Police District as it challenges a traditional approach to policing drugs and organised crime.

6. Understand that the evidence suggests Police and Health reach different types of methamphetamine users and that this collectively produces a better outcome that either organisation working individually.

7. Be pragmatic about an individual's role in participating in the sales of methamphetamine. It is part of the organised crime business model that all participants are offered an opportunity to participate in the sale and 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. A strong principled approach may limit providing service and constrain the type of support needed.

8. Maintain a protocol of providing generic feedback about the progress of cases. This would be greatly assisted by an active effort to record the progress of individuals from referral, through initial screening, treatment within the Matrix Model, and aftercare. That a person cycles in-and-out of that process is to be accepted as a part of the philosophy of Te Ara Oranga.

9. Understand the need for a longer-term follow-up. Users of methamphetamine are often entangled in complex mix social, economic, cultural and wellbeing deprivations. These may have been degraded over years and may take years to be resolved.

10. The non-government organisations and community resources are the key to supporting an individual to maintain their 'path to wellbeing'. The role of those communities will vary according to location, capability, and resource.

11. Leveraging social marketing and so on requires a complex understanding of the 'target market' and so much can be gained by learning from the resources developed in Northland: the website, branding, billboards, video stories, social media, key messages, and so on. There would be little advantage in inventing new branding and a wasted opportunity if new materials were developed without being informed based on the impact of those that have been trialled.

12. Understand Te Ara Oranga is an evolving capability developed within a particular philosophy. Very capable expertise is brought to the services, and they should be supported trial new ideas and contribute any learnings to a co-ordinated national interest.

Future research opportunities

1. It is important to have the ability to match individual characteristics with individual treatments (especially within the Matrix Model offering) to work out what makes some people progress more successfully than others. This level of refinement is likely achieved through epidemiological analysis of the records of each individual.

2. It would be ideal to record key metrics at the onboarding. These include: 'stage of contemplation', length of use of methamphetamine, measures of addiction (especially those that might be specific to methamphetamine use), level of connection to sale and distribution of methamphetamine, reliance on criminality for lifestyle, employability, life stage, personalisation of referral (e.g., from Police or Pou Whānau connector), connectedness to whānau, and connectedness to iwi (conversely, dislocation from whenua). This list is also a start point for types of information that might be collated for those entering Te Ara Oranga. We believe this list would be further refined through detailed engagement with programme staff, including Police.

3. There is the opportunity to trial the benefits of Conjoint Family Therapy by following the evaluation design established here[1] Conjoint Family Therapy involves engagement with whānau, or surrogates drawn from hapu and iwi. Iwi have expressed their desire to help support those exiting Te Ara Oranga and to participate where they can. A trial of this nature would bring about a better understanding of the mechanisms that keep people out of the Justice sector in the post-treatment period, as well as directly addressing the over-representation of Māori in the post-referral records of criminality.

4. Employment Works services are provided to only a small number of persons referred to Te Ara Oranga. This work has been separately evaluated but not with the types of data used in the overall evaluation. It is certainly reasonable and important to understand the additional benefits of this component of Te Ara Oranga and it, or any other component of the programme can be subjected to long-term evaluation using administrative data.

5. Consider trialling methods to disrupt the business model that operates to distribute methamphetamine in a pyramid-like scheme. A radical approach would be to offer a methamphetamine-replacement or substitute, like systems that operate opiate substitution with methadone. There is no known equivalent to methadone for methamphetamine but the form in which meth is used (i.e., taking orally) could be controlled within a strict protocol and programme. A less radical approach is to issue an evidence-informed warning (via a social marketing or education campaign) to the people of Northland to counter the narrative currently dominated by organised crime.

6. The NDHB recognises that people can be monitored to determine whether they: (1) self-correct, or (2) continue with drug use-related harm (as measured by future levels of criminality). The opportunity relates to tracking and monitoring those who decline a referral. These people could be monitored over a long period. Those that decline help are people identified as not engaging with the programme or at least decline the Police referral. The theory is that these people are on an addiction trajectory, and that they do not recognise the harm that accompanies that pathway (or are already receiving support). The expectation is that those not recognising the potential harm will progress along a pathway that accompanies continued use of methamphetamine.

7. It is especially important that the messaging connected to a referral (or social marketing) is tailored to an individual's current ability to 'self-exempt'. This will only be understood by combination of qualitative inquiry (through follow up interviews with those that refuse, perhaps when they are again identified by contact with Police), and evidence-based inquiry that directly addresses the reasonableness of that self-exemption. There is a potentially powerful, evidence-based message to those that believe that they have their use under control, that people just like them have been subject to long-term monitoring and their loss of wellbeing documented.

[1] The original version of the Matrix Model had Conjoint Family Therapy. The Matrix Model as implemented is the 16-week version of the programme, established after its most expensive components (including Conjoint Family Therapy) were removed.

Overall conclusion of the evaluation

Northland experienced an epidemic-like rise in methamphetamine use, rapidly increasing around the year 2000. New Zealand is now experiencing the spread of the model to other locations and vulnerable communities.

The response from Northlanders was to produce an innovative, well-informed, leading-edge solution. The novel partnership approach puts aside preconceptions and focuses effort to support users of methamphetamine. The core partnership between Police and Health is augmented with community-based organisations and the communities themselves. New services and solutions were formed, trailed, and adapted.

Te Ara Oranga is shown to be effective at identifying users of methamphetamine that can benefit from support. That these referrals lead to improved wellbeing is evidenced in the comparison of outcomes, showing a 34% reduction in crime harm for Te Ara Oranga participants. When understood against the additional cost of the programme the estimated ratio of benefit to cost range between 1:3 to 1:7. The programme is effective and has a positive return on its current investment.

Ari's journey with methamphetamine

Ari (51-year-old Māori male) was married for 25 years. He has three sons, and eight mokopuna (grandchildren).

- Ari is a spray-painter with over 35 years' experience.
- He is currently being held in remand at Ngawha prison for supply of methamphetamine.
- This is the first time he has been incarcerated.
- Prior offending relates to driving offences.

Up until a year and a half ago Ari had smoked cannabis occasionally and was a social drinker. Then his marriage broke down, he had been with his wife since he was 17 years old. His children and mokopuna also moved out of the region. These changes left him feeling 'very lonely' and 'sad'. He had lived his entire life surrounded by whānau.

Ari had always known that he could access methamphetamine, but with work and whānau it was not something that appealed to him. When he found himself alone, he started smoking meth as a 'blocker,' to 'escape' from the reality of the break-up. To further exacerbate the situation, he damaged his shoulder which restricted his ability to work. He feels this contributed to his use because he had so much free time.

Prior to the charges that led to him being incarcerated Ari did not have a criminal history beyond driving offences. He described the past year and a half as one of the worst in his life.

Ari's methamphetamine use was initially 'casual' but as time passed, he found he became addicted and was using every day for the eight months leading up to his initial arrest (during a routine traffic stop police found money, methamphetamine, and a pipe used to smoke methamphetamine. They then confiscated his phone. From analysis of this Ari was charged with supply). The arrest alerted Ari to the risk he was taking, and he actively decided to stop using. This he did by himself by 'disassociating' himself from the town he was living in and the people he was spending time with. A member of the Police Meth Harm Reduction team, in Whangarei, also proved to be instrumental in this decision as he provided him with support and information to stop using. Ari is clear that his dealing was directly related to his use; he dealt so he could afford to use.

Ari feels that his arrest, and incarceration, was an 'intervention'. He had seen that his use was getting out of control. He was 'borderline' estranged from his whānau, and he came close to getting tied up with debts to gangs. In saying this he also noted that he was able to trade his spray-painting skills to cover debts. He never got to the point where he had to sell the few possessions he owned and he maintained an attitude of "if I don't have it (meth), I don't have it." It was always in his mind that many people sold everything, including themselves, and he did not want to go that far as he thought it was "too ugly." If he had got to that stage, he argues, he would have sought help as he knew it was there if he needed it. This knowledge came from multiple visits from the Meth Harm Reduction team in the year leading up to his arrest.

I could see where I was going, and it was not the place for me. The outcome of that path was not what I wanted. All the good things in my life outweighed the life my ongoing meth use could have landed me in. I have too much to lose.

Since being in remand Ari has started an AOD course. He describes it as 'powerful'. When he is sentenced, he hopes that he will get home detention though at this time he does not have anywhere to live. He is considering moving to Christchurch. Here he has a son and mokopuna. He hopes that a new start, in a new city, will help him maintain his abstinence.

What could have changed?

Ari spoke of multiple visits from the Meth Harm Reduction Team in the year preceding his arrest. He chose not to take the help they offered in relation to his drug misuse. Given this it is unclear what else experts could have done, perhaps a visit from the Pou whānau connector if it were someone Ari could respect and relate to.

Process Evaluation

The objectives of this section

This section is intended for those wanting to understand what Te Ara Oranga is, how it was established and what makes it novel. This should be of interest to policy makers, decision-makers, those seeking to establish cross-agency wellbeing programmes, and those wanting to combat methamphetamine use or its distribution. Te Ara Oranga is translated to mean 'a path to wellbeing' and its formation and implementation is a powerful illustration of a wellbeing approach that crosses traditional boundaries of health, social services, and law enforcement.

In addressing the uniqueness of Northland's response to its methamphetamine epidemic we make observations about what worked, what did not work, and what might work in the future. There is a limited set of recommendations which address the alignment of the actual processes of Te Ara Oranga with its planned intent.

Timeframe of the evaluation

This evaluation report is for the period from October 2017 to October 2019, the first two years of the implementation of Te Ara Oranga in Northland.

What this section does not address

This section does not attempt to quantify the effect of Te Ara Oranga or argue for its relative benefits. This type of material and these considerations are presented in the 'Outcomes Evaluation' and Cost/Benefit Analysis in later sections. A previous evaluation of the pilot implementation[2] offers many of the types of quantified outcomes typical in an outcomes evaluation: arrests; gun seizures; reduction in offences; the number of referrals; the waiting times of care, and so on. A summary page of these sorts of measures is appended here (see **Appendix A**). Further details of actions and outcomes are described in **Appendix B**. The outcomes evaluation models over 1200 persons' journeys through meth use and referral to Te Ara Oranga and consider the details of actions and outcomes against appropriate controls. The primary aim of this section remains to determine the nature and process of the implementation of Te Ara Oranga.

The concept of evaluating intra-regional difference is considered but not emphasised in this evaluation except as it impacts on process, resource allocation and consistency of practice.

The period of evaluation ends before the influence of COVID-19. Although COVID-19 impacts on the outcomes data, it plays no real part in the considerations here.

Process evaluation summary

Purpose

- Te Ara Oranga has been operating in its current form since October 2017. After three years, it was refreshed through a review conducted by the programme steering committee.
- The evaluation is given broader licence than usual to examine the opportunities for improvement in processes and suggest 'what success looks like'.

What informs this evaluation

- Crow's Nest Research (CNR) have interviewed 35 professional staff associated with Te Ara Oranga. Interviewees include representatives from all components of the programme: Northland DHB; NGO providers; Pou Whānau connectors; AOD Clinicians; Iwi Liaisons; Frontline Police; Project Manager/Leads; and Project Steering Group Members.

[2] **https://community.northlanddhb.org.nz/NoP/wp-content/uploads/2018/07/180627-Te-Ara-Oranga-First-Progress-Evaluation-Report.pdf**

- In addition, the evaluators undertook 26 interviews with service users and their whānau. Most of these interviews were conducted face-to-face. Service users ranged from low-level users to meth cooks, convicted prisoners and gang-affiliated drug dealers.
- CNR have gathered indicator data, international literature, and other reports to support the understanding of the unique features of Te Ara Oranga. Sets of Informal interviews preceded the semi-structured interviews both in Northland and in Wellington.

Te Ara Oranga is a unique programme

- Te Ara Oranga presents 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 with partnerships between agencies (Police and Health), NGOs (e.g., Salvation Army, Ngāti Hine Health Trust, Odyssey House) and other service providers (Mahitahi Hauora, Salvation Army Bridge).
- The underlying model recognises a blend of medical/health harms and justice/social harms. This blend makes Te Ara Oranga quite different from other initiatives that prioritise drug addiction as a medical problem. Like other initiatives, Te Ara Oranga rejects an approach that treats drug use as straightforward criminal offending.
- Clinicians and service providers achieve consistency of service through training in an adapted Matrix Model and in Motivational Interviewing.
- Te Ara Oranga has introduced new professional roles: Police's Meth Harm Reduction Team, Pou Whānau connectors; Emergency Department Health Promotion; and Social/Employment Services.
- A key feature of Te Ara Oranga is that it offers service independent of an assessment of the severity of addiction, as early as possible in terms of a person's willingness to receive support.
- Service is offered without delay, usually within 48 hours. Barriers to service are removed. Repeated service is offered to those who withdraw or cycle in and out of use.
- There is no court-enforcement prescription to engage with the programme. Service users participate by referral, from many different sources.
- Pou Whānau connectors have an essential part in supporting referrals and providing encouragement to receive support.
- Te Ara Oranga has deliberately acquired the best aspects of other, similar social programmes. Examples of Police programmes include Whāngaia Ngā Pā Harakeke (Family Violence) and Te Pae Oranga (Community Justice Panels). There are core features of public health initiatives, such as the long-standing Smokefree campaign. The programme has established dedicated social marketing that was co-designed with meaningful engagement with iwi/communities.

Te Ara Oranga changes mindsets and practices

- Te Ara Oranga integrates the activities of otherwise separate social responses (particularly of Police and Health) to the multiple harm types arising from a single cause: meth use.
- Te Ara Oranga has redefined the professional activities of some professional staff (especially in Police who formed the new Meth Harm Reduction Team) and clinical staff (adopting a 16-week Matrix Model). All are supported with dedicated education and professional development.
- The communities of Northland have rallied around the initiative to give it much greater impact than could be achieved without this support. The model highlights the community's willingness to be involved. The achievement of bringing the community along highlights the programme's core philosophy and is a key measure of Te Ara Oranga's success.
- Te Ara Oranga technically aligns with a model of addiction that is also leading edge (even though this may be accidental and unrecognised).

The 'economics of methamphetamine' creates a marketed product

- The relative price of meth drives its profitability. In the USA a kilo of refined meth will cost $5k. In New Zealand that kilo has a street value of $160k. A *point* (1/10th of a gram) will cost between $40–100 and is the typical dose for a user. A gram costs between $400–500 but a usual sale quantity is a $100 bag.
- Meth use in Northland (and now, elsewhere in New Zealand) is driven by an aggressive product marketing by organised gangs. Gangs can exploit the vulnerabilities of a population 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.
- It is likely that Northland was deliberately targeted by organised crime as the testing ground to establish a wide methamphetamine market.
- Users of meth are almost always sellers of meth (note the point about multi-level marketing). For some people, the sale of meth has taken over from the cultivation of cannabis as an alternative income.
- The wide involvement of users in the sale and distribution of meth makes identification of higher-end suppliers more difficult, creates a tension for police exercising discretion with referrals and implies a need to address the *demand to participate* using education or social marketing (or other means).
- Some individual users of meth support their addiction with low-level criminal actions, such as shoplifting. As such, meth use is a driver of crime, along with other social harms (McKetin et al., 2020).

The programme is still evolving

- A pre-existing cross-agency sharing of professional insights into social problems formed the Social Wellbeing Governance Group (SWGG). This group was instrumental in obtaining initial funding for Te Ara Oranga and giving it licence to try new things, support the initial evaluation, and demonstrate sufficient potential to expand into its present form.
- Proponents of the programme acknowledge that it has developed across time and that with hindsight much has been learned about how to make such a programme successful. These insights are collated and presented in this report.
- All parties acknowledge the need to revise and refocus the programme, with this evaluation programme needing to inform this process.
- Te Ara Oranga currently bears the cost of development of all intellectual property, e.g., 'Methfree' billboards, programme logos, and website. There would be significant economies of scale for social-marketing activities if the programme were rolled out nationally.
- Te Ara Oranga does not neatly align to a traditional model and seriously challenges practices within NDHB and Police. Rotation policies for Police, for example, may effectively encourage those succeeding in their roles to be promoted elsewhere. There is loss to programme continuity through this process.
- To understand the normalisation of using methamphetamine and any change in the attitudes within a community requires active monitoring (usually, through surveys). This is not occurring at present. Other social-marketing programmes embed this activity within the programme design.
- Te Ara Oranga was developed because of the coincidental alignment of like-minded staff from many different agencies who together possessed a unique capability— and the ability of these people to establish professional connectedness is the 'magic' that makes the programme successful and unique. Te Ara Oranga has been developed pragmatically and much of the institutional knowledge is carried, passed on and developed from those who first developed the programme.
- Proponents of the programme routinely recognise a concern for funding continuity that impacts on their perception of the value of their own contributions. This is especially true with the NGOs and others delivering the new, unique services. There is genuine concern for funding continuity magnified by an acknowledged turnover of staff and a consequent loss of some project momentum.

Can Te Ara Oranga be rolled out elsewhere?

- Widespread rollout will afford the opportunity to provide a common administrative infrastructure to share elements such as website development, programme monitoring, programme documentation, training opportunities, market research, and the like.

- Northland has developed a unique combination of people, partnerships, and responses to the problem of meth use. The solution was developed in Northland for Northland. The rollout of Te Ara Oranga to other areas of New Zealand will need to adapt and develop the core partnerships that led to the emergence of Te Ara Oranga's model. These will be different in each community, and it should not be presumed that a meeting of minds will occur simply by bringing different parties together.
- A key to the success of Te Ara Oranga is that those involved in the programme adopt a client - centred approach. This remains a challenge for some aspects of policing where there is retained responsibility within the exercise of a discretion not to charge a person found with even small quantities of meth.
- A kaupapa Māori approach is essential in places with a large Māori population. Conjoint family therapy or a properly co-designed kaupapa Māori approach that involves whānau (or iwi-derived surrogates for whānau) is called for but not trialled within Te Ara Oranga.
- Many aspects of Te Ara Oranga illustrate what is possible but if they are to succeed in Northland, or elsewhere, they need to be properly resourced over a long-term, with supporting structure like those operating in other domains, such as tobacco control.

Methamphetamine in Northland

What is Te Ara Oranga?

Te Ara Oranga is a joint initiative between Police and Northland DHB, in partnership with Community-based Providers (Salvation Army, Odyssey House and Ngāti Hine Health Trust, and others). The now multi-award-winning programme[3] is aligned to Cabinet decisions relating to measures to break drug supply chains and reduce harm associated with methamphetamine and other drugs. The translation of Te Ara Oranga means, *the way (or path) to wellbeing*.

The programme was initiated in 2016 with a pilot programme developed with funding from the Proceeds of Crime Fund sourced through the Criminal Proceeds (Recovery) Act 2009. The initial 12-month funding constructed an establishment phase (new treatment options/referral pathways) and recruitment of health and police personal. Further funding of $4m was introduced in Budget 2019. Te Ara Oranga became fully operational from October 2017.

[3] *Te Ara Oranga* won the Cedric Kelly Supreme Award at the 2018 Northland Health and Social Innovation awards, in November 2018.

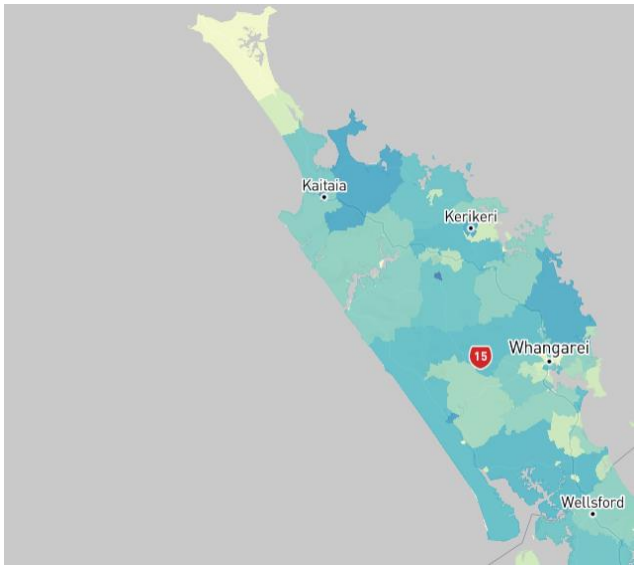
Te Ara Oranga won the Supreme Matua Raki Workforce Innovation Award in September 2018.

Te Ara Oranga won the Excellence in the generation, application and development of evidence at the 2020 Evidence-Based Problem Oriented Policing Awards, held at Te Papa in March 2020.

Northland

Northland is in the uppermost region of the North Island, New Zealand. Northland is known as *Te Tai Tokerau* in Māori, the region is New Zealand's least urbanised, with only around 50% of the population of 194,600 (estimated for 2020) living in urban areas. Whangarei is the largest urban area, with a population of 52,600 (at June 2019) (see Jackson & Pawar, 2013 for detailed demographics and projections).

Figure 2: A map of Northland District boundary being just north of Wellsford



Notes: Three main centres of Whangarei and Kaitaia are represented though the smaller towns of Kaikohe and Dargaville (50 minutes by vehicle west of Whangarei are not). The city of Auckland is 2½-hour drive south from Whangarei.

It is reported as one of the poorest regions in the country and had, during the period 2017-19, the highest rates of methamphetamine use. However, Northland has been through a period of expansion and unprecedented economic growth since 2012 (Infometrics, 2020). Figure 3 below offers the incomes of Northlanders by band, compared to the rest of New Zealand. Examination of these data reveal Northland over-represents people living with $10–30,000 per annum but under-represents those with higher incomes (above $70,000, around 11.5%). The average earnings for 2019 are $55,391. In Northland it is more common than elsewhere in New Zealand to find people living with modest incomes with a median income reported as $24,800.

The region's population is largely concentrated along the east coast. By comparison to the whole country, Northland has around 5% of the land area, 4% of the population and 2% of the GDP (at $7887m or $49,000 per capita. There are roughly twice as many Māori in Northland (around 33%) compared to the national average (15.1%). Across Northland, one-third of residents are Māori. North of Kawakawa, that figure is 43%. It is reported that half of the clients in alcohol and other drug (AOD) treatment across the region are Māori (Priest & Lockett, 2020).

Figure 3: The incomes of Northlanders compared to the rest of New Zealand highlighting that they are over-represented in the band earning less than $30,000 per annum

	2018			
	Northland Region		New Zealand	
	Number	% total	Number	% total
$5000 or Less	16962	12.0%	488637	12.9%
$5001-$10000	7131	5.0%	177423	4.7%
$10001-$20000	32553	23.0%	637479	16.9%
$20001-$30000	23802	16.8%	516768	13.7%
$30001-$50000	27723	19.6%	763530	20.2%
$50001-$70000	17007	12.0%	543981	14.4%
$70001 or More	16284	11.5%	648537	17.2%
Not stated	0	0.0%	0	0.0%
Total	**141456**		**3776352**	

Sourced from Infometrics, **https://ecoprofile.infometrics.co.nz**.

The 2019 United Nations Drug Report estimates that in 2017, roughly 0.6% of the global population aged 15–64, or 29 million people, had used amphetamines (amphetamine and methamphetamine) in the past year. The New Zealand Health Survey (2017/18) only gives an indication of the change in methamphetamine consumption since the last comprehensive Mental Health Survey, *Te Rau Hinengaro* in 2006. The New Zealand Health Survey does not differentiate frequency of use in relation to illicit drugs (marijuana and amphetamine) and only asks whether they have been consumed in the last year.

Nationally, the use of amphetamine has increased from 0.7% of the population in 2011 to 1.0% of the population in 2018. There was a 0.3% increase between 2017/18 and 2018/19. The use of alcohol, cannabis and methamphetamine is significantly higher for male, Māori and people in high decile areas. The 35 to 44-year cohort were the highest users of amphetamine which contrasts with cannabis that is more frequent in a younger cohort.

Wastewater analysis

New Zealand first trialled and then implemented a national monitoring of wastewater to detect the presence of illicit drugs in 2016, slightly before the implementation of Te Ara Oranga. This monitoring is used to determine the size of the market and the variability in consumption over time and locations. Northland was part of the original trial.

During the evaluation period (October 2017–October 2019), wastewater screening results indicate Whangarei has a significantly higher than average incidence of methamphetamine use compared with other New Zealand locations. Initial results from Wastewater samples taken seven days per month for nine months showed Whangarei levels twice those of Auckland and 3–4 times those of Christchurch.

Wastewater analysis has enabled accurate drug use comparison with countries that use the same scientific method, which is beneficial for differentiating actual from perceived problems. Use in Whangarei was higher than other European nations but perhaps not Australia. Results indicate a seven-day point prevalence of 2% for Whangarei.

There is a perception that ‘When the meth [harm reduction] team turns up the [indicators in the] wastewater [analysis shows] consumption drops’. Then it starts to climb again. The New Zealand approach to wastewater analysis is a true innovation that has significant scope for advancing our understanding of use and consumption patterns, particularly when it is combined with further research. However, it is not a replacement for the much-needed research of why use of methamphetamine is at its reported levels. For now, the points to take from it are straightforward. First, Northland is observed to have the highest level of consumption per capita. Second, it is not straightforward to monitor that change across time to see effects related to a programme like Te Ara Oranga.

Quick facts about methamphetamine

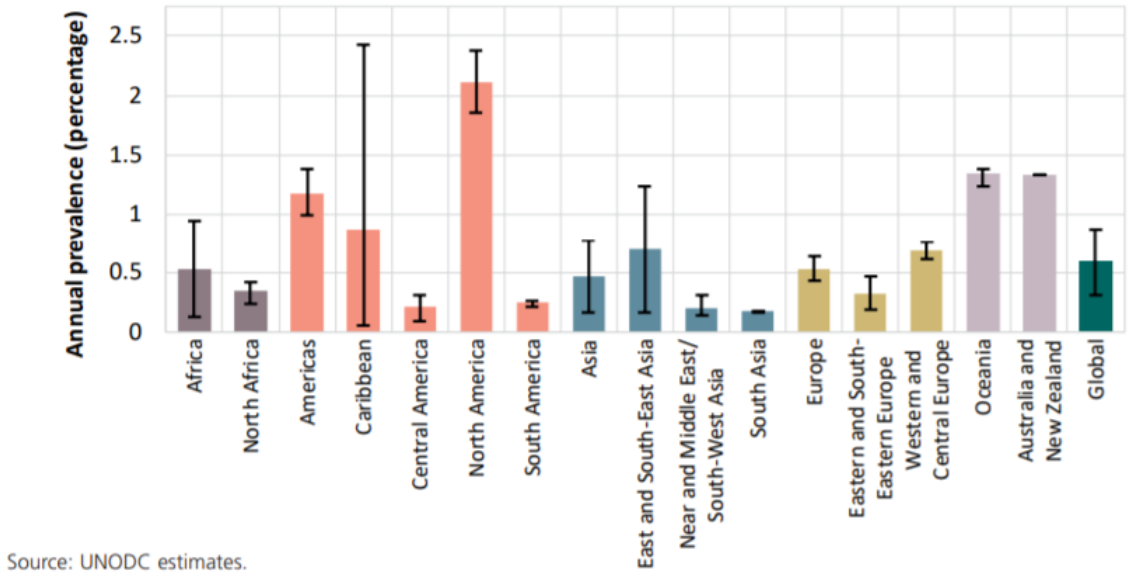
1. Methamphetamine (technically N-methylamphetamine) has four common forms: tablet, crystal, base (also referred to as paste) and powder. In New Zealand, the most common forms are crystal and powder.
2. Methamphetamine is also known as *'white', speed, pure, P, burn, goey, crank, meth, crystal, ice and yaba.*
3. Methamphetamine is generally heated, and the vapours inhaled. It can also be injected after being dissolved in water (but this is uncommon).
4. Crystal methylamphetamine, often referred to as 'P' or 'white', is a highly purified form that is crystalline in appearance.
5. Due to slight differences in chemistry, methamphetamine produces a stronger nervous system response than amphetamine.
6. Short-term effects of use may include sweating, headaches, insomnia, anxiety, and paranoia.
7. High doses can result in blurred vision, hallucinations, tremors, and stroke.
8. Long-term use may result in severe dental problems, reduced immunity, high blood pressure, depression, impaired memory and concentration, deficits in motor skills, aggressive or violent behaviour, anxiety, cardiovascular problems, and kidney failure.
9. In New Zealand methamphetamine is a class A drug under the Misuse of Drugs Act, having been reclassified as such in 2003. Manufacturing, importing, dealing and possession for supply can lead to a life sentence.
10. Possession of 5 g of methamphetamine (around a teaspoon) is enough to warrant a conviction for possession for supply.
11. Importing of precursors pseudoephedrine and ephedrine without a licence can attract jail sentences of up to eight years.
12. Possessing a pipe or utensil for smoking methamphetamine is also an offence and can result in a one-year jail term or a fine of up to $1000.
13. Harm from meth use might be acute within six months or accumulate over a period of six or more years.
14. Withdrawal is relatively easy to manage compared with alcohol (which can be fatal) or other types of addiction treatments such as Heroin. The most prominent signs and symptoms of methamphetamine withdrawal are disturbed sleep, depressed mood, anxiety, craving and cognitive impairment.
15. There is no equivalent to methadone for methamphetamine, and none is needed. Most meth users report stopping meth is relatively easy, staying stopped is extremely hard.
16. New Zealand and Australia have the second highest rate of methamphetamine consumption per capita in the world, second only to North America.

How does New Zealand compare to the world?

In 2013 the United Nations World Drug Report ranked Australia and New Zealand the highest overall per capita rate of *illicit drug use*, when compared to other OECD nations. The reason was the use of Amphetamine type stimulants (ATS). Since that time, the quantity of seizures, and purity of methamphetamine product have increased,[4] with the source countries being North America, Mexico and Hong Kong. Our relative ranking for the 12-month point prevalence of methamphetamine use (cf illicit drug use) is surpassed only by North America (estimated to be 2.1%) so New Zealand (when combined with Australia) now ranks second in the world (1.2-1.4%), though previous surveys have shown prevalence rates as high as 2.2% (2007/08 NZ Alcohol and Drug Use Survey).

The relative 12-month point prevalence for methamphetamine use are presented in Figure 4, sourced from the 2019 United Nations Drugs Report 4: stimulants). The estimate is 'qualitative', the UN Report identifies an increasing use of methamphetamine in New Zealand from 2013–2017.

Figure 4: The 12-month point prevalence estimates for methamphetamine use, for difference regions



Source: United Nations Drug Report, 2019.

Methamphetamine and amphetamine are not the same drug. Crystal methamphetamine is not practically the same as the powered variant (though these can contain the same drug with equivalent chemistry). In practice the act of diluting the powered form gives it a different constitution than crystal meth.

[4] Purity of 31 street level samples (ranged from 68-80%, with a mean purity of 73%. Purity of 41 supply level samples (>1g) ranged from 3–81% with a mean purity of 71% (*Tackling Methamphetamine: Progress Report*, 2015).

The drug has commonly used names but in New Zealand it is complicated by having a unique title 'P'. The use of the expression 'P' is a shortened form of the term 'Pure' which was a common slang term when it first hit the New Zealand drug scene around the year 2000. At the time, the most common form of methamphetamine available was heavily cut (diluted), usually with dextrose or lactose, and sold as 'speed' i.e., it was a white powder, usually snorted. Because most drug dealers and users have limited chemistry knowledge, in comparison to 'speed' (which they knew was diluted and inferior), crystal meth was 'pure' methamphetamine. Hence the name *Pure*, then shortened to *P*.

The price of methamphetamine in New Zealand is reported by users to be currently reducing, but to an astonishingly high median price of $500 NZD per gram. New Zealanders pay over thirty times the price of equivalent product in the USA.

> "We pay top dollar. So, if you want a good return on your money, you will sell it to New Zealand." (National Drug Intelligence Bureau)

For example, a kilo of methamphetamine in the US is around US$5000. A kilo in New Zealand is $160,000." Each gram is cut into useable doses which range from .05 (1/20th) of gram through to .75 (3/4th) of a gram.

The relative price of 'P' means that New Zealand is an attractive opportunity for organised crime to import, market and control. The UN Drug Report identifies a price per gram in New Zealand, in US dollars, with a range $212–$992 compared with a price of $70 (range: $23–$115) per gram in Canada and around $75–144 per gram in the United States (range: $10– $400). They conclude that the making and smuggling of methamphetamine from countries in North America to New Zealand is highly lucrative.

The difficult concept to reconcile is how one of our poorest regions affords the highest price of methamphetamine in the world. The answer lies in the consideration of relative wellbeing. The poorest regions in New Zealand still create a 'lucrative market' in a world market.

A non-abuser should be good for hours taking .10g, that is 1/10th of a gram.

Smokers will typically put .15g to .25g in a bowl to smoke. That will get two people high after five or six hits each.

Shooters will do more or less, depending on what they have available. Many won't do a small shot that they think won't make their ears ring and eyeballs vibrate for 30 seconds.

A .15 shot (i.e., injected) should be plenty of good dope to get you up and running around … but a regular shooter will feel he has cheated himself and will wish he had done more. .People doing .75g or more is not too uncommon, but I've never really figured out what they were trying to prove …

Source: Anonymous response to the question posted on QUORA

Portugal

In 2001 Portugal decriminalised possession of all drug types for personal use. The now well-recognised legislated changes departed from policies elsewhere such as Sweden (Ministry of Health and Social Affairs, 2020) because Portugal's legislation made no distinction between hard drugs, or drug types. All drugs, including methamphetamine were de-criminalised. However, Portugal's shift in direction was in response to a recognised heroin epidemic. Its investigative efforts suggested that the best approach to address the epidemic was to construct a health referral model. They concluded that "the most substantial barrier to offering treatment to the addict population was the addicts' fear of government officials as a result of criminalization" (Greenwald, 2009).

Portugal established the CDT (Comissões para a Dissuasão da Toxicodependência), sometimes called the Dissuasion Commission. The CDT is not a court but can make recommendations for fines or treatments but are when issued, they are not 'infractions of law'. There is at least one Commission in each of Portugal's 18 districts. The CDT comprises a panel of three members: two from the Ministry of Health, and one from the Ministry of Justice. A typical, CDT will comprise a social worker, psychiatrist, and an attorney. The proceedings are informal with the panel not dressed in the usual formal attire of a court. Everything is done to remove the stigma of drug use and emphasise the health referral pathways. Commission hearings deliberately avoid all appearance of a criminal or any court-like approach. Only around 15% of commission rulings offer any kind of sanction, including a referral to treatment.

The pathway for a person detected using or possessing drugs in Portugal involves citation, by a police officer, that represents a summons to a Commission. The response is relatively immediate, the person cited must appear before the Commission within 72 hours. They cannot be arrested at the time of the citation for merely using or possessing drugs.

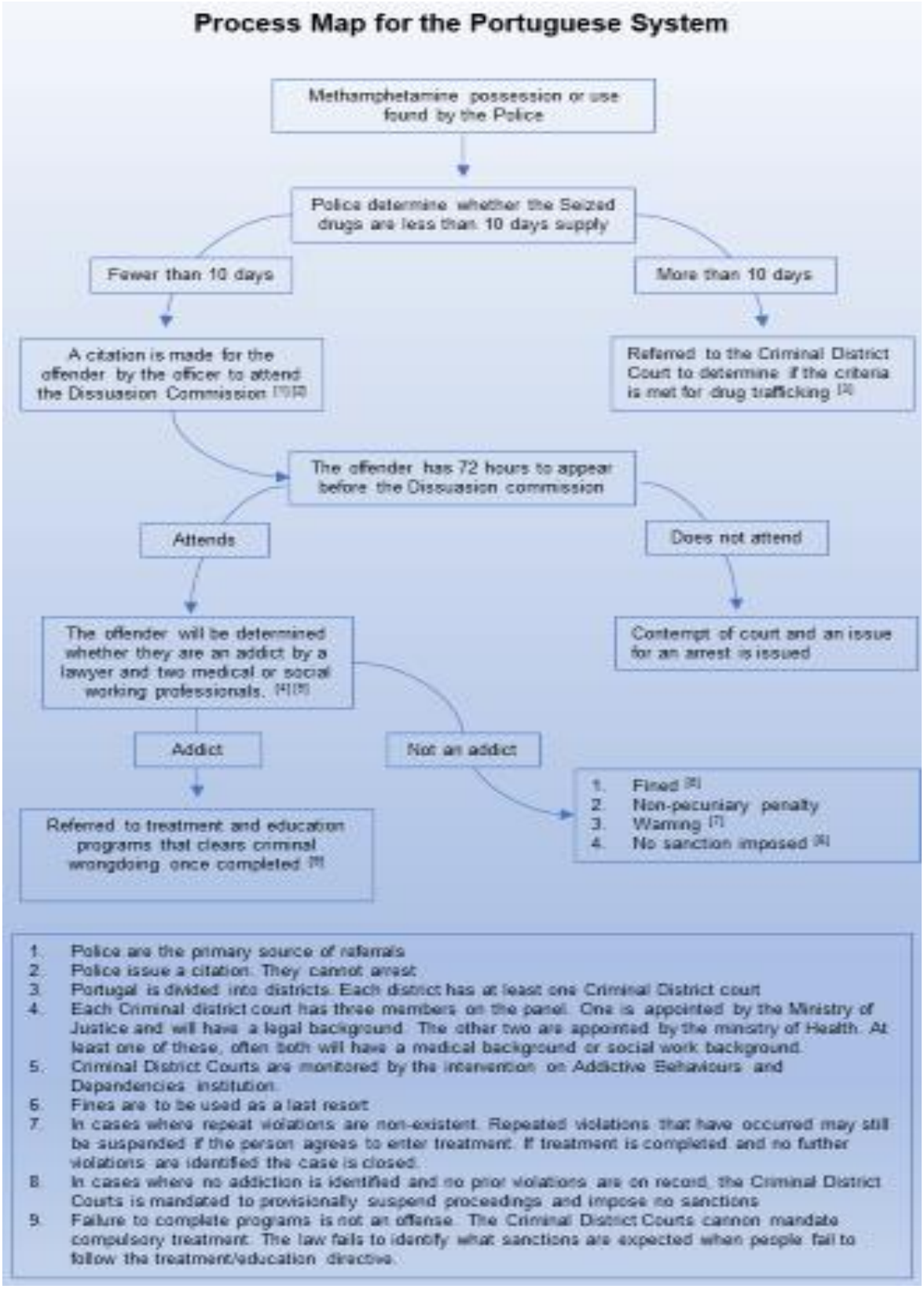
The Commission has a first and primary responsibility (under article 10 of the decriminalisation law), "to gather the information needed in order to reach a judgment as to whether he or she is an addict or not, what substances were consumed, the circumstances in which he or she was consuming drugs when summoned, the place of consumption and his or her economic situation" (Greenwald, 2009).

The Portuguese model requires that a person be identified by citation from police action (or exceptionally through a GP referral). The key issues are whether a person is an addict, what role they play in drug distribution and the circumstances of that person's use. The prescribed acceptable amount in possession before punitive measures are incurred is "10 days usage". This is a legislated definition that demarcates user and supplier and is unique to Portugal.

Addicts can be suspended from of a right to professional practice, banned from visiting high risk locales (nightclubs), banned from associating with specific individuals and restricted from undertaking international travel. In practice, more than most appearances before the Commission result in no sanctions being imposed (Stevens et al., 2019). A health referral is made once a person either accepts they are an addict, or it is determined that they are by the Commission.

Figure 5 below offers a flowchart of the decision-making derived from the description of the process by Greenwald (2009) but considers a person being caught in possession of methamphetamine. For a methamphetamine user, 10 days' usage could be well less than a 1g but would likely not exceed 5g. In New Zealand, this amount, until recently attracted a likely sentence of 2 to 4.5 years' imprisonment. The Court of Appeal that has adjusted the sentence guidelines to community-based sentence or up to 4 years imprisonment (*Zhang v R* [2019] NZCA 507, 2019).

Figure 5: The pathway a meth user might take through the Portuguese health referral system



Notes: The graphic is designed to illustrate the key decision-making points that are explicit in legislation in Portugal but operate within a discretion or professional judgement in New Zealand.

The determination that the individual is an addict before a health service can be provided is the most confronting because of a key fact recognised in (Bernstein et al., 2007):

> According to the National Household Survey on Drug Use and Health, only about 1 in 10 individuals in the United States with a substance use disorder receive treatment. Of those who do not receive treatment, 95.5% do not recognise they have a problem. (p. 1073)

Bernstein et al calculated the effect from the 2013 National Household Survey on Drug Use Survey but from our estimation the statistic has not altered in the most recent 2019 survey. New Zealand has not had a regular monitoring of drug use in any kind of similar survey.

What are the differences between Te Ara Oranga and Portugal?

Te Ara Oranga offers service independent of an assessment of the severity of addiction, as early as possible in terms of a person's willingness to receive support. There is no need for a person to acknowledge they are addicted, just they that might benefit from some help because methamphetamine is affecting their wellbeing.

This referral may come from an initially unwelcomed approach from Police, through their active efforts to locate users of methamphetamine and refer them to treatment. There is no such effort within the Portuguese model, it responds to identifying users through usual means.

Like Portugal, Te Ara Oranga tries to ensure service is offered without delay, usually within 48 hours.

Barriers to service are removed in Te Ara Oranga but several remain in Portugal. In fact, it is an uncommon response in Portugal to refer to health treatment as more than most cases are 'suspended' without further action by the Commissions.

Within Te Ara Oranga, repeated service is offered to those who withdraw or cycle in and out of use (usually without consequence). That is, failure to abstain from drug use or failure to complete the programme does not automatically expose the service user to criminal penalty, as might be the case with a court-imposed bail condition or sentence condition elsewhere.

The role the person plays in the distribution of methamphetamine remains a difficult problem in Te Ara Oranga's partnerships. In Portugal, the legislation specifies *for personal use* and gives it a definition: 10 days' supply. Anyone found holding less than this amount allows the health referral model; over the amount may lead to criminal penalties. In Te Ara Oranga this distinction is left entirely to discretion of Police.

The three key issues facing any health referral model

Three issues lie at the heart of Te Ara Oranga and any drug-harm reduction health referral model:

1. First, those provisioning service (including police) must apply criteria to identify a person's location on a drug dependency trajectory, perhaps labelling them as addicts, possibly being supported by screen questions or another test to do so.

2. Second, harm is divided between that done to the user (through use and long-term addiction) and that done to others (through supplying, dealing or other activities) and so criteria must be established (formally as in Portugal) or informally (through Police exercising a discretion in New Zealand) to guide different outcomes and actions depending on what sort of harm is being addressed.

3. Third, an assumption is made that individual users may at some point (perhaps with encouragement from family or authorities) recognise harm from their drug use and comply with referrals for the benefit of their own wellbeing.

The method of this process evaluation

We interviewed 35 professional staff associated with Te Ara Oranga. Interviews include representatives from all components of the programme: Northland DHB; NGO providers; Pou Whānau connectors; AOD clinicians; iwi liaisons; frontline Police; project manager/leads; and project steering group members. We did not reach saturation, that is we did not find ourselves in the same conversation as every participant offered a unique perspective on their professional practice. The same is true for the 26 interviews we undertook with service users and their family/whānau. Each has a unique story. However, common themes do emerge related to the question design that is appended (**Appendix C**). Interviews were conducted by ZOOM during the March 2020 COVID-19 lockdown that imposed restrictions on travel. After restrictions were lifted, we conducted face-to-face interviews with most service users.

This process evaluation does not attempt to quantify aspects of the outcomes of Te Ara Oranga. We do not consider the opinions of many outweigh the insights of one, though we will sometimes reference the level of agreement across a theme. The comparisons between conversations takes the pivotal role in the analysis of the materials. We have deliberately structured this section to reveal these insights against the framework of Te Ara Oranga's theory of operation. As such we focus our efforts to explain why Te Ara Oranga is unique and why it needs to be, not whether this uniqueness is judged as 'good'. Whether or not Te Ara Oranga is effective is a question for a complex outcomes evaluation presented in the next section. Whether or not it is worthwhile derives from a Cost/Benefit analysis that leans heavily on the understanding of the complexity of impacts methamphetamine use has on people's lives (pp 161–185). Notwithstanding, it is worth noting at the outset, there is merit in Te Ara Oranga's unique approach that is drawn out and evaluated, independent of the other considerations because it is different, encompassing and an illustration of what is possible.

We have gathered indicator data, international literature and other reports to support understanding the unique features of Te Ara Oranga. We have reviewed materials, websites, videos, and documentation. Sets of Informal interviews preceded the semi-structured interviews both in Northland and in Wellington. Some insights came from everyday people of Northland who were willing to simply share stories and experiences of the destructive effect of methamphetamine. Follow-up interviews were conducted with key individuals for fact-checking and clarification on processes.

The mistakes of detail in this section remain our responsibility, arising through our misunderstanding of processes, clinical or professional practice, intent, or actions. Wherever possible we have checked the information we received against other sources of evidence.

Te Ara Oranga's logic map

> "I thought I would die an addict, and as long as I was high at the time I wouldn't have cared."

Te Ara Oranga's logic map was developed as part of the business case. It is presented as Figure 6 below. While it is the first logic map for Te Ara Oranga, and is due for revision, it reflects the awareness of a need to co-ordinate a response to the complex difficulties of addressing the methamphetamine problem in Northland. The logic map presents the key partnerships and the workstreams, along with the actions and expected outcomes.

The logic map is an essential component to any evaluation (Centre for Disease Control, 2020) because it describes the intention of the programme. It is also important to those who might seek to establish a Te Ara Oranga model elsewhere.

The aim of Te Ara Oranga

The overall aim is stated as:

> To reduce the supply and demand for methamphetamine in the Northland region.

The overall aim probably better represents the intent of the partnership between Police (driving down supply) and Health (addressing demand) than that associated with a clear logic model. It is an ambitious aim, but it is too inclusive so that almost anything done to address methamphetamine would fall within its remit.

The linked objectives are to:

(1) develop and maintain intersectoral relationships

(2) address enforcement

(3) address harm reduction

(4) provide community and whānau resources

(5) provide SBIRT and treatment

(6) develop Intelligence and data collection.

These listed objectives are important for any process evaluation.

Figure 6: The logic map (or model) of Te Ara Oranga as it was originally conceived, setting up the SBIRT, Employment Works, relationships with NGOs to deliver the Matrix Model, Pou Whānau connectors and Meth Harm educator

Project Aim	TO REDUCE SUPPLY OF AND DEMAND FOR METHAMPHETAMINE IN THE NORTHLAND REGION						
Project streams	Establish governance and Implement Te Ara Oranga via Intersectoral Collaboration	Police: Law Enforcement and Reducing Harm in the Community		Support Communities	Provide Better Routes into Treatment		Information & Evaluation
REDUCING THE AVAILABILITY OF METHAMPHETAMINE IN THE NORTHLAND COMMUNITY AND INCREASING THE NUMBER OF PEOPLE WHO HAVE EITHER REDUCED OR STOPPED METHAMPHETAMINE USE							
Objectives	Develop and maintain Intersectoral Relationships	Enforcement	Harm Reduction	Community & Whānau Resources	Screening & Brief Intervention	Treatment	Intelligence & Data Collection
Actions	• Establish intersectoral steering group • Hold regular steering group meetings	• Reduce the supply and distribution of Metham-phetamine in the community	• Reports of concern and onwards referrals to appropriate agencies	• Community engagement reference group • Community consultation hui • Community education • Develop community resources • Whānau support groups	• GP Resources • Alcohol & Drug Helpline (ADHL) • Meth Helpline • Screening & Brief Intervention in Emergency Department	• Train the trainer • Whānau Support Group • Pou Whānau Connectors • Detox beds • Employ-ment support • Metham-phetamine AOD practi-tioners	• Progress report • Workforce development • Systems for recording and reporting data • Process evaluation
Outcome	REDUCED SUPPLY OF AND DEMAND FOR METHAMPHETAMINE USE IN THE NORTHLAND REGION						
	Successful Implementation of Te Ara Oranga	Reduction in supply and community harm	Provision of community ini-tiatives reflects community voices	Previously unengaged consumers receive and participate in services from the Te Ara Oranga programme	Initial evaluation, learnings and recom-mendation		

The actions associated with the objectives are well-formed, and the outcomes are reasonable, clearly articulated, and measurable. However, these objectives lack actual quantification (cf reduce the volume of methamphetamine users by 25%). It would be better, had monitoring been installed at the outset to support the programme, to report against something like, "the prevalence of people reporting a willingness to try methamphetamine when offered", as this is a genuine measure of reducing demand, like those used in tobacco control (e.g., Year 10 Snapshot survey, part of the Global Youth Tobacco Series). Other examples of demand reduction indicators can be found in the now defunct, meth action plan (see Figure 7 below).

Figure 7: The now defunct Meth Action Plan of 2012 that set measures of success related to demand reduction of methamphetamine

The main indicators for methamphetamine demand reduction include:

Indicator	Sub-indicator	Desired direction of change
Prevalence (12 months)	Users as a percentage of the population in the last 12 months	Successful demand reduction and problem limitation measures lead to a decrease in percentage of population using
Prevalence (used at least monthly)	Users as a percentage of the population	Successful demand reduction and problem limitation measures lead to a decrease in percentage of population using each month
Prevalence (young users)	Young users (16-24) as a percentage of the population	A reduction in younger users is likely to result in fewer new users overall and an aging user population
Age of user	Mean age of using population	Successful demand reduction measures lead to an upward shift in the age of the using population, as this suggests there are fewer new people using
Users who report reducing their use	Users who report reducing their use in the past six months	Lower mean number of days of use in the past six months

The main problem with the logic model

The problem with the logic model is that it does not distinguish a business-as-usual approach (recognised by all, at the time, to be failing) with the new actions of Te Ara Oranga.

There is no doubt that Police have always tried to reduce supply of methamphetamine, the Northland District Health Board have always provided treatment to those who need it and community partners (e.g., Ngāti Hine Health Trust, Salvation Army, Odyssey house and others) have always provided whānau support, community resources and the like. Without a dedicated resource to monitor demand reduction (with community survey for example) it is unlikely that any such indicator would feature well within a regional initiative's logic model, and certainly not one that was set up with only a year's funding.

The logic model does not reflect Te Ara Oranga's model

The difficulty with the logic model is not in the stated aims but in the details of what is done and how these actions are measured (cf Figure 7 that represents a previous set of measures in the Meth Action Plan). The logic model does hint at the new actions: the introduction of Pou Whānau connectors; AOD practitioners, and employment services. A charitable interpretation of the intent of the logic map is required, especially recognising that the whole approach is new and was developed across its first year. The problem remains, at least for anyone examining it from the outside, or anyone looking to adopt the approach, that the logic map does not easily distinguish what is unique, new, and special about Te Ara Oranga's model.

Rawiri's journey: Lies, fries, alibies …

> It was gold to all the gang members. They found they could create a drug that could take over the system.

Rawiri (44-year-old Māori male). Meth user and Meth dealer: a 27-year journey of drug use:

- long-term poly-drug user
- membership with three different gangs across time
- multiple interactions with the criminal justice system across his lifetime
- used Te Ara Oranga's Employment Works to help him back into work after 17 years unemployed – work is a key factor allowing him to avoid relapse

both Rawiri and his wife have chosen to not use meth for over three years.

When Rawiri was 10 years old his parents died within months of each other. He explains, "that's what really sent me over the edge … ever since then it's been 'fuck the world' … I thought they didn't love me".

Rawiri goes on to describe that, since being drug free, he has learned to accept the past and he has forgiven himself for not forgiving his parents for leaving. He recalls feeling as though he was left "floating in the wind for many years after their death, now, since recovery, I feel like a stable tree".

Rawiri attended 14 different schools because, he says, he was a very angry child. When asked if any of those schools tried to help him, he states that not one did. At 15 Rawiri ran away from home. He first tried methamphetamine at age 17 years. He initially used it only when attending parties. Over the years this became an everyday habit.

> Methamphetamine now, it is a normal thing. People think it is normal. When you are not educated that is a normal thing for you … you do not know any better. It becomes a belief. Let's burn, let's burn, let's keep on burning.
>
> Methamphetamine had my heart.

Rawiri patched to three different gangs across his lifetime. He explains that this is unusual. He explains, "I lived to tell the story. Not many people can do that". He eventually became a top tier methamphetamine dealer. He and his wife continued smoking it throughout their entire 26-year marriage (up until three years ago). He spoke about feeding his family by "putting a dollar bag ($100 bag) in somebody's hand". But acknowledged the reality that instead most of the money "goes straight into the pipe and you're still not feeding your family because you're feeding yourself, you're feeding your habit". Over the years Rawiri did accumulate many assets including cars, motorbikes, and houses, but these too "all went up in the pipe".

Rawiri can speak at length about what methamphetamine was like for him, and his observations of others whilst they were using. He offers that, for him, it was not necessarily about 'the hit,' instead it was the nice taste. After a while, according to his experience, he could smoke 3 or 4 grams a day and still fall asleep – he was so immune. Everybody, he argues, gets to the point where they will lie to their loved ones and steal from them. They also become paranoid.

There used to be six of us at the table and we would put a grammy in the pot and 15 minutes later we will be behind the curtains paranoid the police were outside.

Rawiri states that his children "grew up in the heart of hardness". When asked if he and his wife provided a safe home for their children, he responded:

> No, it was not a safe place because I had every criminal you could think of there. I had all walks of life. In my mind it was safe. I look back at it and it was not safe at all. My kids grew up around gangsters. It is no wonder they are the way they are now. They did not like that world what's so ever.

Though both Rawiri and his wife smoked methamphetamine none of his children took it up. His daughter was instrumental in their decision to give it up. She threatened to take their mokopuna away from them if they continued to use. Rawiri explained that she threatened this at least 20 times before she finally did move away with the children.

> When she moved with the kids that really broke me. It broke me because it broke my partner, and I didn't like to see my partner broken. We ended up hitting the shit hard. You take those kids away we are just going to rot away. What's the point … my missus cried for a whole month and did not speak to me for three weeks. Then I made the effort to quit. Then I ended up getting back on it. I fell off the horse heaps of times. It was getting up from there … it's not until you hit rock bottom a hundred times before it starts to calculate in your head.

Recovery

Rawiri talked about the early stages of giving it up:

> The first couple of months was that hard. I ended up picking up a petrol can and having a couple of sniffs just to get that craving away.

Despite initial difficulties both he and his wife have been not used for over three years. Rawiri explained that he does not even think about it any more. Neither sought formal support to give up though Employment Works played an important role in helping Rawiri back into employment after 17 years being unemployed. He explained that employment gave him back his mana.

Now I can't even get angry. That's the best thing about it, being recovered. I used to be a very angry person. Somebody look at me, I'm just 'what the fuck you looking at?'. That was my mentality … I just cherish the new beginning. I don't want to let go of it. It's been the happiest time ever.

Post-addiction

Rawiri is active in his community fighting what he calls 'the meth epidemic'. He participates in community groups set up for users, by recovered users, and their whānau. Hundreds of people attend these groups. He has also applied for a Pou Whānau connector position. Though he did not get the job he hopes that the opportunity will present itself again.

When the Pou whānau role came up I told them, you give me that job you will get results. Why? Because I can walk into everybodies' houses around here, everywhere. I know everyone.

Rawiri and his wife now regularly have their moko stay and they have reconnected with their children.

What could have changed his life course?

Rawiri started using methamphetamine recreationally, but as is the nature of the drug, this slowly became an everyday occurrence.

Rawiri spoke about the need to educate children and young persons about the risks associated with methamphetamine use. He argues this will be essential to reduce the amount of use in New Zealand.

During Rawiri's childhood both his parents passed away. He cannot recall receiving any support for this from anyone outside his family. He attended multiple schools and no-one in these institutions provided him the help he needed. It is possible that if he had received expert care during these hard years his life-course trajectory may have been different.

When Rawiri came to the attention of the law for drug-related offending this may have provided another opportunity to support him into treatment. Rawiri argues that this never occurred.

The model of Te Ara Oranga

> "Te Ara Oranga's model is not just about Meth reduction. It is a model of interacting across social services."

Where did Te Ara Oranga come from?

Te Ara Oranga benefited from a pre-existing cross-agency sharing of professional insights into social problems: The Social Wellbeing Governance Group (SWGG). The original group was formed in 2012, (see Figure 8) and had at its core a partnership between founders in Police and Health, though its original focus was on suicide prevention. It became instrumental in obtaining initial funding for Te Ara Oranga from the Proceeds of Crime Recovery Fund. The SWGG was given licence to try new things, support the initial evaluation, and demonstrate sufficient potential to expand into its present form.

Figure 8: The members of the Social Wellbeing Governance Group at the time of developing Te Ara Oranga

The Northland Social Wellbeing Governance Group

1) CEO Northland District Health Board (Co-Chair)
2) Te Waka o Taonui representative (Tai Tokerau Iwi Chairs)
3) Regional Commissioner (Ministry of Social Development)
4) Northland Regional Director (Then Child Youth and Family, now Oranga Tamariki)
5) Regional Operations Manager (Ministry of Education)
6) District Commander Police (Co-Chair)
7) Regional Director, Te Puni Kokiri
8) Children's Action Plan – Regional Children's Director, Whangarei

The parties to the SWGG (Figure 8 details the parties as they formed in 2012) recognised they were dealing with some of the same clients. However, the then practice of sharing across agencies was restricted to the operational arm of Police, they would regularly talk to several of these key partners. Each agency possessed a unique capability that intersected with a set of common problems. However, their cooperation did not extend to a strategic level of planning. Those involved from the outset acknowledge a dysfunction from merely bringing people together. Thus, they report some years of effort prior to 2015 yielded little benefit.

Te Ara Oranga required a 'meeting of minds'

The key partnership between Health and Police, central to the formation of the SWGG partnership, led to Te Ara Oranga. It is described as a coincidental alignment, or a 'meeting of minds'. By their own recognition, it was the ability of people to establish professional connectedness to form 'the magic' that makes Te Ara Oranga successful and unique. By their own estimate, and in their words, the most important feature of Te Ara Oranga is having the right people in the right positions.

> "In Northland it was the right model, the right idea, with the right people to deliver it."

From the outside, the 'magic' arose when everyone recognised the need to put aside long-held beliefs. These would include preconceptions of how agencies operate, set beliefs about what was impossible to achieve, and prejudice of agency function, often based on personal experience. For example, some at the table report having had Police lock up whānau members, and so they held natural reservations about how 'these police' might operate. Similarly, people also report the intimidation of the uniform, a long history of promises without action and failure of past cross-agency programmes. Despite this, the suspension of assumptions did occur, and it came about because of common recognition of crisis and need. When this occurred, Te Ara Oranga could be formed.

All parties understood the need to get ahead of the problem

By 2017, widespread methamphetamine use in Northland had occurred for nearly two decades—the critical date identified is the year 2000 when it is reported that within a period of six-months P emerged and was 'everywhere'. It is important to understand that the development of Te Ara Oranga was preceded by years of traditional efforts from Police and Health, and well-intentioned thinking and traditional methods for targeting suppliers and treating users. Like finally recognising swimming against a rip, Te Ara Oranga is a radical shift in direction to get around a problem that all parties agreed was, by their accumulated experience, seemingly intractable and impossible to deal with by themselves.

Health and Police held the same basic values and aligned on a central idea

Te Ara Oranga adopted at its centre a philosophy: the need to get ahead of the problem before, in their words a person gets to rock bottom, before it is serious, before it is too hard. The idea has natural alignment to Police's Prevention First model, a model that is well-understood within a public health model.

Consequently, the same central idea is expressed from leadership in Police:

> "We cannot arrest our way out of this, this would never address the demand"

and from leadership in Health:

> "[we were] actively looking for people who were early on in their drug trajectory … getting the help they need to kick the addiction before they became too hooked."

The alignment of the ideas represents a key to understanding Te Ara Oranga and what distinguishes Te Ara Oranga from programmes that operate elsewhere in the world. Te Ara Oranga offers a public health prevention model, not a straightforward health model. People from outside Health, and those who have no lived experience with addiction, struggle to make the distinction.

The focus is on the beginning of a user's journey when a person may not even realise harm from drug use. The model combines a public health model, health promotion and to Police's Prevention First strategy.

A public health response is not a simple health referral model

The health response to the long-term consequences of tobacco consumption is not to provide more thoracic surgeons to manage lung cancers. Similarly, the response to methamphetamine use needs to be about a long-term commitment to driving down demand, not simply responding to addiction by providing evermore beds in detox clinics.

> "I think the government thinking was get them off the streets and into detox and they will be clean. The reality is 80% will relapse afterwards and you get these revolving doors. But politically detox beds sounded good."

To be clear, Te Ara Oranga did introduce new beds in the Dargaville detox clinic (Timatanga Hou), and needed these, because in setting up Te Ara Oranga they encountered a tsunami of referrals. However, they persevered with the central philosophy to get ahead of the problem. Importantly, most of service users identified for a referral will not recognise their position on a drug trajectory as warranting residential treatment in a hospital facility; most do not need it.

In response to the idea of having more detox beds (at least in one location), specialist staff offered:

> "To tell you the truth … if they had a unit of eight people who use methamphetamine it would be complete chaos … it also wouldn't support their treatment goal. If it is chaotic, they would leave."

Te Ara Oranga is an alignment of philosophies, the meeting of minds with a common agreement to get ahead of the problem and drive down demand. It does not simply 'treat addiction' because that would never get ahead of the problem, Police could not arrest their way out of it, Health cannot treat their way out of it.

Te Ara Oranga service is offered independent of any assessment of addiction

Te Ara Oranga offers service independent of an assessment of the severity of addiction, as early as possible in terms of a person's willingness to receive support. In developing this orientation to drug use Te Ara Oranga has implicitly adopted a leading-edge theory of addiction.

The model in Portugal is explicit in its dealing with models of addiction within a set of policies that leads to the operation of the Dissuasion Commissions and their primary responsibility to determine the addiction status of a user. Dissuasion Commissions' decision-making is also supported, and overseen, by the lead policy agency, the Institute on Drugs and Drug Addiction.

Te Ara Oranga has an implied theory of addiction

It is likely a recognition of the addiction characteristics and neuropharmacological effects of methamphetamine that no model of addiction is ever expressed. However, it is implied. It appears in the presentation on the 'cycle of abuse' where withdrawal is said to last from 15–90 days.

Figure 9 presents the ever-present fridge magnet widely adopted in Northland. Reported to be cheap, and easy-to-distribute fridge magnet it was readily adopted and used by families faced with a person who is changing before their eyes. A second run of 5,000 magnets followed from an initial trial production of 1,000.

The mean half-life of methamphetamine in the blood stream is 10 hours (Cruickshank & Dyer, 2009): 'withdrawal lasts typically for 7–10 days, and residual symptoms associated with neurotoxicity may persist for several months'.

Figure 9: The Meth Cycle of Abuse fridge magnet

Te Ara Oranga's model is consistent with an evidence-base that recognises dependency is not a function of retaining a level of drug in the blood system to avoid withdrawal but a function of neurological remodelling upon exposure and use of the drug. The physiological research supporting this theory of addiction is outlined in (Di Franza, 2020). The Di Franza model of addiction posits even low-level dosage/exposure of a drug (methamphetamine) induces a physiological-led battle between abstinence and repeated use. This is contrasted with a traditional model of addiction that requires repeated and continued exposure to a critical set point, a threshold, where continued use past the set point defines a person as 'addicted'.

The implications of adopting this approach to addiction

The implications of adopting this approach are evident in Te Ara Oranga's model.

- First, there are no thresholds for volume, frequency, or duration of use which easily define an individual as an addict. Te Ara Oranga recognises any use, any amount of harm and any type of harm, provided it is a consequence of meth use.
- Second, for methamphetamine, there is an assumption of a drug use trajectory where continued use leads to increasing harm. Contrast this with other addictive behaviours, for example gambling. There is no necessary harm trajectory associated with gambling. The accepted position is that most people can sustain low-level periodic exposure to the activity indefinitely.
- Third, wide individual differences in the drug trajectory of methamphetamine use allows users to self-exempt from messaging. Conveying a message of drug harm is more difficult without clear criteria of addiction and may be ineffective on a target audience who have experience or can point to examples of long-term use that 'appears' harmless.
- Fourth, because no definition of addiction is made explicit, a regular user of the drug may not acknowledge the exposure is harmful and they are most unlikely to recognise their use as 'addiction'. Thus, perhaps the most powerful impact of Police, General Practitioner or whānau interventions is the necessary interruption of a misconception and provides a chance for self-examination.

  [Do you see many people walk away from it?]

  "Not without a good shove. There are the odd one or two but normally they are like me and it was never their drug of choice, they had something else that had a hold on them that was pulling them in another way. The ones that are dedicated to the meth, you don't see many that leave of their own accord. Either the family put them into rehab or the Police. It all ends in tears one way or the other."

Te Ara Oranga was influenced by a blend of successful Police and Health Programmes

Te Ara Oranga deliberately acquired the best aspects of other similar social programmes. The leadership at the beginning, points to examples of other Police programmes including Whāngaia Ngā Pā Harakeke (Family Violence) and Te Pae Oranga (Community Justice Panels). There are obvious (but potentially underestimated) links to core features of public health initiatives, such as the long-standing Smokefree campaign and the use of public health prevention models that include Screen and Brief Interventions (SBIRT). The addition of an employment service, a new Meth Harm Reduction Team and lived-experience specialists and Pou Whānau connectors widens the approach to a social wellbeing initiative.

Te Ara Oranga adopted aspects of Whāngaia Ngā Pā Harakeke

Te Ara Oranga takes from Whāngaia Ngā Pā Harakeke the model of engaging cross-sector support with information-sharing that facilitates the best treatment outcomes on a case-by-case consideration. The effort places the person or persons (families and whānau) in need at the centre of concern and this aligns it naturally with preventative public health models.

Whāngaia Ngā Pā Harakeke is a world-leading, police-led programme that triages family harm cases with information sharing with other social-sector agencies and applies resources by referral to NGOs. Importantly, Whāngaia Ngā Pā Harakeke attempts to get ahead of the problem (and any escalation of Family harm) by adopting the Prevention-First model (NZ Police, 2017). The main effect is that service is offered and provided when *any interaction with Police* identifies a family as needing help. A critical component of the programme's success is that service is provided without the need to arrest anyone or having charges laid (Walton, 2021; Walton & Brooks, 2019, 2020).

Te Ara Oranga learned from Te Pae Oranga

Te Ara Oranga adopts the model of Iwi-Community Justice panels because it offers a diversion away from the criminal justice system to a community-owned solution with an individual taking responsibility for their actions.

> "It's not about putting your family into jail; it is actually about keeping your family out of jail by approaching and dealing with it now."

Te Ara Oranga has an element of Te Pae Oranga where the 'causes of offending' are dealt with in a diversionary approach, particularly with a concern to identify the source of offending (Akroyd et al., 2016). Te Pae Oranga is also an example of Police exercising discretion to divert away from the criminal justice system. In Te Pae Oranga the community is involved in bringing a person to account for their behaviour so that the community and the individual form a plan on how to support the person to a journey of social wellbeing. The panels have operated for seven years before being evaluated as being especially effective (Walton et al., 2019).

The perception of those with lived experience bears witness to the power of that shift and their own change in perception of the Police:

> "Before Te Ara Oranga they [Police] had their 'war room' with photos of 'targets'. Now they are 'clients.' Police now think about why people use. Before, if you had meth charges you were just a criminal. … Before it was just 'lock them away'.
>
> [Now] The entire mind frame around clients is awesome and they are very, very passionate about the mihi (work). And it is not just the Whangarei Police who have changed."

Te Ara Oranga needed something like Smokefree

It is not accidental that 'Methfree Te Tai Tokerau' and Smokefree Aotearoa (see Figure 10 below) bear some resemblance in colour, form, and style. The engagement with community and the desire to drive down demand for meth meant they looked to successful similar campaigns with a call to have 'one like that'.

Figure 10: An example of branding from Te Ara Oranga's social marketing campaign (left), and the Smokefree Aotearoa 2025 campaign logo with the Smokefree brand logo (right)

In their early consideration of the programme, they identified a central role for social marketing in their reporting:

> Te Ara Oranga takes a social marketing philosophy of supporting the influencers of the addicted user (including whānau, hapu, community, and respected community groups). This is combined in a framework to reduce demand – typical in counter-marketing. The approach considers the five dimensions of the illegal 'market': product, place, people, price, and promotion. (Pilot Evaluation Report)

Two things are important. The first is that the social marketing philosophy recognises the user as needing the support of the influencers of the addicted user (including whānau, hapu, community, and respected community groups). The second is the awareness that the product is marketed, albeit illegally marketed. Northland community groups know that the product is 'pushed', and they identify the model of marketing as the key destructive mechanism for their communities.

Having developed a capability that could deal with the problems of meth meant advertising success, raising community awareness, and uniting a community. A remarkable combination of effort brought about a social marketing campaign to support, promote, and acknowledge the changes of practice occurring in the partner agencies.

Te Ara Oranga's model was developed with consultation involving local iwi and community groups. What emerged was a blend of the best approaches based on a united desire to do something (with urgency) to change practice and address a concern that had, in the view of Police, Health and the community, reached a crisis.

> "Three iwi have made approaches asking about Te Ara Oranga as they need something in their own communities. They were screaming for it." [Te Ara Oranga]

Supporting the brand, was a newly developed logo, website and resources including social media resources, videos from users, whānau and iwi representatives. Nine Methfree billboards were erected in local communities and the activity instilled a huge community drive, when everyone was on board, they all wanted it, they were passionate, they were pulling people in.

The often-quoted observation is that 'They've never been tagged'. However, the like all social marketing efforts the campaign was not about billboards or even a single message, but a campaign able to rally a community to action. It is the action of the community that generates interest from an evaluation perspective. Clearly, the community and Te Ara Oranga achieved something far more than either party could do alone.

The role of social marketing is further considered below when describing the drivers of demand for methamphetamine and how social marketing plays a crucial role within Te Ara Oranga to support the intent of communities, inform those seeking help, de-normalise the use of methamphetamine and drive down demand.

The components of Te Ara Oranga's model

Figure 11 presents a graphic to show the various main partners of Te Ara Oranga's Model as they were in operation during the period of the evaluation (2017–19). Added to these are the new functions or roles that distinguish Te Ara Oranga from other health referral models.

Figure 11: The formal structure of the Te Ara Oranga model

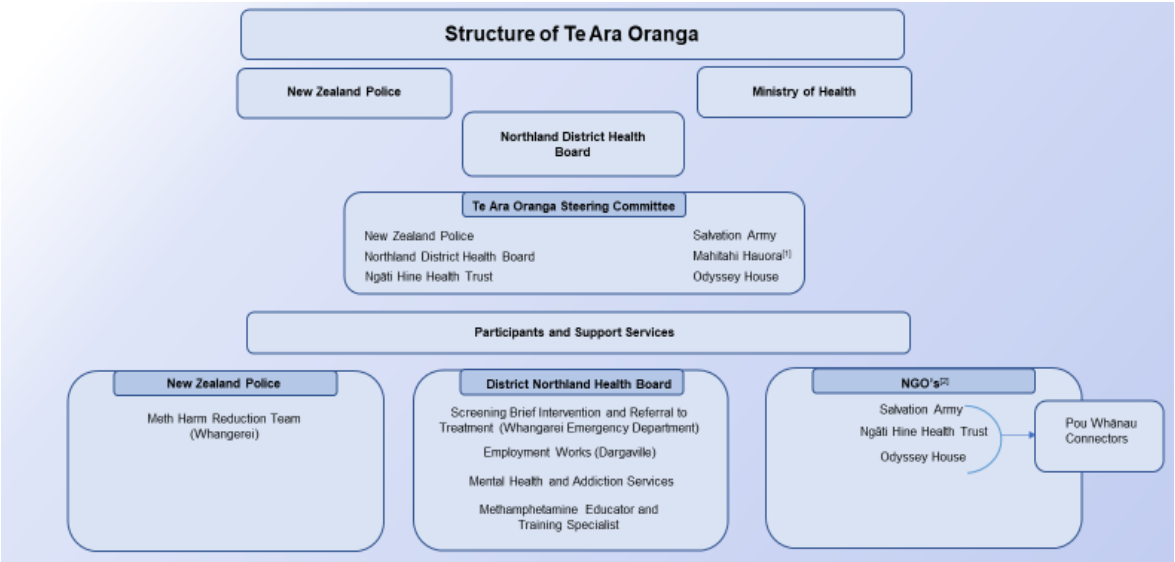


Figure 11 outlines some of the key components but fails to capture that the relationship that acted to rally a whole community of support. This is seen with professionals across the region (General Practitioners, who make referrals) and community groups. For example, the PHO (then Manaia Health PHO) invested to develop screening and brief intervention tools. Te Ara Oranga responded to a generalised awareness of a problem that grew through the co-ordination of a wide range of response. There is a significant amount of resource and effort input across a wide range of professional practice and social services that magnifies the modest budget of the programme.

Changing mindsets: the essence of Te Ara Oranga

Aligning the Police, Health and NGOs to Te Ara Oranga

It is somewhat difficult to separate a change of mindset from the changes of practices that helped reinforce and instil Te Ara Oranga's model in Northland. However, a unique feature of Te Ara Oranga is that it has changed the mindsets of everyone who delivers it, to a now clear, consistent, and collective message. For some, the adjustment occupies their professional practice, so this change means challenging a culture in a workplace, professional practice, or a way of doing things.

Are they addicts, customers, clients, or service users?

Central to the model, and a prerequisite for successful implementation, was that all parties delivering Te Ara Oranga adopted a common, client-centred, approach to the service user. The label service user is a deliberate term used throughout this report. It is literal, it means here the person who receives service and extends to those friends and whānau who seek support to help others. There is a chance service user is confused with addict or methamphetamine user or is seen as a placeholder to euphemistically represent either. Police would sometimes offer the label 'customers' for service users, but they are occasionally also observed to refer to them 'offenders'.

Viewing the service user as a 'customer' results in a one-way mindset shift that would now persist even in the presence of highly prescribed practices or a return to the old ways of doing things. From front-line Police it is reported:

> "The mindset is starting to shift now, looking for opportunities and recognising that the addict is long suffering. Stuck in the drug system."

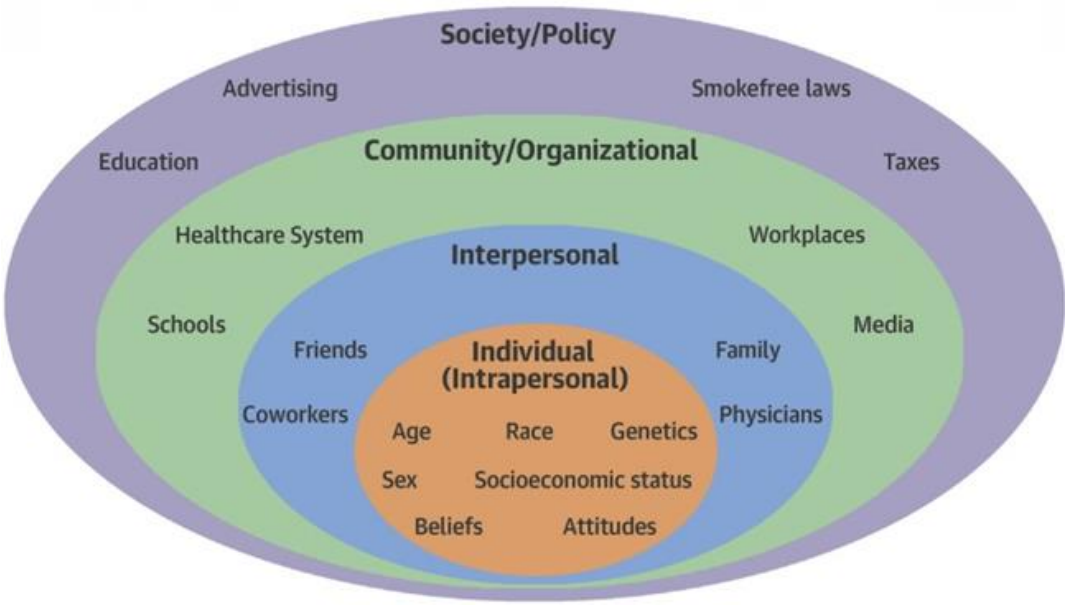
Recognising the drug user as stuck and long suffering is a feature of Te Ara Oranga but it is not new to Public Health, or those who deal with addiction services.

The client-centred approach is called the socio-ecological model in Public Health (Kalkhoran Sara et al., 2018; Kilanowski, 2017) and is considered essential to social marketing (Hastings & Domegan, 2017) where it is fundamental that, "people's behaviour is not just determined by their own choices but also by their social context" (Hastings et al., 2000, p 46).

The socio-ecological model from public health

The socio-ecological model places the user at the centre of spheres of influence and questions what key influence bears upon the individual, and what changes among those influences will best bring about a positive change. The user is surrounded by a sphere of influence of those inter-personal connections that have the strongest impact on the person behaviour (both positively and negatively): family, friends, co-workers, physicians. To these interpersonal relationships, Te Ara Oranga's model adds Police (who would never usually appear in a public health model), Screening, Brief Intervention and Referral to Treatment (SBIRT), employment services and Pou Whānau connectors.

Figure 12: The socio-ecological model representing factors associated with the initiation and continuation of smoking



Source: Kalkhoran Sara et al., 2018.

The socio-ecological model is presented graphically in Figure 12 as it is represented in Tobacco Control. The model is often used in Tobacco Control, where its effect is to remove the often-held preconception that the user themselves is entirely responsible for their behaviour, and that it is an individual choice to use drugs and to become 'addicted'.

Community and organisational influences bear down on interpersonal relationships (making them easier or more difficult) and social/policy influences bear down on the Community/Organisational influences, again facilitating behaviour change or response to those influences by the end user. Te Ara Oranga operates to change the influence across levels with the co-operative model of physicians and health working with NGO groups such as Salvation Army, Odyssey House, Ngāti Hine Health Trust and so on. Police would be operating at a community/organisational level with their adoption of a new mindset but also at an interpersonal level when offering a referral for help.

Te Ara Oranga introduces seemingly non-traditional health influences such as supportive employment services, that assist the service user finding employment, recognising that the individual's wellbeing is advanced by the reconnection facilitated through productive employment. However, they are well recognised influences in the socio-ecological model operating at the community/organisational level, supporting the development of positive interpersonal relationships.

Behavioural change (to a path of wellbeing) becomes possible when the service user[5] is conceived as being influenced by numerous factors that can be altered. The focus with the client-centred approach is to alter those things that can be changed to influence the users.

So, from the experience of those who have supported hundreds of users through recovery:

> "When we talk about what motivates a change, or help seeking behaviours, it is not necessarily just one thing, there might me a multitude of reasons. What I hear all the time is the relationship with their significant others, has broken down or is non-existent. There might be legal impacts, involvement with Oranga Tamariki. They may be sick and tired of it all, and all the people around them and the things they must do to manage their dependency. Whether that's dealing, selling themselves, burglaries, and the like. Whatever it looks like for them."

The core philosophy of Te Ara Oranga is not unique, and probably holds a longer history in public health, but it finds common ground in Police's 'Prevention First' strategy. The mindset shift is commonly known as the socio-ecological model.

Health shifted its mindset

Although the socio-ecological model has widespread application in health, it is a mistake to assume that the pendulum has simply swung towards a health response, and therefore most of the mindset shift has come from Police and other services. The 'meeting of minds' that make Te Ara Oranga successful required shifts from all parties.

For example, Te Ara Oranga has introduced SBIRT in the hospital Whangarei Emergency Department. The SBIRT is delivered by a dedicated practitioner with lived experience of meth use and long-term addiction. The insight from this challenging practice, for now, is that it has mellowed and changed ED doctors' attitudes and culture toward people who keep coming in with alcohol and drug issues.

Emergency department staff are often the front-line response from a health perspective. However, service users might not appear for the reasons we think. It is rare for users to be admitted for methamphetamine withdrawal alone. It is more likely because they are having significant mental health and/or safety issues either because of use of the drug itself.

The health system that sometimes advocates to divert alcohol and drug use away from emergency departments (Irving et al., 2018) but in Whangarei they adopted a different position, through advocacy and determination and the support of Te Ara Oranga:

> "… you really do feel like patient advocacy and taking the opportunity you are given to make a difference is important … sometimes it's not the super exciting blood and guts side of ED…it is actually those little things that do make a huge difference ..."

[5] The term service user and addict are not interchangeable unless you operate within a model of addiction that recognises neurophysiological remodelling at first use, such as DiFranza (2020).

The result of SBIRT in emergency departments is new perceptions of partnership and respect for the lived experience of a co-worker who has offered emergency department staff a way to help drug-using patients.

The Police mindset is still divided

> "How do you change Police mindset from arresting everyone who has drugs in their possession?"
>
> "To teach coppers to not go out and just arrest people is not necessarily the easiest thing to do. To sell them something that seemed a soft process after an arrest took a lot of convincing."

Most health practitioners get something of a selection bias in those they encounter, they get those who, even if coerced by fear of Oranga Tamariki or Police action, make a choice to be present at the health contact. By contrast, Police actively seek out the customers. They see the problem from all sides, they meet people who do not welcome police presence, and they see the people who are simply not suitable for a health referral.

It deserves special attention here to consider the challenges to changing the Police mindset to be open to the idea that drug users are not always offenders and are sometimes victims. Some Police in Northland have altered their position of meth users and are seen to do so by the communities, the other agencies and those they connect to through Te Ara Oranga.

Although it is embedded in the Prevention First model, Te Ara Oranga is the first real extension into a traditional area of policing that holds deep-seated views of most gangs and gangs' associates, as criminals, hard-drug users as criminals, and any type of connection to the drug-manufacturer or supply of drugs as the rightful prioritised target of law enforcement. Despite this, health professionals observe:

> "It is very new, and good to see, Police sending us people for treatment. I think it is very heartening to see this refreshing change in Police attitudes around drug use."

The change in mindset is not dissimilar to the shift required to have a modern approach to the once held view of family harm as 'just a domestic' that hid the true nature of New Zealand's violence within families (Ford 1993, Marsh 1989). Thus, it is easy to see the crossover benefit of the Whiria Te Muka and the introduction of Whāngaia Ngā Pā Harakeke, being a catalyst for change in other areas of Policing. This recognition should be accompanied with an understanding that change required decades of effort, significant focused investment in programmes, research, and advocacy from executive and political champions.

The adjustment to a prevention focus, and partnership with Health, has brought greater understanding, and new tactics:

> "The fundamental change is from an enforcement perspective to a preventative perspective.

> At the start it was about identifying the right staff to be in there [in the Meth Harm Reduction Team]. because it is so easy just to become an investigative tool for the CIB to follow up and do search warrants and arrests. It was a risk, so it was something we did really carefully. Making sure we are delivering the essence of Te Ara Oranga."

The mindset shift is not yet across the whole Police district

However, it is likely that Northland Police, and then perhaps, at least initially, 'only those in Whangarei', are the vanguard of mindset change. The benefit of partnership is that it opens new opportunities and new approaches, it puts an option to the frontline so they can exercise a discretion of achieving a prevention outcome. Although the changing of mindsets is recognised as a work in progress, only the Police closest to the programme are perceived by others (e.g., within Health) to really be on board.

> "We got very few referrals from them. Almost none in Kaitaia or Dargaville, a few from Kaikohe. So, I think more outreach to the Police would be useful."

Those closest to Te Ara Oranga (officers within the Meth Harm Reduction Team) participate in the core training, particularly Motivational Interviewing, attend hui, and engage in community outreach and education. However, the change of mindset is not easy to transfer to other parts of policing. The meth harm reduction team was developed with hand-picked staff who demonstrate an understanding and believe in people's capacity to change.

> "It wouldn't work if people were told they had to work with the Meth Harm Team, because you're getting a lot of people that wouldn't have that attitude that was conducive to working with us. Believing in people's capacity to change."

It may be confronting to some to extend a client-centred approach to the user of hard drugs. This remains a tension in an aspect of Te Ara Oranga when trying to decide who is the suitable referral, where the discretion to refer to treatment begins and ends.

The exercise of Police discretion is highly complex, the difficulties are not well shared across the programme and partners. Police must decide the role the person plays in the distribution and supply of product, the risk the user poses to others, and potential consequences (harms) in deciding not to arrest or charge a person caught with methamphetamine.

The perceptions of Police are always very positive

The main challenge for Police changing mindset is not adopting a client-centred approach, it is managing the risk associated with their decision-making to refer to treatment.

It remains true that people who encounter police who adopt Te Ara Oranga's model are impressed by the experience that challenges and may overturn their preconceptions:

> Police attitudes? "I think they are really awesome. I think they do their job really well. Instead of sending them straight to prison like they used to, they now send them straight to Te Ara Oranga. They do their job really well. Their communication is really great … They have been really awesome since I started."

There is also recognition of the commitment police offer to the partnership, by changing their practices:

> "They are offering treatment as a first response, they have done training in motivational interviewing, because their commitment is to get it right."

Indications of change elsewhere: the Court of Appeal ruling in *Zhang v R*

In October 2019, the New Zealand Court of Appeal released its decision in *Zhang v R* [2019] NZCA 507. It considered six methamphetamine-related sentencing appeal cases and reconsidered current practice established within what is known as the Fatu guidelines.

'Fatu' bands were only based on one factor; the quantity of methamphetamine associated to the individual. Any person convicted of dealing more than 500g of meth was automatically placed into the most serious band, with a minimum sentence of 10 years and a maximum of a life sentence. There were four 'Fatu' bands (developed on previous consideration of a case *R v Fatu* [2005] NZCA 278, [2006] 2 NZLR 72 (CA)) that represent different sentences for the possession of different amounts of methamphetamine.

In its new ruling, the court of appeal established that factors such as poverty, addiction and mental health can now be considered as mitigating factors in sentencing for cases involving the possession or possession for supply of methamphetamine.

The Court of Appeal identifies three issues for consideration in sentencing:

(1) the role played by the offender when assessing culpability

(2) the relevance of an offender's personal circumstances, particularly addiction issues and

(3) the approach to be taken to imposing minimum periods of imprisonment for methamphetamine offending.

The Court ruled that "addiction shown to be causative of the offending" may justify a lesser sentence of up to 30%. If this is the case, addiction may need to be considered in combination with potential concurrent mental health issues, and judges should consider including some element of rehabilitative treatment during sentencing. The new judgment has changed the structure to include five 'Zhang' bands, each of which carries a lighter sentence than previous versions.

Providing a consistent service

The bridge between mindset and actual changes in practice is the training delivered to ensure a consistent service. Within Te Ara Oranga there is a dedicated specialist educator whose role extends to education programmes across agencies and the community. The educator is supported by Pou Whānau connectors when engaging with the community, especially on marae.

Police, Health and AOD clinicians all train in aspects of Te Ara Oranga's model, often together. Recipients mostly welcome the training opportunities, many ask for much more training as they confront the complexities of a whole-of-community wellbeing approach, and the challenges associated with mindset shift.

It is a healthy sign that they reflect and adapt what they learn into their local context. However generally, they recognise they can produce a consistent message, so that 'Everyone is getting the same message', because of a deliberate effort through training:

> "It works differently now because we have the Matrix Model, and the clinicians are following, and they are working within that framework. Whereas if they were run-of-the-mill then they would be much more working to the needs of each client and making treatment plans around that."

Consistency of clinical practice is seen as the responsibility of the clinical leadership. They are active in guiding the AOD staff but the demand for supervisory and peer-support is often reported to be higher than is met. Some staff have had what they believe is insufficient training, supervision, or guided development opportunities.

There is a general recognition of the value of training, education programmes and a co-ordinated response to delivery services. However, there is a consistent representation of an unmet demand for supervision, training, advanced education. The workforce that has contributed to the uniqueness of Te Ara Oranga would like to understand its place, how they contribute to a new way for doing things and how its various parts fit together. It would seem likely that meeting that demand would only enhance their ability to contribute to the programme.

Changing practices: how Te Ara Oranga works

> "We are just scraping the top of the meth issue, but if Te Ara Oranga were not there, we wouldn't be scraping anything."

From an evaluation standpoint the critical question is whether the change in mindset described above is accompanied by a sustained change in practice. The components of Te Ara Oranga considered here are the Matrix Model, motivational interviewing, the meth harm team, Pou Whānau connectors, SBIRT, and employment services.

These services align to the intention of the programme and are represented in the original logic map (Figure 6, p 39 above). These somewhat unique practices do not collectively define Te Ara Oranga or limit it. Importantly, you cannot simply create a meth harm reduction team, Pou Whānau connectors, SBIRT and so on and expect to get Te Ara Oranga because the practices without the shift in mindset would be likely to fail.

The Matrix Model

The Matrix Model is an outpatient therapeutic program designed to support stimulant users to abstain from use (National Institute on Drug Abuse, 2018). It was founded in 1984 in the USA by Alan Marlatt and Thomas George, following earlier work on relapse prevention (Marlatt & George, 1984). They recognised that stimulant users are unique in their response to recovery programmes, initially they considered cocaine users, but later broadened the programme to include those using methamphetamine.

The clinicians and researchers found that stimulant users do not often require the intensive in-patient treatment associated with other dug types (heroin or alcohol). Importantly, users often do not connect with programmes developed for other drug types. Thus, against the layperson's understanding of addiction, the clinical leadership of Te Ara Oranga also recognise:

> "Methamphetamine withdrawals can typically be managed in the community though the user should be screened for psychosis. A script for a light sedative will help most through withdrawals, the anxiety and depression that may accompany it."

The Matrix Model is a relapse prevention model. It recognises that 'most patients who have attempted recovery will agree that stopping use of a drug is not that difficult; it is staying stopped that makes the difference (Obert et al., 2000, p 160). The Relapse Prevention model builds self-control skills to teach individuals who are trying to change their behaviour how to anticipate and cope with the problem of relapse. Relapse is broadly considered to be any kind of breakdown or failure in a person's attempt to change or modify any target behaviour.

As it has emerged, the Matrix Model is recognised as being particularly beneficial for methamphetamine addiction (Rawson et al., 2004) and includes aspects of both Cognitive Behavioural Therapy and Contingency Management Practices (Hill, 2015). Usually sessions offered cover family education, relapse prevention, early recovery skills, 12-step programs, and one-on-one therapy sessions. Service users are also drug tested throughout the program. Studies have shown that statistically significant reductions in use result from using this model (National Institute on Drug Abuse, 2018).

The reduced version of the Matrix Model

> "The Matrix Model, we have a manual and it's prescribed what we do and the clinicians are encouraged not to take anything out of the manual but they can add into it, to make it responsive to the group, which is necessary because we need to add in Kaupapa Māori. They can add in things they know about, using different learning skills to get the learning across. They can't just skip a session because they don't like it."

In practice, Te Ara Oranga runs the matrix programme over 16 weeks, notwithstanding the 16–20 weeks representation in the outline in Figure 13 (below). This model is closely aligned to the second version of the Matrix Model that developed only after initial implementation and the experience that the individual sessions were too expensive (Obert et al., 2000).

The original design of the Matrix Model had a full six months of active treatment. The patient attended a clinic three to four times each week accumulating 56 individual sessions (including conjoint sessions with family members). It also held a weekly relapse prevention group, a weekly family education group and family groups for family members.

As it was originally implemented the Matrix Model was extremely intensive, almost as if the patient were in a residential treatment programme. The modified treatment regime for 16 weeks increased group sessions, decreased individual sessions and held no family groups, but replaced this component with Family Education.

Te Ara Oranga's implementation of the matrix is close to the cut-down modified specification of the model. Figure 13 below shows the Matrix Model programme for Te Ara Oranga (left) and the Matrix Model Specification (right) as it was configured for a 16-week programme (note that Te Ara Oranga presents 20 weeks). They are placed side-by-side to illustrate the similarity between the original specification and Te Ara Oranga's implementation. Although the family education group was retained as a central component this reportedly does not operate in Te Ara Oranga. A pre-existing commitment to the five-step method was retained as an alternative to the family education module.

Figure 13: Te Ara Oranga's pamphlet offering of ervices within the Matrix Model (left), and the original specification of the Matrix Model in its 16-week variation from the Matrix Institute (right)

Schedule	Intensive Treatment Weeks 1 - 4	Intensive treatment Weeks 5 – 16	Post Discharge Care Weeks 17 - 20
Monday	12-Step/Mutual Help Group Meetings	12-Step/Mutual Help Group Meetings	12-Step/Mutual Help Group Meetings
Tuesday	Early Recovery Skills	Relapse Prevention	Discharge Follow up
Wednesday	Family Education	Family Education	Family Education
Thursday	12-Step/Mutual Help Group Meetings	12-Step/Mutual Help Group Meetings	12-Step/Mutual Help Group Meetings
Friday	Early Recovery Skills	Relapse Prevention	Discharge follow up
Saturday & Sunday	12-Step/Mutual Help Group Meetings	12-Step/Mutual Help Group Meetings	12-Step/Mutual Help Group Meetings

Week	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday & Sunday
Weeks 1 Through 4	6-7 pm Early Recovery Skills	|	7-8:30 pm Family Education Group	|	6-7 pm Early Recovery Skills	12-Step
	7-8:30 pm Relapse Prevention Group	|	|	|	7-8:30 pm Relapse Prevention Group	Meetings
Weeks 5 Through 16	7-8:30 pm Relapse Prevention Group	12-Step Meeting |	7-8:30 pm Family Education Group or Transition Group	12-Step Meeting |	7-8:30 pm Relapse Prevention Group	and Other Recovery
Weeks 17 Through 52		|	7-8:30 pm Social Support	|		Activities

Urine testing and breath-alcohol testing are conducted weekly.
One individual session is included in each of the program phases.

Weaving in the magic: bringing a kaupapa Māori perspective to the Matrix Model

> "When Te Ara Oranga started a call was put out by the community to have a Kaupapa Māori program available because predominantly the clients are Māori who 'grew up around a Marae environment."

The adoption and adaptation of the Matrix Model recognise the special needs of Māori, who are over-represented in the referrals for support. However, the model is quite prescribed (it cannot be altered). Practitioners must use booklets and worksheets developed overseas. They must stay within the schedule described above.

The response from some Te Ara Oranga practitioners is typical of the ingenuity encouraged:

> "… the Matrix Model is an American one ... clinicians cannot take anything out of the model, but they may add to it. We entwine Kaupapa Māori which we like to call "weaving in the magic."

To incorporate kaupapa Māori, basic things are done including using Māori terms and processes. For instance, at orientation to the program, a pouwhiri may be conducted. Each section of the Matrix may be given a Te Ao Māori name. The evidence base of the model is important, but kaupapa may be entwined. This includes using the myths of Papatūānuku, Māui, and Tāne.

Consideration was even given to the idea that work could be done on the marae. It was not adopted. Some suggest the Marae is to be considered a tapu space and that there is a risk of damaging the sanctity of the place (whenua). Others report wide variation in what is considered appropriate on the Marae, and some report that engagement with iwi meant they expected to be able to deliver services. However, additionally, the marae would have to take responsibility for the service users and they also do not have specialists to work with the Matrix Model.

Some Te Ara Oranga alcohol and drug clinicians have filled the obvious gap and arranged noho marae (overnight stays) for whānau and users to discuss methamphetamine use.

Te Whare Tapa Whā

Recall that the modified 16-week programme removed the conjoint sessions with family members from the original specification, largely a pragmatic response to the cost of the programmes delivering so many individual sessions.

Mason Durie re-introduced the te whare tapa whā model of health for Māori and it has become embedded in public health as an appropriate strategy for Māori, and when recognised and understood, to the wellbeing of all others (Durie, 1997; Durie, 1985).

The model consists of four main dimensions:

(1) te taha wairua (a spiritual dimension)

(2) taha hinengaro (a psychic dimension)

(3) te taha tinana (a bodily dimension)

(4) te taha whānau (a family dimension).

Each component is important to bringing a person to wellbeing, and each must be done with balance for a person's wairua to be enhanced. An undue emphasis on a person's physical wellbeing, for example, may be an imbalanced approach and still leave a person unwell or vulnerable.

Did Te Ara Oranga miss an opportunity to adapt the Matrix Model?

Te Whare Tapa Whā is widely understood in New Zealand, the emphasis here is on the fourth Pou: te taha whānau. The question is whether the alteration of the Matrix Model to exclude conjoint family therapy is appropriate in a New Zealand context.

Given its licence to try new things, Te Ara Oranga could it have run the conjoint-family therapy sessions to determine whether they might be effective for the people of Northland, but especially for Māori.

A disconnection from whānau/hapu and iwi is reported by the service users to be a deep-seated driver of methamphetamine use. The psycho-social effects of whānau separation 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 Pakeha. However, in general, reports from service users commonly recall losing connectedness with family:

> "They find they are no longer able to attend family functions because it makes them feel uncomfortable. They go with their own guilt because, talking themselves out of it, 'I'm intoxicated so I can't go.' Or 'I'm coming down so I can't go.' Or 'I've done so much to the family; I can't go there because it's too much for me now.' So, they kind of do it to themselves as well. So, it isn't necessarily family turning away, they start pulling away into this other world."

So, there is a well-recognised need for services that approach meth use as belonging to groups, to a closely tied family member, or to address dislocation from whānau, and to support those that wish to support the service user. For Te Ara Oranga, outside of the Matrix Model, there are alternatives such as the Five-Step Method.

The Five-Step Method

The Five-Step Method was running prior to Te Ara Oranga but it is retained as an option for the families of service users.

Figure 14: Stages of the five-step method in Te Ara Oranga

Step 1: Listen, reassure and explore concerns of the family and normalise the problem.

Step 2: Provide relevant, specific and targeted information around drug use and the stress it causes / address why the person can't stop, debunk myths and explain clinical terminology.

Step 3: Explore coping responses and the advantages and disadvantages of different alternative coping responses.

Step 4: Discuss social supports including working out which sources of support help, don't help, or haven't yet been explored; explore what family need so they feel less isolated.

Step 5: Discuss and explore further needs and facilitate contact between family member and other sources of specialist help.

Source: Te Ara Oranga Newsletter, August 2017

The Five Steps Programme may involve whānau, even via phone or by Zoom. The five steps usually delivered across five sessions are described in Figure 14. It may be a group session with multiple family members. Whānau complete a questionnaire (FMQ), are provided with information and education about addiction, existing and improved coping strategies, support structures and how they can be improved. They are stepped through new learnings and challenges in five stages, thus the title.

The Five-Step Method acknowledges harm done to whānau and supports family to build better, more tolerant coping styles (Copello et al., 2010). The five-steps programme is shown to build resilience, and this helps them support the recovery of the drug-user. However, it is not the same as Conjoint Family Therapy, the drug user is not a participant of the Five-Step Method.

Why family are not always a good idea

In addition to concern for the inclusion of non-user family members, there is the experience of service users that their immediate family also need the support:

> "I don't care what other people say, but when you are in a relationship and you are a meth user it's not just you that uses, it's both of you. You can't just have one person that smokes it. It doesn't work like that because that is two different worlds. You both got to be in the same world."

Over the years both had periods where one would stop, but the other kept using so before long they both were again. “It takes two to cut it off.”

The developers of the Matrix Model offered insight into the benefits and risks of involving family in the programme:

> Engaging significant others in the treatment process is often difficult. Patients rarely see the benefit of such involvement and will often sabotage any efforts in that direction. Family members are often angry and tired of struggling with the addiction. They are either relieved to feel that the problem now belongs to the therapist, and they no longer have to be involved or they fear that the addict will outsmart the therapist and so make every effort to prevent that by attempting to control the recovery process. Either of these extremes will result in a diminished prognosis for a long-term recovery. (Obert et al., 2000, p.158)

Contrast this with the view expressed by the community that they want to be resourced to support those who have progressed through the Matrix Model course, especially Māori and marae-based services.

The community generated ideas that could not be met or could not at least be set up at the outset of the programme. One such example is a ‘whānau space’… something like a drop in, where everyone that is affected, users included, by P can meet, share, support, mentor, workshop, etc. The idea did not get included within Te Ara Oranga’s design and so community groups have established some themselves, led by ex-users, mostly in a supported but unco-ordinated way, and disconnected to Te Ara Oranga.

These opportunities offer different avenues for people. Two of the groups are Whakamana tangata,[6] which is now in several areas: Moerewa, Dargaville and Kaikohe (they have drop-in centres and group sessions) and He Waka Eke Noa in Kaikohe. From those who set these up we recognise a community-led call to be involved, collective action and recognition: “[We] are giving back to the community”.

> We all know it’s our family members; cousins, aunties, uncles, but a lot of the whānau don’t have the resilience to stand up to them. I think this is the time where you could actually help them make a stand in their families by giving them more education, more options, more support.

[6] Whakamana Tangata Addictions Support and Recovery Community Hub.

Limitations of the Matrix Model

There is no intent here to criticise the use of the Matrix Model, as this would step us into debate as to what is best clinical practice, well beyond the expertise of the evaluators and the purpose of the evaluation. The points are made are more straightforward.

The Matrix Model is American, traditional, black, and white, abstinence based. It is super intense, over weeks, almost like residential intense. So, here you have a bunch of patients who dabble, may be pre-contemplative, and your offer them this intensive Matrix Model. It's just too much.

First, the Matrix Model is not essential to Te Ara Oranga. It is so central to the operation of Te Ara Oranga in Northland (and this brings about other benefits such as applying a consistent clinical practice) that the two things are sometimes confused. Sometime Te Ara Oranga gets described as the Matrix Model. Te Ara Oranga is not the Matrix Model, though it is one of a few examples of a pure adoption of it.

If the Matrix Model dominates the consideration of Te Ara Oranga there is a risk that the dedicated efforts of others get marginalised. The dedicated social and employment services, the meth harm reduction team, the community's contributions, and the social marketing programme are essential features of Te Ara Oranga, but they are not part of the Matrix Model.

Another way to consider this point is to recognise that Te Ara Oranga would persist and remain as a unique approach without the Matrix Model being applied. Alternatives programmes are raised as possibilities.

> There is an alternative … Assist, out of Australia which is a basic, bread and butter brief intervention. There are two versions, one is basic and then there is Assist on Ice which is for methamphetamine. The instruction manuals, the worksheets, are nice and simple and soundly based on motivational interviewing.

The ASSIST on Ice programme (Harland & Ali, 2017) resembles Te Ara Oranga because it holds Motivational Interviewing at its core and relies on screening and brief intervention to get referrals early in the drug trajectory.

Second, there are recognised systemic problems with the implementation of the Matrix Model. For example, if it is the ambition of Te Ara Oranga to reach out to the pre-contemplative[7] to 'get ahead of the problem', drive down demand and so on then this seems to rally against the programme that is set up for those who are seeking treatment for addiction (recalling Te Ara Oranga makes no such assumption).

[7] The term pre-contemplative refers to a stage in the trans-theoretical model (Prochaska et al., 1993) where a person does not intend to act to change their behaviour within the next six months. These people are often unaware that their behaviour is problematic or produces negative consequences. People in this stage often underestimate the pros of changing behaviour and place too much emphasis on the cons of changing behaviour. (2020)

> If Te Ara Oranga is aimed at getting people early in their using careers, brief intervention is the way to go, they are not going to say they have a problem and they certainly don't need the Matrix. I think Assist should be considered. It is an engagement thing; you start getting too heavy and that does not foster engagement.

It can remain a moot point whether a person who enters the programme can be classified as 'pre-contemplative' rather than contemplative within Prochaska and DiClemente's model of behavioural change.

A key feature of Te Ara Oranga is to offer a range of opportunities for anyone, at any stage, independent of their level of addiction, or any assessment of that addiction or harm. As it is set up in New Zealand, Te Ara Oranga's version of the Matrix Model probably gets a wider range of referrals (say from Police) that the original model would have accommodated. Adjustments have been made to the Matrix Model, and these have come with experience, so that now an orientation is offered to offset the possibility that the full Matrix Model is 'just too much'.

Orientation

Te Ara Oranga adjusted to its early problems with group sessions by introducing 'orientation', which may be done in groups or in one-to-one sessions, or with whānau. Orientation simply outlines the Matrix Model and other treatment opportunities. The intention was not to overwhelm the service user, to give them an overview of the approach and how it might benefit them. For some orientation might be their only engagement so some knowledge is imparted with the view that a good experience coupled with some learnings will facilitate future recovery attempts. Service users confirm that even if they 'slipped up' sometimes it was good to hear other people's stories, to hear that other people did the same things they did when on meth.

The development of the Meth Harm Reduction Team

Police blended the Prevention First Strategy with Te Ara Oranga's mindset with a mantra that every contact is an opportunity. They recall:

> Police were always good at enforcement, investigating and preparing search warrants and arrests and prosecution. That is basically where the preventative harm stopped in the old model.

A new team was constructed within Northland Police. It recruited specialised staff forming the 'Meth Harm Reduction Team' (sometimes shortened to 'the meth harm team'). The team sit under the District Prevention Manager and consists of Detective Sergeant, two Detectives (or Detective Constables) and four Constables. The meth harm team is an especially selected capability given a wide licence within Te Ara Oranga's environment to, in their words 'look for unconventional opportunities'.

It is described at the national level as truly innovative move for Police in Northland and was pretty much unheard of in New Zealand. This selected group were trained to work at collecting intelligence and information from a broad range of areas around those people in the community, who were addicted to methamphetamine. They would then actively seek them out. They would physically knock on peoples' doors, letting them know they were there to help. From their intelligence-led operations, they knew the person was using, and might have a problem, and there is a pathway set up for those people to move into treatment.

> I think it is important to find a balance, especially with things like when we are targeting, because when you get access to their phones and that just opens a whole network of users and dealers.

The team would do active outreach to communities and involve themselves in electronic, face-to-face and social media communications outlining the holistic role of Police and partners in Te Ara Oranga.

> On a weekly basis I get an update on referrals, arrests and all that stuff quantitatively and then I get a whole lot of good news stories as well around who they are dealing with and whatever fundamental changes they have affected and distribution to hapu of promotional material to access services "we've been in your neighbourhood".

For example, Te Ara Oranga produced, "Operation Notice" in Kaeo. It applied two quite different models, one long term: Police actively finding people in the community and bringing them into treatment. The other short term: a targeted operation at the supply chain.

> You can run both at the same time. Police are never going to stop targeting drug dealers and things like that.

It was a drug termination operation directed at the Mongrel Mob, who were seen to "pretty much run the town".

> "Normally we would just go in, rip them all out and put them in front of the courts and that would be the end of it. But, because of Te Ara Oranga, we decided to do things we had never done before."

Police intercepted all the phones from the raids, collected all the names of people they had been dealing to. This allowed them to gauge how heavily affected their 'customers' were, how addicted, and how many were involved in such a small population. Around 10% of the population were identified 450 users, in a small town with a total population of about 5,000.

> There was much more focus on the user as opposed to enforcement related stuff, which is what Te Ara Oranga is all about. Looking for that unconventional opportunities and going down that path. So a positive approach instead of just locking people up.

The meth harm team represent a unique way of doing things, within Police and within any kind of Health Referral Model for drug harm prevention. In Portugal, for example, the design of the approach (it may be different in practice) is passive. The person must be detected using drugs for a citation to be issued by police. In Northland Police are actively seeking out all those they can find who are affected using methamphetamine. They are often the first to offer service:

> "When the Police drove up that morning, I just had a feeling of relief come over me to be honest. It was the most that I have been relaxed in a long time knowing that it was the end. Rat shit way to do it but at least it was going to happen. It has been my goal ever since; try to make a positive out of it."

The demarcation between user and supplier is not obvious

A real problem for police, even those within the meth harm team, is the demarcation between user and dealer, or between the body and the 'head of the snake' (*Zhang v R* [2019] NZCA 507, 2019). This division persist in both mindset and practice, as perhaps it should as 'role' is highlighted as one of the three factors to consider based on the Court of Appeal judgement. The recognition that suppliers are a bigger problem than the street-level user is also highlighted as meaningful at a broader strategic level (National Organised Crime Group, 2020).

The recognition of the need to catch the bigger fish highlights the difficulty within the meth harm reduction team, they know they carry two roles:

> There is a strong belief that there should be a Methamphetamines Harm Team, but as two different entities. One working on search warrants and all that involves, dealing with the suppliers. And the other group would include people who know how to talk to people and not trying to sell the idea that a referral will get them off the meth.

The Police recognise and consistently point out that they should be targeting the organised crime that run the distribution structures. However, they face a serious challenge:

> Trying to cut into the low-level dealers is a waste of resources to some degree. From my level it feels like the big fish are too big for us to handle capacity wise.

This requires the operating model of Te Ara Oranga to retain the need to 'reduce supply' within the logic map and aligns to the stated outcomes of the programme including 'to reduce the supply and demand for methamphetamine in the Northland region'. What is difficult to understand from the perspective of this evaluation is how reducing supply is not the ordinary business-as-usual effort of those agencies who co-ordinate to do so (Police, Customs, and others).

The central role of motivational interviewing

Training in motivational interviewing has been rolled out across AOD clinicians, Pou Whānau connectors, and Police.

> "It is a great approach, as it brings it back around to the patient and what they are going to do to help themselves when they leave the meeting. Putting the ball back in their court."

Motivational interviewing was introduced as a new technique to alcohol and drug counselling around the same time as the Matrix Model developed in the mid-1980s (Miller, 1983). It has the form of a counselling technique that naturally aligns with the central tenets of Te Ara Oranga because it rejects an often-held position on drug users, "that one should confront and coerce clients to change". (Allsop, 2007).

> "So the conversation usually goes, What is great about meth? What is in it for you? No one does anything that they don't want to do. Tell me what is awesome about it? People are surprised when we ask that."

It is not to be described as a technique but rather it is, 'better understood as a clinical or communication method, a complex skill that is learned with considerable practice over time. It is a guiding style for enhancing intrinsic motivation to change' (Miller & Rollnick, 2009).

From the originators of the idea, with the benefit of decades of implementation, they offer the definition: motivational interviewing is a collaborative, person-centred form of guiding to elicit and strengthen motivation for change. Importantly, motivational interviewing is not *on* or *to* people but for or with someone (Harland & Ali, 2017).

The method has been embraced across clinical and psychological settings to induce behaviour change and early meta-analyses show it to be better than traditional alternatives (Rubak et al., 2005). Indeed, it performs somewhat better when combined with Screen and Brief intervention advice for psychological conditions (addictions) than clinical conditions (weight loss). However, other meta-analyses find more complex outcomes (Burke et al., 2003) related to the variety of forms of motivational Interviewing that have been adapted or altered from the original development as presented (Miller & Rollnick, 2012).

> "Health provided Police with training which was a very important component. For instance, they taught Motivational Interviewing. This technique helped Police to ask people if they wanted a referral. They would never have asked before."

As with the Matrix Model, it is not within scope to question the efficacy of motivational interviewing. Indeed, in assessing the performance and uptake of motivational Interviewing the originators adopt a very conservative position, recognising that more than 180 published clinical trials that have merely, 'clarified the applications and limitations of MI' (Miller & Rollnick, 2009).

It is, however, reasonable to determine whether Motivational Interviewing has been applied consistently. Two points are worth noting. First, as noted in Miller and Rollnick (2009):

> Training research indicates that proficiency in MI is not readily developed through self-study or by attending a workshop, but typically requires practice with feedback and coaching over time (p 137).

So, embedding motivational interviewing into the new practices of Te Ara Oranga is an ongoing commitment that requires 'coaching over time'. Te Ara Oranga has clinical supervision and oversight of all its practices, but it has taken some time to establish supervision and support to some of the new positions such as the PWC and AOD clinicians.

> "Everyone is getting the same message. I also meet with each of the clinicians once a month to do what is integrity supervision. Making sure people are adhering to the model or overcoming any trouble shooting or any problems. Then they are off delivering it."

There can be no one-off commitment to a day course to understand the central components of Te Ara Oranga. Those involved require ongoing dedicated training and support.

Training Police in motivation interviewing is totally unique

Second, it is possible to find examples of research that uses Police officers as the beneficiaries of Motivational Interviewing (Anshel & Kang, 2008; Steinkopf et al., 2015). However, enabling frontline officers by training them in motivational interviewing is a completely novel thing to do, and appears unprecedented in the literature and uniquely a part of Te Ara Oranga. The intent is to facilitate better uptake of referrals, but it also has the effect of embedding the mindset shift and reinforcing the co-operative approach of the partnership.

> "I think that we are challenging the Police attitudes. Police are individuals like the rest of us, but the workforce of the Police, motivational interviewing and helping people access treatment and seeing drugs and seeing drugs and those issues as a health problem will be new to them, a new way of thinking."

Pou whānau connectors

Pou whānau connectors (PWCs) are viewed as an innovation in Te Ara Oranga's model. They function to provide support to the service users, connect them (thus the title of 'connector') to AOD treatment, and support meth educator on mārae with tikanga. They are employed by the NGOs that are contracted into Te Ara Oranga's framework and hold a special reverence among those who champion Te Ara Oranga's model. Pou whānau connectors are a unique initiative for Northland, though a similar role appears in AODTC as 'peer support workers from the health sector'.

There is a strong commitment from some that PWC need to be people with lived experience. There has been some mixed experience using people who are qualified social workers but who do not possess the community connectedness, tikanga, or community-grounded mana. In Northland, PWC need to be strong in te reo and tikanga, hold strong community connections and have lived experience, though that does not necessarily imply recovery from drug addiction.

> "We've got a Pou Whānau connector because he has 'been there, done that' and people respect him. It is really about having the right people in the right places who can connect with the user, someone they respect."

Initially it was believed that the applicants for PWC roles 'did not have to be a professional,' instead they were required to know the community and the people who live there so they could communicate with people who were seeking help and bring them into the professionals. However, it is now a widespread belief that Te Ara Oranga prescribes that social workers are required to fill the roles. All PWCs are concerned that the developing nature of their roles means that what their expectations and what they do diverge in practice and with experience.

Applying the socio-ecological model described above, Pou Whānau connectors occupy an opportunity to influence a service-user at the interpersonal level, also at times when the person may be more amenable and open to conversation such as when they are being driven to appointments. This interpersonal level is the strongest influence that can be applied to modify an individual's behaviour, well-recognised by the fact that the best predictor of the likelihood of drug use is use amongst friends, family, and significant partners.

Service users report the influence of Pou Whānau connectors in offering an 'alternative to the drug using lifestyle' and showing them there is a different pathway and the service users often reported that they would like to 'give back in the same way', given the opportunity once they recover from drug use.

> "The first time I went there (Ngāti Hine rehab) I met the Pou Whānau connector. I looked at him and he looked like he had been through some shit and he had been through the same treatment centre. Wow, I thought, maybe it is possible (to get well), maybe I could, if he can do it maybe I can too – He gave me hope."

There has been some controversy in defining the role, both from the governance and leadership and from the professional relationship PWCs can exercise in relation to service-users. PWCs would like to be elevated, through training, supervision, and supported education to maximise the value of their contact with service users. However, it is clear theirs is not a clinical role.

Through a different lens, they are simply there to facilitate engagement with other aspects of the programme, such as the components of the Matrix Model.

> "When people have dropped out of the programme, we would get a PWC to go and see them and try to encourage them back."

Pou whānau connectors struggle sometimes with the definition of their roles. They do not receive the feedback from service users and are somewhat blind to the critical role they play within Te Ara Oranga's model. For example, they are often the first point of contact with a person who has requested help:

> "The programme is stretched for resources. A clinician may not be available for two weeks. This is where PWC should be called in to approach the client within the 24–48-hour window."

More importantly, the application of Te Ara Oranga's model should recognise that PWCs are champions of the message, individually delivered to a service user (and witnessed by all those around that service user). They represent the pathway to wellbeing; they may have walked it successfully and be able to relate to the service user in their own language. They give hope to service users who also struggle to define their purpose given a life without drugs.

It is likely confronting to learn that they feel diminished by division of their duties, instructions from clinicians that contradict instruction from their manager, lack of support and ambiguity in their duties:

> "Now all I am is a door knocker. I knock and tell them about their clinician, and I have no further role."

> "I have been called a glorified taxi driver. That really kicked my mana."

The model of Te Ara Oranga presented places PWCs into a critical role, some have left because of the ambiguity and drift in what they thought they would be doing and found themselves doing. The role has evolved with experience and trust that has been established between the partners. With this comes a less risk-averse, more encompassing recognition of the role of the PWCs.

There is significant scope to expand their roles, especially in locations like Kaitaia where the demand for service is significantly less than the resource requirement in Whangarei and Dargaville, perhaps into a broader range of services (i.e., beyond just methamphetamine addiction) and to support 'aftercare' and long-term follow-up.

Screening, Brief Intervention and Referral to Treatment (SBIRT)

Screening, Brief Intervention and Referral to Treatment (SBIRT) is a public health framework approach used to identify and deliver services to those at risk for substance-use disorders, public health concern and mental health conditions.

The approach generally asks 'screening questions' (usually in the form of six survey-like screen out questions)[8] that may identify a person's use of substances in contexts where they feel safe enough to reveal such. The responses to the screening questions may initiate an offer of support and a referral to service. SBIRT is often conducted in primary care settings such as with one's GP. In the socio-ecological model GPs (physicians) are included as interpersonal influencers on a person's choices. Expert opinion is a powerful influence, especially when delivered personally.

While SBIRT is not a new, Te Ara Oranga swaps out the 'expert physician' for a 'lived-experience - health promoter'. The screening tool used is called Rataora and was developed at Otago University's Department of Psychological Medicine where it was previously piloted. The screen is delivered using an I-Pad and is only done in Whangarei Emergency Department. SBIRT is implemented with additional support from Accident Compensation Corporation and Health Promotion Agency funding.

> "Is definitely filling a gap … before, and this level of support, we were asking questions, but that was all we were doing. We weren't doing anything. There was no intervention to follow. There was no follow up. There was nothing to offer people who were experiencing drug and alcohol problems. I know the whole area is really complicated and can be really difficult, but I guess we were asking questions with absolutely no follow through. It seemed very superficial and false."

The review of overseas research suggests the results of randomised controlled trials of interventional studies in the ED setting for substance use have been mixed for alcohol, and under-researched for tobacco and other drugs (Cunningham et al., 2009). However, SBIRT emerged from original trials in ED settings. One of the earliest proponents were Miller and Rollnick (the developers of motivational interviewing) trialled the use of 'health promotion advocates' trained in motivational interviewing to increase patient access to primary care, preventive services, and substance abuse treatment system. (Miller & Rollnick, 2012).

The primary advantage of SBIRT is aligned to the intent to 'get ahead of the problem', in many cases before the person themselves recognises they have a problem. If accepted a referral is made using the secure link to agencies involved in the programme: Northland DHB's Meth Service, Salvation Army, Rubicon Youth, Meth Help (phone counselling based in Christchurch) and Whangarei Youth Space.

In Whangarei the practice is thought to have improved the rate of referrals. This is presented descriptively as close to seven thousand Northlanders screened for their substance use and were provided access to a platform for interventions. There is a sizable number of referrals (a rate of about 7%) to support services and improved access to treatment for those who may not otherwise have sought support if the screening had not been completed.

[8] Two common types are AUDIT for the Alcohol Use Disorder Identification Test (Saunders et al., 1993)), and the DAST, the Drug Abuse Screening Test (Yudko et al., 2007).

There are additional benefits within health promotion and for medical students who undertake the screening in the weekends to extends their contact into areas of public health. SBIRT provides improved awareness and access to treatment for ED patients and whānau and offers a capacity to deliver training on SBIRT to other parts of Northland.

Employment services and aftercare

> "Employment from a health perspective."

Before the commencement period of this evaluation, an individual placement and support (IPS) practices programme was established to support those with Mental Health related concerns gain and sustain employment. The programme of supportive IPS was extended as a component of care and treatment for adults in the mental health and addiction services in Te Ara Oranga.

Known as Employment Works, it receives referrals from the Kaipara Mental Health and Addictions team and Is only based in Dargaville. The programme of support follows a model of practice and has been subject to its own recent evaluation (Priest & Lockett, 2020). That evaluation is focused on the implementation of IPS employment support and implementing IPS practices more than whether the programme is effective, or whether it aligns with the intent of Te Ara Oranga.

Offering supported employment services offers an extension of a health programme, which by their own recognition, preceded Te Ara Oranga. However, it has found a natural home because it does align to Te Ara Oranga's mindset that recognises the wellbeing needs of the service user do not strictly fall within health. It is a limited service, bound to services related to supporting employment, not a broader social work capability.

> "We are seen as part of the recovery process"

Employment Works locates jobs and roles for people who find this aspect of their recovery and reintegration exceptionally challenging. The stigma of meth use is overcome through a wrap-around service that involves reassurance and mentoring to service users, and the same is represented to employers who gain the knowledge that their employee is well looked after, drug tested and has help if things go wrong. For most employers in Northland this is a significant benefit because they have an established path of support for the known wellbeing concerns of their employee.

Service users (here meaning meth users who are not part of the Employment Works referral) talk of being careful to avoid the sorts of work they go into because in Northland, methamphetamine use is normalised in some industries. So, in their own words, the difficulties faced by those seeking to stay away from meth are real and confronting to any programme of effort that invests significant resource to get a person well only to find that in certain trades:

> "you are a bit of an oddball if you don't do it … It is like there is something wrong with me if I don't do it. They treat us like we are f#%&ng lepers. At least they could support us trying to get clean …"

Having a service to help navigate and support them transition is to some the most important aspect of their pathway to wellbeing, as they describe, “Employment is key to maintaining my identity”. Or in the words of one, ‘it gave me back my mana’.

Employment Works staff help with training and education across employers in Northland and they support the educators who present to industry.

Employment Works offers an illustration of a partnership relationship in Te Ara Oranga that breaks traditional silos with the disciplines of Health and Policing. It is sometimes criticised for introducing people who are outside Te Ara Oranga’s model, clients who have not done the Matrix Model 16 weeks, but this criticism is based on a failure to recognise that Employment Works is an essential part of Te Ara Oranga’s model.

The approach is supported in the clinical practice:

> “When we do recovery plans employment is a repetitive theme. Let’s face it; boredom is one of the biggest issues here in the mid-north area. Not much work up this way. We do use the Solomon Group (provide education, employment services, and youth services). Also use people potential (courses).”

Considered with the socio-ecological framework Employment Works offers an influence at a community/organisational level. They bridge the gap between employers in the community and the stigma and real discrimination felt and observed by those who are back on the right pathway but are vulnerable to relapse without assistance.

Employment Works is the only formally recognised aftercare service within Te Ara Oranga,[9] and they are a small component in the overall scheme.

The presence of Employment Works highlights the absence of other potential partnerships, with the full range of social services offered within the SWGG. It is common to hear suggestions for the need for other agencies to participate in the partnership, including Department for Corrections, Oranga Tamariki, Ministry of Social Development but with a concern that they simply do not understand Te Ara Oranga:

> We can’t rely on them getting decent treatment in the jails, it is not going to happen. Corrections mindset is really going to struggle with that, so it is better that they are sentenced to the community-based treatments.

The success of Te Ara Oranga pivots on the changes in mindset. Without these there is no Te Ara Oranga and the observation we can make is that because the Employment Works scheme was originally structured, and remains with the mandate to support Mental Health, it already had an embedded client-centred approach. The remaining problem is getting the rest of Te Ara Oranga to understand the critical role they play.

[9] Refer to the Logic Map on page 37.

Aftercare is something the community want to support

The originators of Te Ara Oranga wanted to get marae involved. Not necessarily to run the programme, but to do presentations on the marae and identify addicts and bring them into the process. There is a general observation that the community want to be involved in a quite different capacity:

> "We talked about people returning to the community and living in it. But the community, they need to let them know that they want to connect with you and bring them into the fold. People have talked about having half-way housing, a facility where people can go and live and integrate into the community. Teach them how to get up and go to work each day. Teach them to deal with the social implications. Teach them how to deal with life and get resilience because it might be something they have never had to learn before, in their lifetime. Before we just throw them out there."

The concept of aftercare extends the Matrix Model Programme well beyond its 16 weeks. This is problematic in Te Ara Oranga when the Matrix Model is held up as a model of care, but the implied model of addiction recognises a need for care that might extend up to 12 months. The community want to do it, AOD clinicians report extending patient engagement beyond 16 weeks, cycling people back into the programme to keep them engaged because this is the only way to keep a person within the programme and on the pathway to wellbeing.

> "Some people do come back a few times … he learned something more each time and the last time, he finally got it. He was telling us the things he overlooked last time, the things he needed to put into place, an awareness of the impact he was having on his family and his children. He now has a plan. He was referred through Te Ara Oranga. It took him nearly two years to get to that point, but he got there in the end."

The role of the non-government organisations

Salvation Army, Ngāti Hine Trust and Odyssey House collectively form the non-government organisations (NGOs) group that partner to Te Ara Oranga, largely within the health framework. Te Ara Oranga is a small component of their overall offerings to communities, and they hold vast expertise in delivering a wide range of health and social services. They are contracted to deliver Te Ara Oranga services by the Northland District Health Board. This has meant changing practices (adopting the Matrix Model for example), participating in, and supporting the mind shift change by attending hui, training, and education programmes.

Role definitions for the PWCs has been a problem

A key involvement is that they hire the PWCs. Initially four different NGOs hired four different PWCs, each with a different expectation of the role. The NGO's have found their relationship with the DHB staff to be strained by a clinical expertise holding expectations of the role of PWCs when they were in fact employed and managed by the NGO:

> "Having my PWC working under a DHB clinician who does not understand the project fully is challenging. That has been a gap in processing."

It was also difficult for the PWCs who were instructed to undertake some duties, like home visits, by their employer only to be told they could not do so by individual clinicians.

At the outset of the programme the difficulty, like that with the 'talk and ask' of the community, Te Ara Oranga was still developing its practices. The NGOs had been contracted and they had roles to undertake but the mindset shifts in the organisations took some time to properly settle.

> "They still had questions. They had not been part of the wrestling of what the program would look like. It was imposed. They were not opting in. They were not asked."

The provision of helpline services falls within the Screening and Brief Intervention workstream but are provided by Odyssey House.[10] It is not a 24/7 service but when they are unavailable the second MOU for TAO clients are through the Alcohol and Drug Helpline. Both have 0800 numbers. One Service User spoke about the Meth Help Team providing him with a dedicated AOD counsellor with whom he can pre-book phone consultations. This carries him over between other face-to-face options available in Whangarei.

One-day Choice workshops are available across Northland. This service is provided through one of three NGOs: Ngāti Hine Health Trust (covering the Mid North and Hokianga), Salvation Army Bridge (Kaitaia and Bream Bay), and Odyssey Northland Services (catering to Whangarei and the Kaipara district). Northland District Health Board is responsible for contracting arrangements under Te Ara Oranga's umbrella.

These provide a one-day group workshop for people using methamphetamine. Subjects explored include health, relapse prevention strategies, and other related topics. People can self-refer through multiple avenues including online. They may also accept referrals from other agencies.

[10] **www.odysseychch.org.nz/meth-help** is based in Christchurch.

Despite what is reported as initial difficulties, the providers were open to trying new things and settled on adopting new features of practice central to the model of Te Ara Oranga.

> "It was a blanket rule, you can't have family in the same treatment group. That was a policy, that in a therapeutic session you would not bring family together because they are sharing their deep dark secrets which will then become family secrets. The first time I did it I met with a great deal of resistance, but it worked so we keep doing it."

The role of the NGOs and their willingness to participate is not about a mindset shift, they have always been performing similar work, but they do need to adopt a perception of the role of Police and others within the collaboration that forms Te Ara Oranga. This extends to consideration of their 'competition' in the form of other social and health service NGO providers. In Northland this appears to be co-operative and supportive.

> "Late last year we found that the uptake of the Choices program was drifting. It seemed to be needed in the first year, but the needs of the population have changed. So, we gave up .2 FTE of our PWC funding. All the NGOs gave up a significant portion of the flexi fund as it has not been utilised and we reduced the funding for a number of Choice programs. Basically, we halved the number of Choice programs we were all contracted to do."

It need not be assumed that such positive co-operation exists elsewhere and that the contracting is not highly competitive.

Hemi's journey

Hemi (41-year-old Māori male). Ex methamphetamine user. He has two young daughters; one he is now allowed access to.

- Long-term poly drug user, meth cook.
- Several periods in prison for drug and violence related offences.
- Visits a Te Ara Oranga counsellor.

Hemi stated that he was a whāngai and felt that because of this in his early life he lacked in love and support (later realising this was completely wrong). He dabbled in marijuana early on and excelled at school without really trying. He later moved to Auckland in his early 20s to take a kitchen job at a club in central Auckland. It is here that he first started using 'harder' drugs, which would consume his life for the next 20+ years.

During this time, his addiction to methamphetamine would manifest, and he moved back to Northland, living in Whangarei, the Whangaroa area and Kaitaia. Over time, he started abusing daily, and then moved into cooking, dealing and distribution and became involved with a gang. He stated that the ability to have a continual supply of meth, as well as the ability to make large amounts of money quickly ("make a quick buck") drove this decision. Additionally, his time in gangs led to some violent crime, against his partner as well as other gang members which combined with his usage meant he spent time in jail on several occasions. He states that at the time he felt like 'the man' but realises in hindsight that he was:

> … just pushing poison into the community.

During this period of addiction, he had no desire to work, and burned bridges with friends and whānau, including the caregivers of his two daughters with whom he had no contact. He stated that he had many prior attempts at rehabilitation, including time in jail, family violence courses, drug and alcohol counselling and anger management courses. He felt that the approaches utilised in many of these courses, such as group therapy and 12 step programmes were ineffectual. He felt unwilling to 'open up' and share in a group setting, as he feared losing the 'tough guy' image and potentially being shamed for sharing past trauma and emotions. He also believes that a 12-step approach is inadequate as it is:

> … based on 1950s psychology, and unfairly discriminates against people of colour.

In any case, these attempts at treatment were ineffective, and Hemi simply went along to 'tick the box' or waited until his jail time was finished and returned to his old life. At its extremes, Hemi stated that he could smoke 5+ grams of meth a day and would regularly go through an ounce a week.

Hemi says that the catalyst for turning his life around and committing to kicking meth was the traumatic death of his former partner, who passed away in his arms after a serious traffic accident in early 2019. Hemi blames himself for the accident, stating that the overwhelming feeling of loss and remorse made him realise that he had to turn his life around. At his partner's tangi, one of his aunties recommended that he get in touch with a counsellor involved with Te Ara Oranga. He then reached out and brought Hemi in for some counselling sessions. After attempting to involve Hemi in a group session approach, he realised that intensive one-on-one sessions were the key to treatment. Hemi states that after several sessions, he saw the progress he was making.

In the intervening year and a half since being involved in Te Ara Oranga, Hemi has had some lapses, but has continued to stay in touch with his counsellor and continue his pathway to sobriety.

As mentioned, during the depth of his addiction Hemi alienated most of his whānau and close friends. Since Te Ara Oranga, he has reconnected with many whānau that thought he was lost to meth. This includes his mother and aunties which he mentioned frequently. He also reconnected with his eldest daughter (age 9), having visitation rights of weekends and the occasional holiday. He states that:

> it is all worth it for her, there's nothing better than having her in my life and having her love.

him. He felt judged initially by some of the staff, who did not want a former addict working around children. However, he feels that being given a second chance in employment has given him more confidence in himself, and he has gained the respect of those at the school and its community.

In summary, Hemi states that keys to his sobriety are ongoing efforts in the gym, regular contact and visits with his daughter, financial planning, keeping employed and maintaining contact with his counsellor. He also realises that he has had to remove himself from his former social groups, as many still use meth and have attempted to coax him back into the fold.

What could have changed his life course?

For Hemi, a lifetime of drug misuse may have been curbed if he had received honest drug education when he was a child before he started experimenting with marijuana.

It is clear from his narrative that later in life he attended multiple drug and alcohol courses, but it was not until he decided he wanted change that there was any hope that this would actually occur. He credits his Te Ara Oranga counsellor who was willing to adapt his sessions to best suit his needs and strengths.

The 'economics of methamphetamine' creates a market

Where did the demand for methamphetamine come from?

> "The gangs realised that they had this product that entraps and enslaves people. It addicts you and it enslaves you and you are going to buy what they have got. They start by giving it away for free to family members. This was their marketing strategy. To get people hooked."

The idea that methamphetamine is a marketed product is unnatural to some, but it is essential to the thinking in Te Ara Oranga because it must recognise the nature off the demand it is trying to reduce. Certainly there are many efforts to understand the structure of distribution networks of illegal drugs, and calls for more research in New Zealand (Wilkins et al., 2018). Understanding the distribution of illicit drugs is a practical activity for police or police intelligence, and is supported by an academic research effort to better understand the persistence of drug markets (Bichler et al., 2017; Caulkins et al., 2016; Le & Lauchs, 2013).

> "People, and even the Ministry of Health has been guilty of this, ask why pump all these millions into addiction when we could be using it to combat obesity or something like that. They see addiction as something where somebody made a decision to use a drug and therefore the onus is on them to stop using it. That's not the case at all."

The core question is whether drug users drive demand or whether something else is at play. If you consider the user of the drug makes an active decision, even seeks out methamphetamine as a drug of choice, then perhaps the user-led demand drives demand for the product. On this reasoning, that demand lay dormant in Northland and emerged because of other social problems. This idea is the exact opposite of the experiences that led to the mindset shift with Te Ara Oranga's model, but it is worth understanding to help better understand Te Ara Oranga.

Even though it is rejected now it is within the experience of the people of Northland to know of a time when circumstances matched with the current misconception. Prior to the year 2000, before meth was 'everywhere', we learn from users that 'in the early days' methamphetamine was not what we now know as P, it was produce in a different form that was highly sought after to a very limited market.

> "We used to cut it … two grams of meth with 26 grams of lactose and that would sell for two grand. People would drive up from halfway down the North Island to buy the whole lot."

However, the latent demand theory is rejected in public health; it is rejected by those in Northland who witnessed the epidemic growth of methamphetamine over two decades; and it is rejected by Police who have the everyday experience of dealing with people whose lives are radically altered from an otherwise successful path. It is also countered by the observation that the consumption in Northland is twice that experienced in other similar parts of the country.

It is far more likely that Northland was deliberately targeted by organised crime as the testing ground to establish a wide methamphetamine market. We learned from all parts of Te Ara Oranga but especially from the law enforcement, both locally and nationally that recognised gangs are well-organised and co-operate with each other, as well as with organised crime.

> "Recently, the gangs have come together to cartel it to make sure the price stays high. Now with the border closed, the prices have increased. The gangs are across the entire country now for one reason: methamphetamine.
>
> Australia's extradition policy has also opened international networks that New Zealand did not previously have (they have increased the importations over the past 5–6 years)."

Through the lens of Te Ara Oranga methamphetamine use in Northland (and now, elsewhere in New Zealand) is driven by aggressive product marketing by organised crime, and gangs. Meth is 'pushed', it is not pulled into Northland by the other social problems that exist in the region. It is no doubt a driver of crime and fuels other social wellbeing concerns, especially for example family harm (Whiria Te Muka, 2020) but widespread meth use emerged rapidly in Northland through an organised effort:

> "It is the outlaw motorcycle gangs that import. The Hell's Angels, Comancheros, the Rebels. They work with the cartels who produce and organised Asian money remitters from Auckland that move the money internationally.
>
> The gangs firmly control any manufacturing that is done in New Zealand and the cooks who produce the product."

Gangs can exploit the vulnerabilities of a population 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. There is no doubt that commercial marketing efforts drive the consumption and use of ordinary products, and methamphetamine is no ordinary product.

> "People don't realise how bad this drug is. Gangs will say it will make you feel better, you'll be productive. Then the next thing you know, you are addicted and now you are dealing for them. They are targeting single mothers to deal for them, and they will have to go out and commit crimes to pay for the stuff or they'll beat you up or whatever. Now they have the control. They have gained control of entire communities. You are dealing with a drug here that has almost been designed to be addictive."

What is the business model for selling meth?

> "I think we think that all meth dealers are dummies. They are not. They are marketers. They work at it, they've got the networks, they pay people at different levels. They organise, they control. When they market, they can capture people. No difference to a good business."

The one business operation that neatly fits our observations of methamphetamine supply in Northland is that of multi-level marketing [MLM]. As a business model MLM is a subject to much analysis as it is highly controversial for legitimate products, and a challenge for regulators to distinguish MLM from illegal pyramid sales or Ponzi schemes (Antler, 2018).

Researchers who question the legitimacy of MLM point to companies like Amway, Tupperware and Herbalife as examples of a business model that use 'independent representatives' to sell their products to friends and acquaintances (Antler, 2018). The controversy enters because the basic distinction between a MLM and a pure Ponzi Scheme is that a MLM scheme has a product.

The feature of MLM is that its consultants are incentivised in such a way that it may be more profitable for consultants to recruit others, than to sell products. This creates massive networks. For example, consider that Herbalife has 9,500 employees, but a distribution network of 4.7 million people. The controversy derives from analysis that, for example, shows that 87.5% of Herbalife 'consultants' earned a modest median annual income of just $637 if they made any profit at all (Liu, 2018). In Herbalife's annual report they recognise they are subject to the risk of private party challenges to the legality of the network marketing program both in the United States and internationally (Herbalife Annual Report, 2019).

Multi-level marketing is the ideal business model

MLM is the ideal business model for the sale of methamphetamine. If you are selling an illegal product then you can remove any concern for challenges to the legality of the business model. The business model would remain independently attractive even if the product were not highly desirable through its use by those within the 'distribution channel' or to the ultimate end-user. The observation is made most poignantly by a long-time user:

> "It's because one little rock is worth … more than if it was … more money than if it was a f##king diamond, it's worth more than diamonds and gold per weight. That's why people are running around shooting each other for it. Argh man … It's nothing to do with the substance or nothing about the substance, but it's because these guys drive around, and they end up with a mean car with piles of money in the glove box."

Every level of the MLM is incentivised to sell. In particular, the price of the product is adjusted according to the level a person operates at within the MLM scheme. For some it's a source of pride:

> "They call that front living because you deal with all the f##king … I used to think they were all peasants because they were only having little amounts."

Much like the promise of a good outcome 'for those who work at it' among MLM, most of the distribution network either suffer losses in real term or in lifestyle (through opportunity cost, loss of time, and so on):

> "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."

> "I have never seen a success story from people using meth. Some take longer than others, but it takes everything of significance eventually. Their family or their business … it takes it all in the end."

And from the direct experience of an organised, well-connected dealer:

> "One time, these people, nice people, they were wealthy, they were builders, and they owned their own business. They were quite fresh to the game; you know I told you we take everything from them in the end. Well, they had this beautiful big house, beautiful view over the bay area. We took it all. Well, we didn't take it, they ended up selling it to buy shit with it.
>
> [How long before they started until they lost their house?]
>
> "Not years, I think for them it was a year for them to sell their house and have nothing, nothing at all."

Gangs have refined a business model through experience

Gang members may have no understanding of the research that supports their business model, no more than the chemistry they use to manufacture methamphetamine. It does not take sophisticated knowledge, the method can be passed around from one gang to another, from one inmate to another (Weisheit, 2008). However, what is clear is that they have refined a business model through experience, trialled its impact in Northland, co-operated with others, and with organised crime to produce maximum saturation of the market. That model is ready packaged to be moved to other locations around New Zealand.

The marketing matrix of product, price, promotion, place and people

Figure 15 below offers a completed marketing matrix using the words taken from interviews to describe the marketing strategies of gang members in distribution of methamphetamine. It is a basic tenet of marketing theory to identify characteristics of the product, price promotion places and people that when manipulated can increase the consumption of consumer goods. Making a product attractive, part of the consumers self-image and so on.

Figure 15: The basic five Ps of marketing constructed into a framework but completed using the language of drug dealers who sell methamphetamine, the users who buy it or the lived experience of those who are on a path to wellbeing

Product	Price	Promotion	Place	People
Functionality	Selling Price	Sponsorships	Distribution Channels	Service Provided
Product Manipulation by cutting.	Price dependent on level/loyalty	Free giveaways. Party packs	Multi-level marketing. (Meth users are sellers).	Manufacture, supply fence, deal, security through violence
Appearance	Discounts	Advertising	Logistics	Attitude
White/Pure. Clean	Discounts to those who deal or those is the 'know'.	Direct Marketing, person-to-person sales. (naming different types for example Pink Champagne, Feijoa)	Discounted through a multi-level marketing pyramid.	"I'm your friend" "I can fix your problems" "I can get you everything you want"
Warranty	Payment Arrangements	Public Relations Activities	Service Levels	Customer Service
'Best you can get'	on tick', pay later	Support new prison inmates with opportunity.	[Managed by quality]	24/7 Tailored service to your individual circumstances
Quality	Price Matching Services	Message	Location	Appearance
'P' means "Pure".	Beat the price of competitors.	When you try it you'll see everything they say is a myth.	Trap Houses	Harleys, latest gear *"mean cars and mean chicks."*
Packaging	Credit Terms	Media	Market Coverage	Employee Portrayal
Standardised to 'points' (1/10th of a gram) (sold in 1g bags)	Swap for cars, phones, sex... (anything of value)	Tik Tok Recruitment Videos/ Social Media portrayal of gang life	Aims for 100% of market. Remove Cannabis as a competing product.	Intimidating Powerful

Some of the less obvious components of the marketing matrix require some explanation. Functionality of the product is deliberately altered by the seller. Sometimes a drug-user purchases an inferior product simply because the drug-seller knows that the user will return for what they need in a matter of hours. It might not be the best business practice because users report they know they can switch between suppliers, but it is a recognised practice amongst dealers to increase consumption.

> "He gives them cut stuff and now he's sitting at home going, f##k. They've had just enough that they feel up there, but they f##king need some more … They don't feel right. So, they'll be back. They'll be bigger. Then you can f##king guarantee it. Like clockwork. Now they'll be back wanting more, and they'll bring back money or they'll bring back anything, if they've got no money, they'll bring cell phones or anything ...."

The packaging of 'P' is standardised. No matter which dealer a person goes to they know to ask for quantities as 'points'. The locations in which 'P' is sold are usually referred to as 'trap houses', an introduced American term, sometimes a cynical reference to the intention to trap users into addiction.

Sellers of meth offer credit terms, which they will describe as being 'on tick'. The idea that cash is exchanged, or that cash is necessary, requires reconsideration within this model. Efforts to target cashflows through the distribution network may seriously misunderstand the 'underground economy' that operates alongside a methamphetamine distribution network. The manipulation of price based on a 'level' within the network is a feature of a MLM business model except that instead of a cash bonuses for sales or recruitment, the participant gets a discount on the 'wholesale' product price within the operation. Thus, the price of meth is not strictly discounted based on quantity, except as this overlaps with 'level' a person is within the network.

Gangs regularly distribute 'party packs', and free giveaway samples of meth. They label the product as 'Pink champagne" and "Feijoa". Product giveaways are the usual preserve of corporates. They will also be used try to keep people in the game:

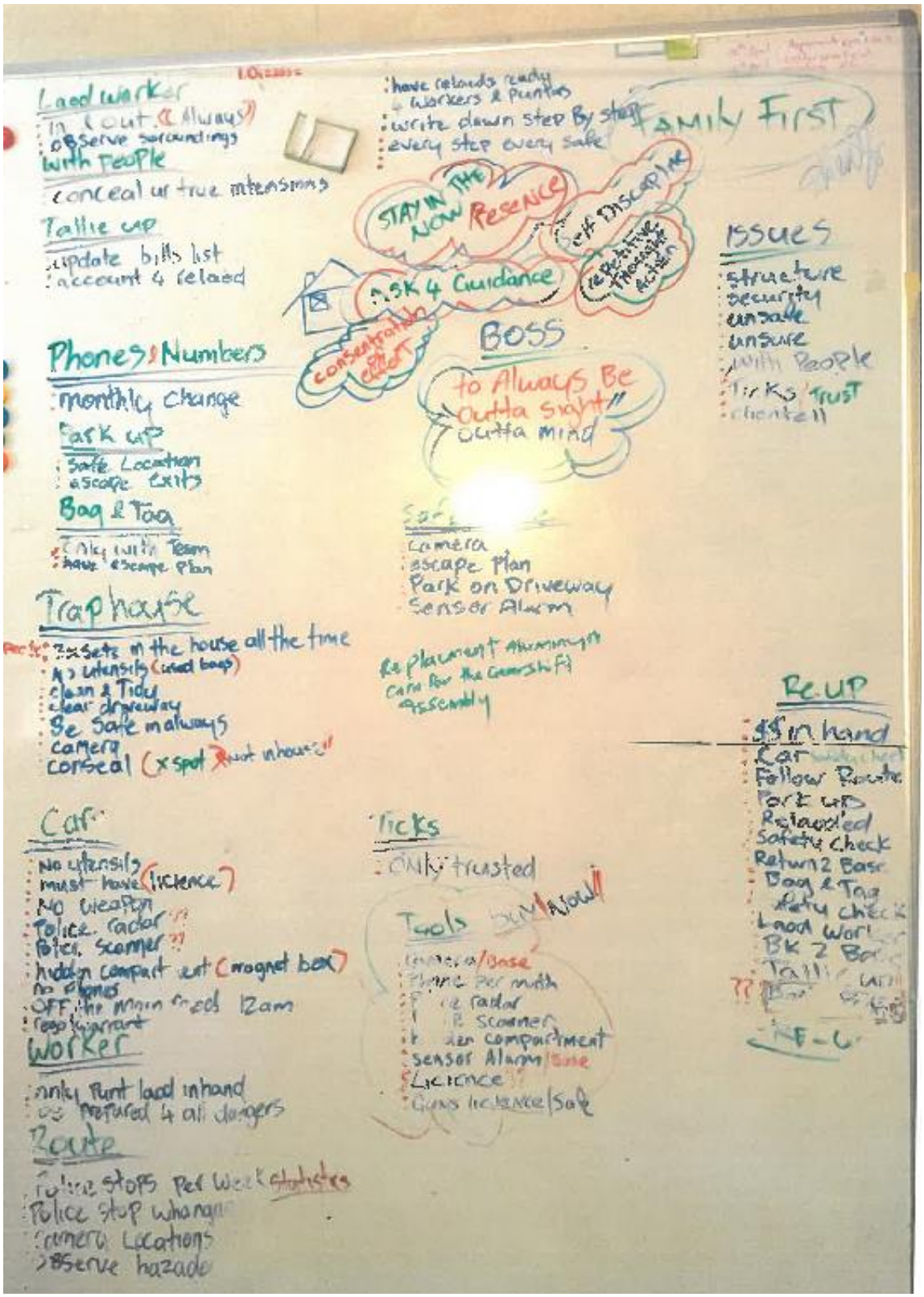
> "It is 'amazing' how many people come around now that [he and his partner] are clearly trying to get clean, yet they offer them meth. They did not visit before and offer it. It is like they are doing it just to be smart f##k you know … I feel like smashing them. It is like they are haters, that we are doing what they can't do ...."

Gangs actively overtake drug alternatives, like a good business removing competition. That is, the widespread use of marijuana is far less profitable to them because at least from any form of business analysis the product is not within a controlled supply chain. Methamphetamine's supply chain is tightly controlled within the MLM model:

> "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 brought it all and took it away so the only thing out there is alcohol and meth."

To remove any remaining doubt that Northland, Te Ara Oranga, and really the whole of New Zealand is attempting to hold back a well-resourced, well-organised unregulated and unrestrained business model, Figure 16 presents an image from inside a trap house taken by Police. The image illustrates that even the lower levels of the distribution network operate as a business.

Figure 16: Captured intelligence image from a 'trap house' showing the marketing and business operation model for the distribution of methamphetamine



Note: Image supplied with permissions from the NZ Police.

The image represents the business operating rules found inside a ‘trap house’ supplying methamphetamine. Careful examination of it will reveal an insight into the level of thought, strategy and planning that exists at the lower level of the organised distribution channel. Ignoring the spelling, it includes reference to the leadership, resilience, tactics, and instructions to take a strategic view of their business. It has policies, procedures, and planning. It begs the question of what level of planning and strategic intent exists at higher gang levels.

The one additional highlight is the statement at the top left corner, to ‘hide your true intentions’. It applies to interaction ‘with people’ but whether this is meant to apply to the community, or customers remains open to interpretation.

Two things drive the demand for meth: use and ‘promise’

> Counsellor: ‘Can’t you see what you are doing to your own family?
>
> User: ‘In my own way I am helping.’

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. Not all take it up—some professionals run for years without being involved, some ‘cook’, others commit low-level crimes: shoplifting, burglary, and theft. However, you do not need to be connected to a gang, or organised crime to be part of the distribution network.

> “If you have got an opportunity to be involved in some wealth creation, albeit illegal, but is it going to give you a step up? I can see where they are coming from. I don’t agree with it, but I can see why they become involved in that illicit trade. It is sad.”
>
> “It comes down to the circle you are in. Doesn’t matter where you start. Can be in your suit and tie but eventually you are buying straight from the gangs.”

Users of meth are almost always sellers of meth

The observation of everyone is that users of meth are almost always sellers of meth. For some people, the sale of meth has taken over from the cultivation of cannabis as an alternative income. The motivation to sell methamphetamine may well be driven by the cost of use, but it is not the only motivation.

> “Methamphetamine is a lifestyle. I lived like a king. Wow! I had people from all walks of life just wanting to be around me. Painters, professionals, everyone. They all wanted to be around me because of what I had.”

The wide involvement of users in the sale and distribution of meth makes identification of higher-end suppliers exceedingly difficult. Te Ara Oranga's model of operation identifies the use of meth as far more acceptable to the sale or distribution of it. But the tension retained is that the clientele, customers, service-users, addicts may readily withhold any connection to gangs or their involvement in sales as this naturally invokes fear of reprisal from gangs and will re-invoke reservation about co-operating with referral to Te Ara Oranga. This has both wide ramifications, including for the individual's treatment.

The marketing pitch

As with any MLM business model there is a basic requirement to recruit, to sell the lifestyle and to maintain the business structure. Prison is an obvious place to do it. Gangs actively recruit in prison based on a promise of a better life:

> "I've seen it first-hand too. You go in and you see young guys that come in … the first couple of weeks in jail …
>
> Within a couple of weeks they're throwing around slang, gang slang and then, and talking to people about it ... You know, by the time they'd been in there for a few months, they're all about ..like, get out, get some 'P', sell some drugs, get a mean car, they are all about that. … You can just see them early on, they are quite nice guys, by the time they get out, they're just hardened crims."

The pitch is straightforward, what marketing professionals refer to as a 'call to action': get out, borrow from the gangs, work to sell drugs, have a good life, have (in their words) a 'mean car and a mean chick'.

Recruiting others is about creating connections

It is a popular idea that addiction is caused by a lack of social connection or more accurately the consequences of an impoverished environment. The idea stems from research that is not normally presented in its original form (Gage & Sumnall, 2019) but is used more as a touchstone:

> "A lot of the women who come to us in treatment say they just started when it was shared around at parties, it was a part of socializing. In terms of the opposite of addiction it is connection. If it keeps you included in the group Kaupapa. A lot of our women say they thought it was harmless, until someone reports them to Oranga Tamariki, or until something happens, like someone turns up with a gun."

However, those on the frontline recognise that the sale and distribution (and use) of methamphetamine have a more pragmatic appreciation of what drives demand for meth:

> "Any perception that those involved in the supply and use of illegal drug commodities are all uncoordinated or unsophisticated is wrong. Supply is not just at the level of gangs as people trade drugs as a commodity to generate cash, a living and in some cases, survival."

It is somewhat naïve to think that the distribution and sale of methamphetamine is an uncoordinated response to user-led demand, driven by the choices of people looking for drugs to escape their poor circumstances. The idea fails to hear the voice of the people who have experienced the effect of meth sales merge and take hold in their communities.

The kernel of truth that allows the misunderstanding to persist is the fact that there are dual motives for participating in the underworld of meth sales:

(1) use of the drug; and

(2) a desire for an otherwise unattainable lifestyle.

From the outside we want to treat the former but assign culpability to the individual for their greed, for their role in pushing, recruiting others, participating in associated crimes and for all the harm they cause. We separate these motives when in fact they are connected.

The reason an individual holds any motivation to participate in the sale of meth is a feature of the marketing of the product, embedded in the business model operating to distribute it. The business model is actively promoted to those who are vulnerable because they have convictions for other drugs-use, minor crime, or, because their use of the drug itself impoverishes them. It is by design that the person is trapped into this cycle. It is a brilliant business model aligning the ideal marketing scheme with the perfect product to sell.

The most vulnerable are new inmates in prison. The following report from an ex-dealer, reformed drug user illustrates their plight:

> "They've made a million connections to others, and they're off home. The thing [Prison] is the whole culture and their teachers … So, they get out thinking, it's cool. They're going to go and get an ounce a meth off someone and start getting … they're going to be the man. They'll have a cool car with a mean chick beside them. This is what their get out thinking is.
>
> And it's just f##ked. It's nuts, man, because it's not what happens, mate. They get busted with a gram or they end up owing some gang or something, Next minute, they're getting hidings or they're getting locked up and then their kids are getting taken off them. They get out with this picture that he was going to be cool and their whole life probably gets destroyed in the first six months of it."

The sale of meth is itself a strong motivator for those who have been dislocated by lack of opportunity, through convictions, through abuse and neglect. It drives a cycle of involvement based on a false promise of reward. The model is offered to **everyone,** but it is the vulnerable who are most likely to take it up.

> "You watch people who have never done it (meth) and see how quickly it takes hold. They can't see it and they won't until it is too late really. You feel like pulling them out of it so they can see it from the outside in."

We sought to learn from the experience of AOD clinicians, Police, lived-experience workers, users, and reformed dealers to describe how long it takes from first use to having a completely destructive effect on a person's life. The response we received is consistent with research literature that recognises wide individual difference for a meth-use drug trajectory: six months to over six years.

A social marketing response: from the outside in

Perhaps because much before the year 2000 there was no real market for methamphetamine in Northland, there is a special appreciation within communities that the demand for meth has been driven by an active effort from organised crime, including gangs. Communities witnessed the destructive impact of the development of that market in a time of otherwise unprecedented economic advantage. Consequently, they have a sensitive understanding of the need to drive down that demand to return to a time when meth use is not normalised in their communities.

> "We are about making a stand. What does it take whānau to do the same? That is our message to our whānau, what is it going to take? If we stand together and stand as one, we can make them rethink what they are doing right now."

The real problem is not the sophistication or the allure of the gangs' marketing pitch. It is that before Te Ara Oranga there was no counter to it. There is little in the way of education, no alternative, no messaging to educate young people. Te Ara Oranga co-ordinates a much-needed response and it should be recognised as one of its best successes, especially as it achieves this in partnership with communities and Māori.

The reported impact is that people have a place to go, they have an understanding that there is a pathway to get help or help others.

> "Before there was no help. The talk back in 2017: try the helpline, which isn't even working! They are not talking like that now, there is support, you can get connected."

Te Ara Oranga embraces a social marketing approach, learning from Smokefree that is it is possible to drive down demand for addictive drugs, even those supported by the most powerful marketing efforts of large corporations.

The billboards, website and social media have all already been acknowledged. The formation of websites, fridge magnets, billboards, waiata, and stories can also be misunderstood as a requirement of any modern social-services intervention, a prerequisite of a communications plan and an ordinary part of any effort that promotes a healthy lifestyle. Seen as token effort to facilitate the mere presence of activity that is Te Ara Oranga would seriously underestimate the community's intent and the impact of their voice, their sophisticated understanding or what caused the influx of meth into their communities.

The common concern is that Te Ara Oranga does not do enough to address the messaging to young people, to communities and to Māori. In considering the balance between providing pathways for treatment and driving down demand, Te Ara Oranga is imbalanced towards addressing demand for services. It provided a 'one-off information campaign'. However, Te Ara Oranga has opportunity because it has shown by example how successful a campaign can be, to meet the information needs, counter the gangs' narrative and work with communities to support people in a supported 'public health model' that takes it away from a health referral model and aligns with its intent.

> "The thing is you are never going to get on top of supply because there is always profit and someone is always going to want that profit. At some point you must think about effecting their market, taking away their profit, the demand. TAO introduced the demand target into the policing equation."

Andreasen (1995) defines the activity: "Social marketing is the application of commercial marketing technologies to the analysis, planning, execution and evaluation of programs designed to influence the voluntary behaviour of target audiences in order to improve their personal welfare and that of society" (p 7) (Andreasen, 2002). Evidence suggests it is a successful approach. Stead et al (2007) who reviewed the effectiveness of social marketing in promoting individual behaviour and generating environmental and regulatory changes in relation to alcohol, tobacco, drug abuse, and physical activity.

The social marketing effort of Te Ara Oranga was the initiative derived from the community consultation. It is the community of Northland that understands and supports the need to directly undermine the meth business model. The community thought it so important that it contributed resource and in-kind support to magnify the very modest budget set up to achieve so much more than could be achieved alone. Te Ara Oranga acknowledges Northland communities' request for a counter to the narrative to match the same effort and resource of organised crime.

The activity and co-ordination of effort to produce a successful counter-marketing, social-marketing campaign may be underestimated.[11] As it is famously expressed it is easy to question, "Why should the devil have all the best tunes?" but creating a successful alternative is no easy feat. An unresearched, untested and unmonitored counter-offer may not strike a chord with the target audience and not seen as credible. It may not compete with the well-honed marketing pitch offered by well-refined sales networks that offer meth and pitching a good life:

> "The typical narrative around meth is that it is evil, damaging, bad, but that is not how people feel when they use it at first. That's the same for most of our clients, for the first little bit they are more productive. They can do heaps of things. They have more confidence, and it can last for a couple of years before it turns to shit."

[11] **https://filtermag.org/samhsa-meth-propaganda/** – this link offers a review of the 2019 'SAMSHA Meth Monster" campaign and the almost immediate criticism of it being 'fear-mongering propaganda'.

However successful the current campaign has been, the social marketing model is not supported by the usual efforts (and resources). Commercial marketing campaigns use market research, consumer testing and campaign monitoring. A commercial campaign will constantly assess the impact of their interventions and adjust the pitch accordingly.

In public health this takes the form of market research surveys (assessing demand for meth, attitudes quantifying concepts like denormalisation), market segmentation to identify targeted intervention opportunities and design testing, assessing the impact of design on target groups, analysis of market penetration and impact.

> "I would like to see more promotion, but not billboards saying it is rife in the Hokianga and things like that. I would be mindful of how we did it if we were to do another promotional round. I would make sure that our key people in the communities are kept up to date about how Te Ara Oranga is going and tracking and the things we have achieved. I would just make sure we have really good connection and prepare to get a few questions from them."

The effort to inform was set up at the beginning of the programme, and like any campaign it has a lifecycle and the need for reconsideration, revision and nurturing to meet the demands of a dynamic market, especially against the competition.

> "The advertising has died down. I don't think people realise it is still going. People by and large have heard of it, but I think people think it is something from a while ago and don't understand all the work that has been done and keeps going in the community.
>
> There are certainly still some signs and billboards up in the North and the communities. There is still some advertising on the local radio, so it still exists, but not to the extent it did before. It seems to have been taken out of the public eye."

Social marketing is not just about providing information

There is a general recognition of the activity as producing many positive outcomes. These include:

(1) raising awareness of the strength of concern that exists in the partner agencies: social marketing spreads the core messages of Te Ara Oranga

(2) the programme is a place to go for information, support, or referrals

(3) the advertising forms a brand around which a community can respond.

This gives them licence to emphasise that their community is an unattractive place in which a meth dealer might do business. This allows Northlanders to create "a groundswell from pockets of people, who are generating public awareness around meth and really promoting the meth free option."

Te Ara Oranga has started well but it is likely impossible to keep that momentum up without the co-ordinated support to accompany that effort. They are out-resourced by the profits of an illicit trade, but they have demonstrated the demand for the counter-narrative.

Early problems with Te Ara Oranga

Data collection and sharing issues

Police officers who make referrals and follow-up with Health found that Health cannot share information about an individual progressing through their system. Consequently:

> "What frustrated me was that we were getting measured on the numbers of referrals we put through from the police because we had no outcome, or we had no way to know if it was useful or whether we helped the right people.
>
> The feedback loop is vital. We make the referrals and then it is passed off and we don't hear about whether those people we did refer have made it through to rehab and how they are doing."

There has been no central register of the referrals so that a record of who is referred, why and when is recorded for evaluation, reporting and general programme monitoring. Sharing of information requires accessing the base data (from Hospital Record, for example) and it goes against well-established protocols to easily share it with partner agencies.

Whāngaia Ngā Pā Harakeke set up a common database system that collates basic information and facilitates sharing with partner agencies. Something like this would overcome the problem for Te Ara Oranga. However, from WNPH experience, initially each location developed a unique platform for data collection. This created difficulties comparing progress in different regions until standardisation aligned maintaining, sharing, and reporting from such sensitive datasets.

Te Ara Oranga's logic map indicates it will produce progress reports, which it does. However, reporting on progress and monitoring changes across time will be much easier with a supported, planned reporting structure. This should be co-ordinated with other areas if the model is advanced to other locations to facilitate comparisons between the performance of the programme.

Te Ara Oranga is under-resourced to monitor and manage expectations

The community felt a similar issue, based on a misunderstanding of Te Ara Oranga with raised expectations. Police were not well-positioned to respond to the volume of information received from the community, who then felt let down that action was not forthcoming. In taking the responsibility for a large social issue Te Ara Oranga found huge demand for service Northland, a demand it could not meet.

> "Community members report user's and dealers to police. They see nothing being done and no feedback is given. This has seriously undermined trust in some sectors of the community. Police need to explain that they cannot arrest without evidence."

Intra-regional differences

The geography of Northland creates problems with locating limited resources. They are not always optimal and should not be expected to be in a trial set up to establish new ways of doing things. For example, there are four PWCs, one has the client-base in Kaitaia (population 5,000), far fewer than the client base in Whangarei (population 58,000). There are calls for detox in places like Kaitaia, when in practice the only detox clinic for the entire region is nearly 200 km and 3 hours' drive in Dargaville. The employment services operate in Dargaville but have a wider remit. SBIRT only operates out of Whangarei's emergency department. Police are seen to work well under the influence of the meth harm reduction team (based only in Whangarei) with a suggestion there would be considerable benefit extending the team to locations in the Far North.

The effect of this distance should be to underscore the value of providing consistent service, standardised models, and training. It is recognised that the TAO model has not necessarily embedded evenly across the region.

Funding issues

The programme was set up on a very modest budget and it has stretched this out using community in-kind resourcing, and through the allocation of resources from Police and Health.

It is a feature of Te Ara Oranga that it was set-up by the Proceeds of Crime Fund. The fund is a pool of money seized from criminal activity, including the profit and assets from the sale of illicit drugs. The intention of that legislation is to redirect the seized money to help offset, and repair, the harms methamphetamine, and other drugs cause. However, it does not fund across the long-term:

> "If we hadn't had received the Hypothecated Fund, I don't think Te Ara Oranga could have gone ahead."

In the early phases the perception is that funding kept stopping and starting. The lack of security, particularly for the NGO's was 'harmful'. They were creating new roles, such as the PWC, training people without the confidence that the money would continue being available. This certainly impacted on the continuity of the programme and the ability to plan its development. The problem was addressed with secured funding within the 2019 Budget, but it was less than ideal that the funding for a long-term initiative was time-limited at the outset.

> "We found it was hard to recruit people since we didn't have some longevity about the contract and NGOs had to wear a bit of that and they were frustrated because sometimes their contract had actually run out before we could verbally commit to pay ... but I can't offer a contract unless I have a contract to offer …"

It might also be acknowledged that a trial should give maximum opportunity to succeed, it should not have been constrained by resourcing into standing up an operational model (against huge, unanticipated demand) when it was asked to try, and test, unconventional things.

It is evident that it did not implement many desirable features: Family Conjoint Therapy; Whānau Aftercare; a consistent model of operation across all locations; detox clinics in locations outside Dargaville; a meth harm reduction team based in the Far North; drop-in centres, research, and monitoring of community attitudes; market testing of the impact of social marketing, more widespread and wide-ranging social support services to compliment the Employment Works initiative. The problem that results from being resourced constrained in a trial is the ability to detect the impact, effectiveness, and successes of what is otherwise easily recognised as a new way of doing things.

> "Do we need more resources to maintain these community initiatives? I would say so, yes. Very much so."

Community consultation needed to be ongoing

Providers tell the story that the consultation with community needed to be brought along the journey when It is widely accepted that consultation and engagement with the community has been positive. It is evident in the contributions communities have made to the overall programme, but co-design has not occurred. This leaves a gap and an opportunity within the revision or expanded programme that would allow components of the programme to be revised.

> "They did not understand co-design – they rushed the process."

Possibly the greatest impediment to the consultation was that Te Ara Oranga mindset and practices have emerged over its first two years of operation, they simply did not have a clear model of operation at the outset. The community probably did not fully understand the opportunity of the shift in mindset on offer at the time. The advantage of a new model of operation may be the building of stronger relationships between communities and police:

> "We had to find a balance with the purpose of the funding as well as engage meaningfully with the community. This was done by having credible community leaders and a series of hui to both 'talk and ask'. Here is an opportunity … but there are some parameters to it in terms of actually providing treatment for people."

The idea of community consultation is easier to express than accomplish with a developing programme. The need to both 'talk and ask' made sense at the time. However, chief among the claims is the view that the community was a part of co-design, a term described as now 'ubiquitous across government, including in significant strategies, reports, engagement models and procurement requirements' (Mark & Hagan, 2020).

> "The hui's were really successful and well attended. There was a real commitment to go back to those, with a bunch of resources were what people had wanted in a format. That has been quite a big part of our push, are things appropriate to this community by way of promotion. Some of the video and stories were moving and educative in their process."

Part of the problem seems to be either hearing what the community wanted and detailing the actual intent of the programme, indicating where the (very limited) resources could be applied and what the likely outcomes were going to be.

> "What could we do differently? Make the time to get the co-design right. Involve everyone, people with lived experience and include as many people from the community as possible. Those delivering the services and not just Alcohol and Other Drugs (AOD) experts. Those who provide social services, iwi, council, and all of those. Then what ever you arrive at, it is something the people feel ownership of and it's their ideas. It is tailor made for their community, region and area."

Te Ara Oranga remains somewhat blind to the real effect of their efforts on the community, notwithstanding strong initial engagement. A concern we identify is the need to support social marketing efforts (aimed at the community) with the expected insight to be gained by research, testing and active monitoring of those messages.

Problems with group therapy

> "From a resource perspective using group therapy is less intensive. One therapist for many. And there are other benefits."

The Matrix Model offers group therapy at a staple. However, the Salvation Army, pulled the Choices program out of Bream Bay (in Ruakaka) because in that community, it just never took off. Ruakaka is "the heart of meth in Northland", but it is a small community and people did not want to be attending programs in their own community. People worked around the problem of anonymity by going to Narcotics Anonymous groups outside the region or they would choose to travel to Whangarei for support. The problem was specific to a locality, but it highlights the need to carefully review the application of the programme as it is implemented.

Others also found that group therapy sessions did not work for everyone, in all locations. Depending on a person's stage in their individual trajectory, group therapy sessions could trigger the wrong response:

> "But I have also had feedback from some meth users saying they don't want to go to groups because so-and so is there, and there are drug deals going on and they are worried about safety. There are small towns up here. They will put some people off the groups."

Some people would move to Northland to break away from the connections they had to gangs and dealers, to clean up, they would return home. However, group therapy sessions would establish new connections, triggering the wrong outcomes.

> "Many people come to Northland to get clean but there is a risk of putting together groups of users as it is another way to meet dealers."

The solution introduced was to install a more intensive orientation session that assessed the individual's stage, and actual needs and to triage accordingly.

Problems of implementation

The evolution of Te Ara Oranga from other programmes, and its relatively quick stand up, means it did not develop usual documentation and processes.

Te Ara Oranga developed its programme ahead of introducing specialised support for both staff and service users because it adapted existing practices. They also underestimated the demand for service:

> "When Te Ara Oranga first started there was a tsunami of referrals coming in, but they had not set up the treatment. When they came through, they were divvied up amongst the existing services, not Te Ara Oranga pathways. The staff in the existing services were not increased to deal with the extra workload. I would recommend that in future the treatment lines are established before the program goes live."

The partnership between police and NDHB should be celebrated as a central success of the programme but that does not mean service users will accept it:

> "The form was sent through and the doctor was astounded to see the two logos on it: one DHB, the other NZ Police. I felt there was little chance his client would sign a 'police form.' He had thought Te Ara Oranga was a health service. Other meth addicts who had been presented with this consent form … they too agreed it was 'crazy'."

The linkage to other aspects of mental health is a missed opportunity. SBIRT in emergency rooms is good but the cross-over to mental health means some people may slip by unnoticed.

> "I still don't think they do routine drug screens on everyone who goes into psych. I think that is crazy."

New roles required adjustment with experience. The PWC role was an experiment with the unknown, at first. A suggestion is that when establishing PWC roles an orientation should include a buddy system for each new one to learn from those already in place. A proper orientation package needs to be developed which covers issues related to risk management, the differences between clinical and non-clinical activities, training in Te Reo, cultural awareness, risk management/ de-escalation skills, and basic mental health to better assess client's needs.

> "The PWC role can be dangerous. There are times I wish I had someone with me when I do home visits. Where there is meth there are gangs, and where there are gangs there is violence. I have been threatened by dealers."

The volume of demand for services was probably underestimated in setting up new roles and procedures. These are now revised from being reviewed but at least initially a quick turnaround between acceptance of the referral and contact is held up by misunderstanding between parts of Te Ara Oranga's operation. To meet the 24 hours turnaround required ideal conditions:

> "Protocol dictates I have to arrange transport, liaise with Police and clinicians before I approach users/whānau. This means that the 24–48-hour response time from referral is often not met. Clinicians are so busy they can't respond in this time either."

The development of the programme did not create enough opportunity, and possibly not enough review to 'talk and ask'. The effort to inform and hear the voice of the community was more one-off and it would benefit from being repeated, now informed by experience.

> "One of the learnings here is bringing the community in to help you design, it is absolutely imperative. So you cannot take the framework here and say build exactly like this."

What success looks like

> "Back in the day people would be passing around a joint, now they pass around the pipe. They say you can't find cannabis now. Meth has almost replaced it."

To central Government success looks like returning to pre-2000, to a time when methamphetamine did not wreak havoc in the communities, when it was restricted to being a 'drug of choice' for a handful of people. For Northland, success may be a more moderate and realistic ambition.

What makes Te Ara Oranga unique is the establishment of a partnerships between Health, Police and NGOs, and between that collective partnership and the community. The client-centred orientation manifests itself in new practices, such as employment services, health promotion advocacy located in emergency departments, Pou Whānau connectors, and the meth harm reduction team. Te Ara Oranga can recognise success in the strength of the partnerships, independent of any concern to the other outcomes. It conveys a strong message to the community who are empowered with pathways for seeking help and given hope for change.

Success for Te Ara Oranga will be being able to refine its practice within the new way of thinking. New people should be able to join the mahi, pick up from where others have made gains and advance and develop it further. Success will be measuring the benefits of this hard-fought ground and returning insights for making improvements. Success is recorded at an individual level in the reports of changed lives for service users.

Success for Police is when the community are empowered and resourced to identify the users and refer them to TAO. When the community is the first to support whānau, not Police, and certainly not Health, then the harm from methamphetamine will be identified at the earliest opportunity.

Success for the community will be when community-based service providers are resourced to address the problems of their whānau without the need for large-scale programmes. Providers offer that the success of Te Ara Oranga is that people have delivered the content in a way that works for their individual community.

The ultimate success will come from knowing that collectively Te Ara Oranga are winning against gangs and organised crime by making Northland an unattractive and unprofitable place for dealers to do business.

Limitation of this evaluation

The attempt to stay within scope means that much of the material shared with the team is not represented in this report. Those we dealt with have sophisticated knowledge of methamphetamine addiction and treatment, knowledge of best practices and emerging trends from trials conducted elsewhere. Expert knowledge is reinforced by the deep experience of service users and their whānau. Those insights did bear upon the evaluation themes and have not been ignored in consideration of the opportunities within the rest of the evaluation materials.

Importantly, we talked with only those who could shed light on Te Ara Oranga, we have not provided insights to a comparison that would highlight the differences in mindset and practice in other parts of the country. We leave this to the reader to compare the situations they confront with the description of Te Ara Oranga represented here.

We did not speak to the community, though we gauge their involvement from accounts and as it is manifest in their actual behaviours and obvious contributions. There is an opportunity to bring the community into the ongoing revision of Te Ara Oranga, and while this might challenge aspects of the clinical leadership and governance (which prioritise standing up a treatment response to flood of referrals), there is a role for the community to inform what works in driving down demand, de-normalising meth use, changing attitudes, providing aftercare, and supporting and maintaining referrals.

The range of expertise (employment services, AOD treatment protocols and social marketing and so on) makes detailed consideration of the impact of each component of Te Ara Oranga's approach difficult, nearly impossible to achieve in any single report. We deliberately stayed away from engaging in any active debate in the research literature that evaluates components of Te Ara Oranga such as SBIRT, or motivational interviewing. The outcomes evaluation (next section) was planned to assess any effects of the programme and make detailed investigations of its component parts viable.

A summary of lessons to be learned from Te Ara Oranga

> "We designed this together. We stand together. We walk together."

1. Te Ara Oranga emerged from the accumulated experiences of similar programmes developed and implemented in New Zealand. It is distinctively different from all other programmes that operate internationally, and especially those operating in places that have wrestled with policies polarised between whether to de-penalise or decriminalise, such as Portugal and Sweden.

2. Te Ara Oranga adopts a unique philosophy that at times those within it do not fully recognise. In shifting direction, it changed the traditional mindsets and practices of Police, Health, NGOs (Salvation Army, Ngāti Hine Trust) and community groups.

3. The central aim of those that developed Te Ara Oranga is to eliminate the harms of methamphetamine, not treat the problems of addiction. No theory of addiction is implied in the model of service and there is no barrier to entry based on the level of harm a person experiences.

4. Te Ara Oranga can be distinguished from all other programmes that address the consumption of hard drugs. It is not a health referral model nor a decriminalising or even de-penalising model. It is much more a public health model that brings together non-traditional 'health' social services to encompass a wellbeing approach.

5. The community developed Te Ara Oranga by looking for examples of successful programmes. However, the partnership formed between Health and Police shaped and developed the programmes into its current form.

6. The use of the Matrix Model is an effort to provide a consistent service that aligns to a new way of thinking. There are other models that could be adopted. The Matrix Model is recommended but it is not essential. What is essential is consistency of service, collective action, and a common understanding of an approach. The Matrix Model does indeed facilitate these outcomes.

7. For Te Ara Oranga, consistency of service provision is additionally maintained through specialist education, training, and regular meetings. Supervision of frontline staff is recognised as an ideal, though it has not always been supplied or been well-timed.

8. Strong advocates for the programme acknowledge they did not get the model right and that they are evolving a programme. What they sometime fail to acknowledge is that it is their ability to do exactly this that is the change that makes the programme special and unique. To re-create this requires organisations not just meeting; it requires, at least, champions from each organisation willing to suspend some deep-seated preconceptions about policing, addiction, addicts, methamphetamine, gangs, treatment, and criminality.

9. The effort to inform the public of Te Ara Oranga illustrates the opportunity to counter the gang-led business model that markets meth, by informing people, giving them alternative narrative, in their community about the true impact of buying in to the false promise.

10. Northland offers only that they have a good framework, not a perfect solution. The best solution requires shaping at a local level.

Recommendations

"They can't just decide to stop using the drug. If it were one of my family members, I would just want them to be able to get the help they needed."

1. The communities of Northland witnessed the introduction and spread of methamphetamine, and they have strong opinions about how it came about, how to stop it and how they can help. There is much to be learned by an effort to listen to them to refine a programme within a broad Te Ara Oranga framework. It is communities (along with service users and whānau) that recognise the need to address the 'business model' operated by gangs, alongside offering service to those in need. Now the model of Te Ara Oranga has been established and can be properly conveyed, and evidenced, it is appropriate to revise how well the model matches with community need and expectations.

2. A common protocol of monitoring a person's progress would assist cross-agency support beyond the initial referral. There are systemic problems associated with a trial implementation. Current data-sharing protocols significantly impede the partnership, and these should be addressed as a part of the revision and expansion of the model elsewhere. A common, clear, consistent cross-agency data protocol would be helpful.

3. Driving down demand means destigmatising users and their involvement and role in supplying the drug to others. Political champions and leadership have a role to play in supporting Police's exercise of discretion by supporting law changes that align with the basic principle in operation within Te Ara Oranga.

4. Pou Whānau connectors should be a better-defined role supported with training, advanced-education, supervision and potentially expanded across other wellbeing concerns and to aftercare.

5. The social marketing effort to drive down demand is seriously under-resourced. The intent is driven by community-demand as is evidenced by the fact that the particularly good progress is developed using community-supported resource. However, while Te Ara Oranga's governance rightly focuses effort to deliver services, the effort to drive down demand is somewhat neglected.

6. The programme requires a research-informed, actively monitored, evaluated social-marketing campaign. As Te Ara Oranga might be developed elsewhere there is significant economies of scale in developing and supporting Te Ara Oranga programmes at a National level that could co-ordinate and support systems of common operation at a local level.

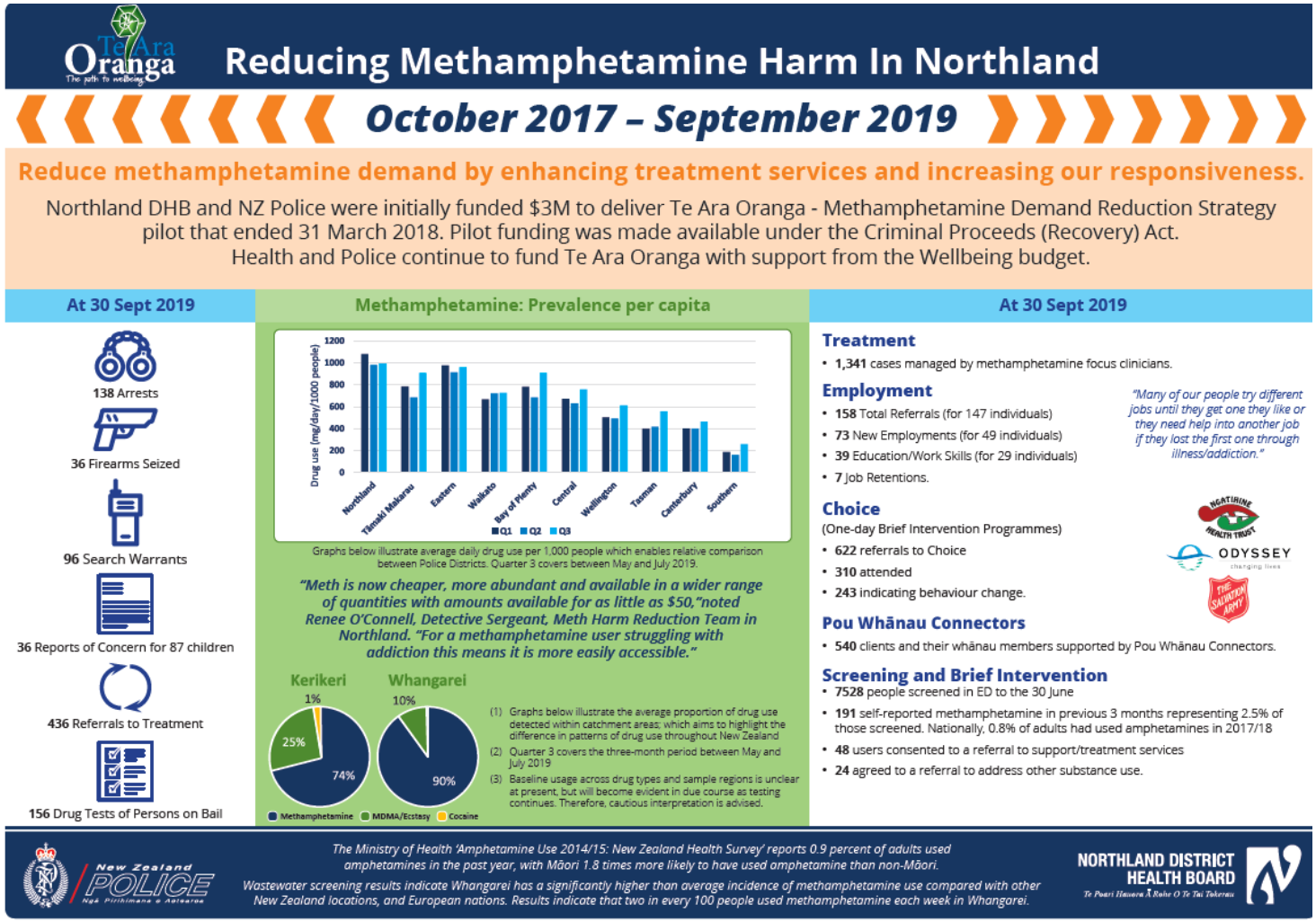
7. The analysis of the counter-marketing opportunities is normally undertaken as an 'Environmental Scan'. When co-ordinated with market research, designers can then produce effective, sustainable marketing impacts on target audiences.

8. The programme's support infrastructure requires significant attention. Te Ara Oranga are so overwhelmed by an unanticipated demand for their services that they prioritise resource to support treatment needs. However, in so doing their ability to progress, monitor and evaluate the performance of their new efforts is undermined.

9. We recommend collating the experiences and current practices of Health, Police and NGO providers in a comparison location to better understand the potential impediments to the implementation of Te Ara Oranga elsewhere. Northland responded to crisis and an almost overwhelming need. A Te Ara Oranga model elsewhere may not be embraced with such support in locations with only an emergent problem.

Appendix A: Macro-level indicators of progress of Te Ara Oranga's programme

A supplied infographic representing the macro-level indicators of progress of Te Ara Oranga's programme.



Appendix B: Prevention First – 2 years to 30 September 2019

What did we do?	Who did it?	How did we do it?	How much did we do?
Considered Police enforcement to break methamphetamine supply chains	Police	Intelligence led approach – using a combination of proven, evidence-based tactics and developing innovative tactics	98 search warrants executed 138 people arrested (resulting in 28 referrals) 36 firearms seized 62 people charged with methamphetamine dealing offences
Monitored bail to offer alternatives to remand incarceration	Police	Performed bail checks and implemented drug testing of bailees with abstinence conditions from March 2018	157 drug tests arranged for persons on bail 132 drug tests completed 92 positive results 40 negatives 12 failed to attend 13 unable to locate to serve 71 arrests relating to drug tests 55 from positive tests 15 failing to present for test and other breach of bail First district to implement Meth Harm Team Court Bail Drug testing – Northern regional trial, liaising with PNHQ for national rollout
Harm reduction	Police	Identify methamphetamine users and their families and assisted them to access and engage with treatment	436 referrals to treatment 423 user – 13 whānau (50 percent not known to Northland DHB Mental Health and Addiction Services)
		Reduced family harm by referral of whānau members and associates to appropriate agencies and support groups via established multi-agency family harm table	36 reports of concern completed for 87 children Referral to other social service (including youth) agencies as appropriate Methamphetamine Whānau Support referrals (13 as above) 87 nominations from Family Harm table for follow up, resulting in 28 referrals, 3 employment referrals

What did we do?	Who did it?	How did we do it?	How much did we do?
Built community trust and confidence (Our Business)	Police	Promoted the holistic delivery of Te Ara Oranga	Partnering with Northland DHB at social service agency presentations and meetings – 120. MSD, Corrections, Oranga Tamariki – Whangarei Kaikohe Dargaville, NGOs, Women's Refuge, Rape Crisis, Continuing Medical Education, occupational therapists, Bream Bay Trust, Hokianga Health, Kates Place, CMHAS, ACC, Salvation Army, Total Care Nursing, Whangarei Girls – Health Class, maraes – Karekare, Matauri, Mangamuka, Tetii, Kaihu, Panguru. Community and public events and meetings in addition to the above presentations including but not limited to: • Waitangi, Emergency Services Day, Moerewa Whānau Fun Day, Be Free Music Festival Kerikeri, Recruiting Day. Attended 22 x 10 foot tall meth productions held at Northland schools reaching over 3000 students.
		Targeted community communications	Distribution to hapu of promotional material to access services "we've been in your neighbourhood" Electronic, face-to-face and social media communication outlining the holistic role of Police and partners in Te Ara Oranga and introducing the Meth Harm Reduction Team
Wastewater testing		Measuring methamphetamine use by population	Water testing data

What did we do?	Who did it?	How did we do it?	How much did we do?	2017–19 update
Engaged Northland communities in the development of Te Ara Oranga	Northland DHB Police Manaia Health PHO Hokianga Health Otangarei Trust Ngapuhi	Held community hui across Northland to engage communities in the development of Te Ara Oranga models of care and resources Whānau asked for Māori models of practice	5 community hui held in 5 locations with over 500 participants 5 resource kete community handover sessions, using the Dynamics of Whānaungatanga – a wellness model, held in five locations with over 600 participants	Hokianga Health and local marae engagement

What did we do?	Who did it?	How did we do it?	How much did we do?	2017–19 update
	Te Ha Oranga Hauora Whanui Hauora Te Hiku Ngāti Hine Health Trust Whakawhiti Ora Pai Whangaroa Health Trust	Established community reference group following the hui who were consulted throughout the development of whānau resources	21 community and NGO members 6 meetings	Te Ara Oranga was also awarded the Cedric Kelly Supreme Award at the 2018 Northland Health and Social Innovation Biannual Awards. Te Ara Oranga also won the Collaboration Award, which recognises outstanding examples of collaboration within departments in the health service and/or between primary and secondary services that have contributed to service improvements or better health outcomes. Te Ara Oranga was presented with the Supreme Matua Raki Workforce Innovation Award at the Cutting Edge Conference dinner in Rotorua in September.
Produced Te Ara Oranga resources	Northland DHB Police Community champions	Developed and produced a range of Te Ara Oranga resources across various media formats	Waiata and music video 'Let's Make a Change' Dedicated website 9 'Meth Free' billboards gifted across Northland 6,000 Meth Cycle magnets	1000 units of the wallet card provided to NGOs, Police and DHB New billboard for Moerewa community New event collateral for Police and DHB

What did we do?	Who did it?	How did we do it?	How much did we do?
Supported methamphetamine screening in Northland general practice	Manaia PHO	Developed a methamphetamine screening and brief intervention tool for general practice	40 practices have access to screening tool 26 have used the screening tool Te Pou resource accessed 217 times in January–September 2019 (waiting on full data) 95 referred to NDHB AOD Prior to Te Ara Oranga: • Between October 2016–September 2017, 9 referrals to NDHB AOD were recorded for methamphetamine by general practice

What did we do?	Who did it?	How did we do it?	How much did we do?
Rataora screening pilot for methamphetamine, alcohol and other drugs	NDHB	Established Whangarei Hospital Emergency Department SBIRT Operational January 2018	7528 people screened in ED • 191 self-reported methamphetamine in previous 3 months representing 2.5% of those screened. Nationally, 0.8% of adults had used amphetamines in 2017/18 • 48 users consented to a referral to support/treatment services • 24 agreed to a referral to address other substance use. Prior to Te Ara Oranga: • Between October 2016–September 2017, 0 referrals to NDHB AOD were recorded for methamphetamine by the emergency department. This might be due recording practices.
	The Salvation Army, Odyssey House Ngāti Hine Health Trust	Delivered one day Choice brief Intervention Programme	622 people referred to attend 310 attended programmes 78% indicating behaviour change Not available prior to Te Ara Oranga
Phone line interventions	Meth Help Team Christchurch	Phone counselling service	35 referrals from Northland 28 ended routinely, 5 self-discharged and 3 were lost to follow up “A lot of referrals don’t have a location so it’s likely to be higher” as noted from Meth Help team. Prior to Te Ara Oranga: • Between October 2016–September 2017, 2 referrals were recorded for methamphetamine in Northland. It was highlighted that recording practices changed, and numbers were likely to be higher.
	Alcohol Drug Helpline	Phone brief intervention service	644 calls to the ADHL from Northland 122 recorded for meth support Data is limited from the ADHL as below, we stopped reporting any outcomes, but this was a limitation to reporting social media outcomes. Example below: Between January–August 2017, the region a call originated from was recorded for 45% of Helpline calls, and of those the primary drug was recorded for 52% of those calls. Based on inadequate region and primary drug data collected, the ability to measure the social media campaigns is limited.

What did we do?	Who did it?	How did we do it?	How much did we do?	2017-19 update
	Northland DHB Police Manaia Health PHO NGOs Community champions	Worked with over 40 community champions to film a range of Te Ara Oranga videos for social media distribution	5 educational videos 55 one-minute Tips for Change and Helpful Hint videos for social media distribution	Produced five new Hokianga marae-based harm reduction videos for social media
Established social media presence for Te Ara Oranga	Northland DHB Police Liked media	Provided social media training and developed a scheduling programme	12-month social media scheduling delivered by Northland DHB and six NGOs	Placed 8 social media videos a month – Northland DHB Facebook page – over 10,000 followers
Followed up with social media community education	Northland DHB Police Hokianga Health Te Ha Oranga Hauora Te Hiku Hauora Whanui Whakawhiti Ora Pai	Each organisation scheduled more than 14 posts a month	Northland DHB reached 674,767 people, with 30,147 people reacting to the 416 posts Let's Make a Change music video reached 99,390 people and was shared by 7,291 people	Northland DHB reached 674,767 people, with 30,147 people reacting to the 416 posts Let's Make a Change music video reached 99,390 people and was shared by 7,291 people
Developed and delivered community methamphetamine education	Northland DHB	Appointed 1.0 FTE methamphetamine educator to develop and deliver community methamphetamine education	3 programmes developed 15 education sessions delivered to 190 health and social service professionals	
Facilitated a support network for whānau and friends of methamphetamine users	Northland DHB	Established methamphetamine whānau support groups	4 whānau support groups in four locations across Northland	Producing three whānau support social media videos with the prize money from the Northland Health & Social Innovation Awards

What did we do?	Who did it?	How did we do it?	How much did we do?	2017-19 update
National and international conferences	Northland DHB and NZ Police			9th International City Health Conference – Melbourne -Harm Reduction – 2019 Delivering Mental Health Transformation Conference – Wellington – 2019 NZ Illicit Drug and Organised Crime Forum –Wellington – 2019 Problem Oriented Policing Awards –regionals – Auckland

Appendix C: Basic design of the interview discussion guide (service providers)

When did you first learn about Te Ara Oranga ?

What has changed (for you or your organisation) because Te Ara Oranga's Funding has been applied?

What might have happened in the past? What might have happened before Te Ara Oranga?

What has happened in the community/persons you work with (is there a change in the perception of users)? How about Police? (move towards compassionate health model?)

Have we moved the problem? Is it easier in some places to obtain meth than others?

How do people start out using P? Has that become more difficult?

What should we be doing to tackle the methamphetamine problem?

Can you get the same level of service here compared to Whangerei? or Auckland?

What's great about P? / Why do think people use P?

Are we driving down demand for P? Is it getting cheaper?

How much more resilient are people to using/taking it up?

What's the structure of 'distribution'? Who does it? How are they successful?

How long before P gets a grip and changes a person's life for the worse?

What's the mark-up on P? How much can you get it for? How much can you sell it for?

Explore themes: Supply; Demand reduction; Perception of the problem; How to deal with it (supply); How to deal with it (Demand)

Koha

Opportunity to recontacted by phone

Assistance with information pack

References

Akroyd, S., Paulin, J., Paipa, K., & Wehipeihana, N. (2016). *Iwi panels: An evaluation of their implementation and operation at Hutt Valley, Gisborne and Manukau from 2014 to 2015.* Ministry of Justice, New Zealand Police and Department of Corrections. **https://www.justice.govt.nz/assets/Documents/Publications/iwi-panels-evaluation-report.pdf**.

Allsop, S. (2007). What is this thing called motivational interviewing? *Addiction*, *102*(3), 343–345. https://doi.org/10.1111/j.1360-0443.2006.01712.x.

Andreasen, A. R. (2002). Marketing social marketing in the social change marketplace. *Journal of Public Policy & Marketing*, *21*(1), 3–13.

Anshel, M. H., & Kang, M. (2008). Effectiveness of motivational interviewing on changes in fitness, blood lipids, and exercise adherence of police officers: An outcome-based action study. *Journal of Correctional Health Care*, *14*(1), 48–62.

Antler, Y. (2018). *Multilevel Marketing: Pyramid-Shaped Schemes or Exploitative Scams?*

Bernstein, E., Bernstein, J., Feldman, J., Fernandez, W., Hagan, M., Mitchell, P., Safi, C., Woolard, R., Mello, M., & Baird, J. (2007). An evidence-based alcohol screening, brief intervention and referral to treatment (SBIRT) curriculum for emergency department (ED) providers improves skills and utilization. *Substance Abuse: Official Publication of the Association for Medical Education and Research in Substance Abuse*, *28*(4), 79.

Bichler, G., Malm, A., & Cooper, T. (2017). Drug supply networks: A systematic review of the organizational structure of illicit drug trade. *Crime Science*, *6*(1), 2.

Burke, B. L., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology*, *71*(5), 843–861. https://doi.org/10.1037/0022-006X.71.5.843.

Cartier, J., Farabee, D., & Prendergast, M. L. (2006). Methamphetamine use, self-reported violent crime, and recidivism among offenders in California who abuse substances. *Journal of Interpersonal Violence*, *21*(4), 435–445.

Caulkins, J. P., Disley, E., Tzvetkova, M., Pardal, M., Shah, H., & Zhang, X. (2016). Modeling the structure and operation of drug supply chains: The case of cocaine and heroin in Italy and Slovenia. *International Journal of Drug Policy*, *31*, 64–73.

Centre for Disease Control. (2020). *Types of Evaluation*. 2.

Copello, A., Templeton, L., Orford, J., & Velleman, R. (2010). The 5-Step Method: Evidence of gains for affected family members. *Drugs: Education, Prevention and Policy*, *17*(sup1), 100–112.

Cruickshank, C. C., & Dyer, K. R. (2009). A review of the clinical pharmacology of methamphetamine. *Addiction*, *104*(7), 1085–1099. https://doi.org/10.1111/j.1360-0443.2009.02564.x.

Cunningham, R. M., Bernstein, S. L., Walton, M., Broderick, K., Vaca, F. E., Woolard, R., Bernstein, E., Blow, F., & D'onofrio, G. (2009). Alcohol, tobacco, and other drugs: Future directions for screening and intervention in the emergency department. *Academic Emergency Medicine*, *16*(11), 1078–1088.

Curtis-Ham, S., & Walton, D. (2017a). Mapping crime harm and priority locations in New Zealand: A comparison of spatial analysis methods. *Applied Geography*, *86*, 245–254.

Curtis-Ham, S., & Walton, D. (2017b). The New Zealand crime harm index: Quantifying harm using sentencing data. *Policing: A Journal of Policy and Practice*, *12*(4), 455–467.

Curtis-Ham, S., & Walton, D. (2017c). The New Zealand crime harm index: Quantifying harm using sentencing data. *Policing: A Journal of Policy and Practice*.

Désy, P. M., & Perhats, C. (2008). Alcohol screening, brief intervention, and referral in the emergency department: An implementation study. *Journal of Emergency Nursing*, *34*(1), 11–19.

DiFranza, J. R. (2020). Neural remodeling begins with the first cigarette. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.

Dillard, J. P., Meczkowski, E., & Yang, C. (2018). Defensive reactions to threatening health messages: Alternative structures and next questions. *International Journal of Communication*, *12*, 23.

Dobkin, C., & Nicosia, N. (2009). The war on drugs: Methamphetamine, public health, and crime. *American Economic Review*, *99*(1), 324–349.

Durie, M. H. (1985). A Maori perspective of health. *Social Science & Medicine*, *20*(5), 483–486.

Durie, M. H. (1997). Maori cultural identity and its implications for mental health services. *International Journal of Mental Health*, *26*(3), 23–25.

Elder, J. W., Wu, E. F., Chenoweth, J. A., Holmes, J. F., Parikh, A. K., Moulin, A. K., Trevino, T. G., & Richards, J. R. (2020, July 17). *Emergency Department Screening for Unhealthy Alcohol and Drug Use with a Brief Tablet-Based Questionnaire* [Research Article]. Emergency Medicine International; Hindawi. **https://doi.org/10.1155/2020/8275386**.

Gage, S. H., & Sumnall, H. R. (2019). Rat Park: How a rat paradise changed the narrative of addiction. *Addiction*, *14(5), 917–922. https://doi.org/10.1111/add.14481*.

Goldsmid, S., & Willis, M. (2016). Methamphetamine use and acquisitive crime: Evidence of a relationship. *Trends and Issues in Crime and Criminal Justice*, *516*, 1.

Greenwald, G. (2009). *Drug Decriminalization in Portugal*. Cato Institute.

Guide to Social Cost Benefit Analysis. (2015, July 27). **https://www.treasury.govt.nz/publications/guide/guide-social-cost-benefit-analysis**.

Harland, J., & Ali, R. (2017). *ASSIST on Ice: The alcohol, smoking and substance involvement screening test and brief intervention for methamphetamine use.* DASSA-WHO Collaborating Centre. **https://cracksintheice.org.au/pdf/ASSIST-on-ICE-eManual.pdf**.

Hastings, G., & Domegan, C. (2017). *Social marketing: Rebels with a cause*. Routledge.

Hastings, G., MacFadyen, L., & Anderson, S. (2000). Whose behavior is it anyway? The broader potential of social marketing. *Social Marketing Quarterly*, *6*(2), 46–58.

Herbalife Annual Report. (2019). **https://ir.herbalife.com/static-files/30be29aa-b48a-4405-aef4-cb022afbeb2a**.

Infometrics. (2020). *Quarterly economic monitor*. **https://ecoprofile.infometrics.co.nz/northland%20region/QuarterlyEconomicMonitor/Gdp**.

Irving, A., Goodacre, S., Blake, J., Allen, D., & Moore, S. C. (2018). Managing alcohol-related attendances in emergency care: Can diversion to bespoke services lessen the burden? *Emergency Medicine Journal*, *35*(2), 79–82. **https://doi.org/10.1136/emermed-2016-206451**.

Jackson, N. O., & Pawar, S. (2013). *A Demographic Accounting Model for New Zealand. Nga Tangata Oho Mairangi: Regional Impacts of Demographic and Economic Change – 2013-2014.* National Institute of Demographic and Economic Analysis, University of Waikato.

Kalkhoran Sara, Benowitz Neal L., & Rigotti Nancy A. (2018). Prevention and Treatment of Tobacco Use. *Journal of the American College of Cardiology*, *72*(9), 1030–1045. **https://doi.org/10.1016/j.jacc.2018.06.036**.

Kilanowski, J. F. (2017). *Breadth of the socio-ecological model*. Taylor & Francis.

King, G., & Nielsen, R. A. (2019). *Why propensity scores should not be used for matching*.

LaMorte, Wayne W. (2020). *The Transtheoretical Model (Stages of Change)*. Boston University School of Public Health. **https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchangetheories/BehavioralChangeTheories6.html**.

Le, V., & Lauchs, M. (2013). Models of South-East Asian organised crime drug operations in Queensland. *Asian Journal of Criminology*, *8*(2), 69–87.

Liu, H. (2018). The Behavioral Economics of Multilevel Marketing. *HASTINGS BUSINESS LAW JOURNAL*, *14*, 31.

Mark, S., & Hagan, P. (2020). *Co-design in Aotearoa New Zealand: A snapshot of the literature* (p. 38). Auckland Co-design Lab, Auckland Council.

Marlatt, G. A., & George, W. H. (1984). Relapse prevention: Introduction and overview of the model. *British Journal of Addiction*, *79*(4), 261–273.

McFadden, M., New Zealand, & Ministry of Health. (2016). *The New Zealand drug harm index 2016*.

Mcintosh, J., Bloor, M., & Robertson, M. (2007). The effect of drug treatment upon the commission of acquisitive crime. *Journal of Substance Use*, *12*(5), 375–384. **https://doi.org/10.1080/14659890701495102**.

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. **https://doi.org/10.1016/j.drugalcdep.2020.108262**.

Miller, W. R. (1983). Motivational interviewing with problem drinkers. *Behavioural and Cognitive Psychotherapy*, *11*(2), 147–172.

Miller, W. R., & Rollnick, S. (2009). Ten things that motivational interviewing is not. *Behavioural and Cognitive Psychotherapy*, *37*(2), 129–140.

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford press.

Ministry of Health and Social Affairs. (n.d.). *Swedish drug policy – a balanced policy based on health and human rights* (p. 12). Government Offices of Sweden. **https://www.government.se/496f5b/contentassets/89b85401ed204484832fb1808cad6012/rk_21164_broschyr_narkotika_a4_en_3_tillg.pdf**.

Murray, C. J. L., Barber, R. M., Foreman, K. J., Ozgoren, A. A., Abd-Allah, F., Abera, S. F., Aboyans, V., Abraham, J. P., Abubakar, I., Abu-Raddad, L. J., Abu-Rmeileh, N. M., Achoki, T., Ackerman, I. N., Ademi, Z., Adou, A. K., Adsuar, J. C., Afshin, A., Agardh, E. E., Alam, S. S., … Vos, T. (2015). Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990–2013: Quantifying the epidemiological transition. *The Lancet*, *386*(10009), 2145–2191. **https://doi.org/10.1016/S0140-6736(15)61340-X**

National Institute on Drug Abuse. (2018). *Principles of drug addiction treatment: A research-based guide*. **https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/evidence-based-approaches-to-drug-addiction-treatment/behavioral-3**.

National Organised Crime Group. (2020). *5 Dimensional targeting and Disruption of Criminal Business Entities: Making New Zealand's environment as harsh as possible for criminal business entities to operate in.* NZ Police.

NZ Police. (2017). *Prevention First: National Operating Model 2017*. New Zealand Police. **https://www.police.govt.nz/about-us/publication/prevention-first-national-operating-model-2017**.

Obert, J. L., McCann, M. J., Marinelli-Casey, P., Weiner, A., Minsky, S., Brethen, P., & Rawson, R. (2000). The Matrix Model of outpatient stimulant abuse treatment: History and description. *Journal of Psychoactive Drugs*, *32*(2), 157–164.

O'Brien, A. M., Brecht, M.-L., & Casey, C. (2008). Narratives of methamphetamine abuse: A qualitative exploration of social, psychological, and emotional experiences. *Journal of Social Work Practice in the Addictions*, *8*(3), 343–366.

Priest, B., & Lockett, H. (2020). Working at the interface between science and culture: The enablers and barriers to individual placement and support implementation in Aotearoa/New Zealand. *Psychiatric Rehabilitation Journal*, *43*(1), 40.

Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In *Treating addictive behaviors* (pp. 3–27). Springer.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1993). In search of how people change: Applications to addictive behaviors. *Addictions Nursing Network*, *5*(1), 2–16.

Rawson, R. A., Marinelli-Casey, P., Anglin, M. D., Dickow, A., Frazier, Y., Gallagher, C., Galloway, G. P., Herrell, J., Huber, A., & McCann, M. J. (2004). A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. *Addiction*, *99*(6), 708–717.

Rubak, S., Sandbæk, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing: A systematic review and meta-analysis. *British Journal of General Practice*, *55*(513), 305–312.

Saunders, J. B., Aasland, O. G., Amundsen, A., & Grant, M. (1993). Alcohol consumption and related problems among primary health care patients: WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-I. *Addiction*, *88*(3), 349–362. **https://doi.org/10.1111/j.1360-0443.1993.tb00822.x**.

Sommers, I., & Baskin, D. (2006). Methamphetamine use and violence. *Journal of Drug Issues*, *36*(1), 77–96.

Steinkopf, B. L., Hakala, K. A., & Van Hasselt, V. B. (2015). Motivational interviewing: Improving the delivery of psychological services to law enforcement. *Professional Psychology: Research and Practice*, *46*(5), 348–354. **https://doi.org/10.1037/pro0000042**.

Stevens, A., Hughes, C. E., Hulme, S., & Cassidy, R. (2019). Depenalization, diversion and decriminalization: A realist review and programme theory of alternatives to criminalization for simple drug possession. *European Journal of Criminology*, 147737081988751. **https://doi.org/10.1177/1477370819887514**.

Tackling Methamphetamine: Progress Report. (2015). Department of the Prime Minister and Cabinet.

Te Ara Oranga Evaluation Working Group. (2018). *Te Ara Oranga Methamphetamine Demand Reduction Programme: First Progress Evaluation Report*. Ministry of Health/Northland District Health Board.

Walton, D. (2021). *Te Manawa Titi—Whāngaia Ngā Pā Harakeke: Auckland District: 2019-2020* (No. 3; p. 23). Crow's Nest Research Ltd.

Walton, D., & Brooks, R. (2019). *Whāngaia Ngā Pā Harakeke Pilot: Counties Manukau District Outcomes Evaluation* (pp. 1–37). New Zealand Police.

Walton, D., & Brooks, R. (2020). *Technical Report Whāngaia Ngā Pā Harakeke Pilot Eastern (Tairāwhiti) District Outcomes Evaluation*. Safer Whanau, NZ Police.

Walton, D., & Martin, S. (2020). *Te Ara Oranga: The Path to Wellbeing: The Development and implementation of the Methamphetamine Harm Reduction Programme in Northland: Wellington* (No. 1; p. 99). Crow's Nest Research Ltd.

Walton, D., & Martin, S. (2021). *Te Ara Oranga: The Path to Wellbeing The Development and Implementation of the Methamphetamine Harm Reduction Programme in Northland Process Evaluation Report* (No. 1; The Evaluation of Te Ara Oranga, p. 99). Ministry of Health/Northland District Health Board.

Walton, D., Martin, S., & Li, J. (2019). Iwi community justice panels reduce harm from re-offending. *Kōtuitui: New Zealand Journal of Social Sciences Online*, 1–18. **https://doi.org/10.1080/1177083X.2019.1642921**.

Weisheit, R. (2008). *Making Methamphetamine*. *23*, 31.

Whiria Te Muka. (2020). *He Maturanga Hauhake. Meth use as a trigger for whānau harm in Te Hiku.* Te Hiku Iwi Development Trust, Kaitāia.

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. **https://doi.org/10.1016/j.drugpo.2018.09.007**.

Yudko, E., Lozhkina, O., & Fouts, A. (2007). A comprehensive review of the psychometric properties of the Drug Abuse Screening Test. *Journal of Substance Abuse Treatment*, *32*(2), 189–198. **https://doi.org/10.1016/j.jsat.2006.08.002**.

Zhang v R [2019] NZCA 507: New sentencing guidelines for methamphetamine-related offending. (2019, November 13). New Zealand Law Society | Te Kāhui Ture o Aotearoa. **https://www.lawsociety.org.nz/news/legal-news/zhang-v-r-2019-nzca-507-new-sentencing-guidelines-for-methamphetamine-related-offending/**.

Aroha's Journey

Aroha (47 years old, Māori female) has two sons', both in their 20s.

- Aroha has been a poly-drug user since her early teens.
- She grew marijuana for profit and cooked methamphetamine.
- She has approximately 90 convictions. Some are drug related, others are for car conversion, burglary, fraud, driving offences, and assault.
- Aroha has also been a victim of domestic and sexual violence.
- Aroha is not gang affiliated though she did have a 'working relationship' with gangs across the years she was dealing, growing, and cooking.

Aroha is an only child. Her parents were together throughout her life. She describes her mother as 'lovely'. Her father is an alcoholic; however, she does not describe this as damaging in her life. Both her parents worked long hours throughout her childhood therefore she was not supervised most of the time.

Aroha was exposed to a sexual predator in her childhood. He was a whānau member. He was extremely violent. His sexual violence led to Aroha wanting to numb herself, through drugs and alcohol, at a young age. When Aroha turner 13 her abuser sold her to his friends. They were much older than her. She described them as "awfully bad men, very violent". These men raped Aroha.

Aroha then met the man who would father her two sons. At first, they had fun together. Aroha then started working as a prostitute. She was the primary financial provider. During this time Aroha started using Duromine, an amphetamine-based weight-loss pharmaceutical. Aroha explained that this was before methamphetamine came along. She and her partner were still using marijuana regularly, however, Aroha had given up alcohol by this time.

Aroha describes her in-laws, at that time, as "very bad people". They were gang affiliated. They introduced her and her partner to growing hydroponic marijuana for sale when they were in their teens. Not soon after they introduced Aroha and her partner to a methamphetamine cook. Straight away they went into it 'full steam ahead'. They were in their early 20s. This is when Aroha started smoking methamphetamine (meth).

Whilst growing marijuana and cooking meth Aroha and her partner continued to maintain mainstream work. Between this work, and the marijuana and meth sales they were making good money. Despite this their relationship was tested as her partner was using prostitutes and cheating on her in other ways. He would frequently give Aroha's possessions away. She does not know how many times she lost everything she owned.

Aroha describes the meth market as 'violent'. Her partner would go out cooking and leave her at home with their two sons. During this period Aroha's addiction became very heavy. Because they were cooking it there was no set amount and it was not 'cut'. This was around the year 2000, give or take a year or two.

Aroha believes that she and her partner were amongst the first to sell methamphetamine in her Northland community. They purchased multiple homes and made a lot of money. They brought bikes, cars, houses, land. Eventually Aroha was living by herself and she ran the local 'trap' house for four and a half years, the local meth house. She owned the house she was working from.

> They call that 'front living' because you deal with all the peasants, the 'small fry'.
> I treated those people badly. If you did not have money or a big bag of shit,
> I did not want to know you. I still thought I was a beautiful person.
> I would see a person new to the game and all I would see was dollar signs,
> I would just ruin their lives.

Aroha and her partner would split up, make up, and split up again. He was extremely violent. Not only to Aroha but also in front of her sons. But she loved him. He would get her back and promise that it would change. It never happened. One time he tied Aroha to a chair and beat her and raped her for days. He started panicking, when this happened, she thought she was going to be "buried". All she could think was "make it quick, whatever happens make it quick". But then he snapped out of it. Aroha ran and hid from her partner many times. Sometimes for months on end. But he would pay people to find her and return her to him.

Throughout Aroha's addiction, even before her addiction, she has forgotten how many times she was raped. Just so many times. She was raped at gun point, with knives held to her body. Eventually it had little effect because she was so used to it. But then her best friend was raped to "get at" her. That "broke" her.

Though it was the hardest lifestyle Aroha could not say she did not have heaps of good times. But one of the worst times was when she found out her oldest son was using meth. He was 20. She was devastated. Over the years she eventually gave it to him and in the end they we were smoking it together.

Because of the violence Aroha gave her children to her parents. Her addiction had become so strong. It would tell her things that were so untrue. She became fully disconnected from her family.

> My poor mum, for years she went to sleep wondering if she was going to
> get that call telling her I was dead. I hid most things from her; the hidings,
> the rapes, all that.

When Aroha's sons were with her, she thought they were having the best possible upbringing because she had so much money. She thought that the material things she was providing amounted to ideal parenting.

> The truth is that they could not even use the kitchen table because it was
> covered in tupperware containers full of meth. We could not use the oven
> because it was full of ephedrine drying out. It is terrible you know.
> They were in a meth lab for God's sake. All the people around us were shit.
> They did not care about my family, they just wanted meth. Everyone I knew
> used or dealt.

Over the years Aroha accumulated approximately 90 convictions. Most of them meth related, or being in a stolen car, bail breaches, knives. Stuff like that.

> The last two years of my addiction I needed guns. I did not even go to the
> supermarket without a loaded pistol in my bag. I would not even go to the

> petrol station, go in and pay, without a loaded gun ready to go. And I would shoot you, I was not mucking around … I also kept a loaded AR15 under my bed at all times.

For the last six months of her addiction the police had her under constant surveillance. She does not know what changed because, she believes, they had known about her dealing for years.

> There came a time when I really wanted to give up. I could see the damage. Not only on my own son but also to the people I was dealing to. Some were reminding me of my own family before it all started and they were losing their relationships, losing their kids. Before I used to think if they are not getting it from me, they are getting it from someone else. Something changed … But they are getting it from me. I am having a direct impact. But I still could not get out.

Treatment

> I did not think it was possible (recovery and treatment). I heard about it, but for us it is for quitters, I am not a quitter. I thought I was going to die an addict. So long as I was high when I died, I would not have cared. I did not see any way out. That was just the way it was. I had heard of people going into rehab but most of them relapsed or I never saw them again. I was not in real civilisation you know.

Aroha spoke about being on probation for a long time. She would lie to her probation officer about her drug use. She would do the mandatory courses. Once she was drug tested but she paid someone else to provide the sample. She explained that it was a "real mission" to find that one person in her life who could do it because everyone she knew was using.

First step of recovery

Aroha could 'feel' the police closing in and sure enough she was raided. She was not at home at the time, but her son was, and he was arrested. That was rock bottom for Aroha. A warrant was issued for her arrest, but she went on the run for months to try to secure a bed in a residential rehabilitation centre. She had a rudimentary understanding of the law and understood that if she could find a bed the courts would have to allow her to stay in a rehabilitation facility. Aroha also managed to get her son, who was on remand, an assessment for rehab. This, she explained, is virtually impossible. She understood though that if both she and her son were incarcerated there would be little chance of him being released. The week her son was released into rehab Aroha handed herself in to police.

> I did not believe I was an addict, but I knew my only chance was to go into treatment, to play the game, to tick the boxes. It took me a couple of times to go into rehab but luckily, they kept my bed for me. It was the first time I had ever given up. I had never been in recovery. I learned that treatment is easy. Rehab is easy because there are no drugs there. Staying clean is hard. The day you leave rehab you are leaving your bubble. I stayed clean though. I just finished doing 90 meetings in 90 days. To learn how to live. It is hard to learn how to live. Just the everyday normal shit.

Post-addiction

Aroha has not used drugs or alcohol for over two years now. She is studying her BA in Social Work. It was a Pou Whānau connector who inspired Aroha to get clean and to study. He gave her hope as he had once been a user and she saw that he had overcome his addiction. Aroha would one day like to take on the same role. In the meantime, she actively works in the non-profit sector to support others in recovery.

Also instrumental on her pathway to recovery was the Meth Harm Reduction team and Ngāti Hine House where she did her residential rehabilitation.

What could have changed her life course?

It is possible that the sexual abuse experienced as a child set a trajectory toward drug misuse. If these crimes had been discovered at the time Aroha's life course may well have proved to be quite different.

Across her adult life she was found with methamphetamine and utensils on many occasions. Aroha was not offered any treatment/support at these times, and these were missed opportunities.

In addition, her offending was in a 'target set' of acquisitive crimes: burglary, receiving, unlawful takes motor vehicles. These contacts with Police and the Justice system offered further opportunity to understand the root cause of the offending and promote help-seeking behaviours.

There is also a clear history of being a victim in family violence, many contacts with the Police and reports of her circumstances. Again, the involvement of drug use in her life may have been identified and addressed at points of contact sooner, Aroha may have sought help for her drug use as her circumstances changed.

Outcomes Evaluation

Executive summary to the outcomes evaluation

1. This section presents a programme-wide evaluation of Te Ara Oranga, the methamphetamine harm reduction programme implemented by Northland DHB and NZ Police.

2. Te Ara Oranga is evaluated using administrative data that monitors the contact that 1639 people have with the Health and Police systems from before and after referral to service to support recovery from methamphetamine use and addiction between Oct 2017 and Oct 2019.

3. Efforts to create a matched control group using propensity-matching to Police data failed to account for the high-volume criminality of people who use methamphetamine within the programme. Analysis of this aspect highlights that methamphetamine use is a significant driver of crime.

4. The sub-class categorisation associated with coarsened exact matching identifies the characteristics of the most common referrals into the programme from Police. They are female, 30 years old, from Whangarei, with three or four previous convictions and their usual contact with Police involves role linkages that are not as offenders. Through an active effort, Police identify people who are users of methamphetamine without that contact being induced through offending.

5. Examination of the offences of identified methamphetamine users confirms they commit high-volume, low harm acquisitive crimes (crimes designed to achieve material gain). Among the most common offences are shoplifting, theft and burglary. This is contrasted with methamphetamine production and supply or other 59XX series offence codes (Codes Related to Methamphetamine use, supply, and possession) which are rare in the post-referral contact with Police.

6. A natural experiment is used to form the evaluation. There are two main referral sources that lead to Te Ara Oranga: Health and Police. These referral pathways are compared with those who receive a usual health response in a natural experiment that compares usual service with those progressing to Te Ara Oranga. Additional comparisons are made to those that decline a referral.

7. There are significant differences in the contact points between Health and Police. Health referrals are more often for Males, with longer histories of health contact and lower harm associated to their accumulated criminal record. Police, by contrast, refer significantly more Māori, females, with significantly fewer (around half) the amount of contact with the health system as health referrals.

8. These differences in the referrals required adjustment using a linear mixed effect model with fixed effects for gender, whether Māori, and referral source. A random effect allowed unique intercepts for each individual in a within-subjects before/after comparison of crime harm, measuring Equivalised Prison Days (EPD), using the NZ Crime Harm Index (Curtis-Ham & Walton, 2017).

9. Overall, Te Ara Oranga is associated with a reduction in post-referral average, aggregated crime harm by around 14.62 EPDs. The base level expected of 42 EPDs is used as a comparison. This establishes an estimated effect of Te Ara Oranga referrals: they reduce their post-referral offending by approximately 34%. The modelling that derives these statistics controls for differences in the referral pathways and between those that get a referral and those that do not.

10. Health and Police address different populations of methamphetamine users. One strength of Te Ara Oranga is that it actively seeks out different populations by within strong partnerships between different agencies. It has also developed new capabilities such as the roles of Pou Whānau connectors. This strength of the programme also faces a challenge when it encounters those who potentially have the greatest benefit from the referral but decline it. Focussed research with these people and a long-term monitoring programme is recommended.

11. The effect of Te Ara Oranga may have a life-long impact or be limited to the post-referral period. The former may be desired, but it cannot be determined here. To find out whether Te Ara Oranga has enduring impacts would require a long-term follow-up, perhaps within the same data records at future points in time.

The objective of this evaluation

This section is intended for those wanting to understand whether the introduction of Te Ara Oranga worked to produce measurable outcomes. That is, have the people who have been referred to Te Ara Oranga reduced their contact with Police, and by implication improved their wellbeing? Have those who have been referred increased their contact with the health system? Alternatively, the report asks what observed effects emerge when considering those who are identified for their methamphetamine use and referred to treatment compared to those that do not.

This is a notoriously difficult area of evaluation due to the complex relationships between circumstances that bring a person to recovery, the conditions that maintained their use, and an accepted low rate of success with each attempt to stop using.

These evaluative difficulties are reflected in a complex data environment that is highlighted in this section. The processes that lead a person through Te Ara Oranga are not straightforward. Persons enter the programme from multiple pathways and are triaged into treatment types that match their circumstances. The processes are fully described in the first section: Process Evaluation (pp 18–121). That section describes the philosophy behind Te Ara Oranga, and what makes it unique and leading-edge. The first section details the uniqueness of Te Ara Oranga and its acceptance of a cycle of recovery attempts that may be needed for any individual to successfully overcome addiction.

This section examines the available administrative data through the programme's first two years of referrals, October 2017–October 2019, and then then through to May 2020. This gives a follow-up period of more than two years for some people, and a minimum of six months for all. The data are developed using sophisticated matching of Health and Police data, the development of propensity-matched controls, and straightforward comparisons between those referred and control groups.

How the process evaluation links to the outcomes evaluation

This process evaluation helped structure the outcomes evaluation that recognises the influence different levels of services, and different services in different locations. This outcomes evaluation examines over 1.75 million lines of data for over 1,500 people referred to services with linked (anonymised) data between contact with Police and contact with health services.

It is clearly possible to separately evaluate those progressing through to Te Ara Oranga from the police referrals. SBIRT is found effective in similar studies overseas (Désy & Perhats, 2008; Elder et al., 2020). It is also possible to separately consider the progress of service users who receive support through Employment Works in a prospective study that considers their contacts with the Justice and Health systems. The outcomes evaluation examines referral pathways to see how effective, and what effects Te Ara Oranga has on the long-term wellbeing of service users.

Method

Data used in the outcomes evaluation

Two sources of data are developed and matched to individuals. The first are all offence data in the 'pre-count' occurrences data maintained by NZ Police, for all people in Northland, to 24 May 2020. The data represents over 1.7 million lines of recorded events, representing 225,000 unique persons. A person is linked to an event by a role – which may be as a witness, victim, offender, suspect, or 'subject of' (as when a person is subject of an inquiry). The data are known as 'pre-count' data because they do not just represent the record of offending (i.e., prior to the official count of offences). The data record when a person is linked to an event where they are charged with an offence. Aside from a record of offending, a link will also record contact where no offence is identified, calls for service (coded as events with a two-digit code, such as a 1X attempted suicide or 5F Family harm investigation). Actual offences are recognised by a four-digit code and a charge description.

–These data reflect all points of recorded contact between Police and the individual linked to an occurrence in Northland.[12] As such, these data represent a significantly improved understanding of a person's contact with the justice system compared with the very narrow view obtained by examining convictions, imprisonment, or other unidimensional metrics of a person's activity. This means, importantly, that the data can be conceptualised as 'contact with the Police'. Policing is recognised as encompassing a wide range of activities and duties; supporting and preserving life, responding to welfare concerns, dealing with mental health callouts, and supporting victims of crime – all of which are included in contact occurrences.

The second set of data, developed after matching, represents a person's contact with the health system. These data are limited in the sense that they are the product of two scenarios: referring of an individual into Te Ara Oranga; or matches developed from the Police set (a matched control who did not go through Te Ara Oranga, and who may or may not have a health record). These data comprise a total of 146,100 recorded points of contact, representing 1,579 individuals.

New Zealand Crime Harm Index (NZCHI)

The NZCHI (Curtis-Ham & Walton, 2017) rank-orders the offence codes on a dimension of 'harm caused' as inferred from the actual sentences given for each offence-type. The NZCHI indexes all offence types to an ordered list based on the minimum expected number of prison days a person would receive for any single offence. It was developed using sentencing data and takes the 15% percentile of the distribution of actual sentences given, before converting the days in prison, community service, fine or other sentence types into 'Equivalised Prison Days'. This gives a value for all 6,633 offence codes available within the New Zealand jurisdiction. For ease of analysis the NZCHI can be aggregated so 're-offending' is constructed into a single metric. The NZCHI has been updated to version 7.0 and includes new offences and a better method of imputing uncommon offence codes with insufficient numbers of actual decisions on which to calculate a value.

Persons referred to Te Ara Oranga

Sample description

Police provided a file of 639 participants who had been processed as part of Te Ara Oranga. Referral sources were from the Meth Harm Team (40%), Family Harm Team (10%), Intelligence or Organised Crime (24%), Frontline and PST (25%), and other sources, including NGOs (1%).

Health provides alternative independent pathways into Te Ara Oranga. The NDHB recorded 463 individuals (63.5% of the health referrals) who were identified by Health via Pou Whānau connectors, GP referrals or other means. The remaining n = 266 (35.5% of the health referrals) arrive through the Salvation Army, Odyssey House, Ngāti Hine Trust, or screening in the hospital Emergency Department (ED).

[12] A person could offend elsewhere in New Zealand and be outside the **scope** of these analyses.

The final sample comprises N = 1,368 unique individuals who had either the opportunity for contact or actual contact with Te Ara Oranga. This potential or actual contact came about through recording an individual's identified methamphetamine use within the specified time (1 October 2017 to 30 September 2019). In practical terms, this means a referral had at least been offered, though not necessarily taken up. It also needs noting that even if a referral is taken up, the outcome may be 'incomplete'.

A further set of 271 extracted matches (see below, Segmentation analysis) makes up a comparison group of persons matched to those who are referred by Police, with a date of referral, to Te Ara Oranga (n = 298). From the Police data set, a set of all other offenders in Northland are treated as 'matchable' if they had not committed a crime with a CHI value of over 1,000 (this would likely lead them to being imprisoned). The criteria for matching included: gender, age, whether Māori or not, the location based on the Police station, number of previous convictions, usual role when contact with Police occurs (e.g., victim, offender, or bound by order), and accumulated previous crime harm (an aggregation the CHI-values of offences linked to that individual).

Coarsened exact matching was used to create a control group

Coarsened Exact Matching (CEM) is a recommended technique that overcomes criticism recently levelled against other propensity-matching methods (King & Nielsen, 2019). Other techniques (e.g., Nearest Neighbour) balance the matching against group membership. The critical element is when a person was referred. When using these other techniques, the 'group' will balance to the midpoint of the trial period which spans two years (i.e., 30 September 2018). So, a nearest neighbour technique, for example, would obscure who matches with who, and would therefore require controls being assigned a generic 'referral date cut point'. Technically this might be acceptable, but only for the broadest comparisons. In contrast, CEM assigns the referral date made for individuals to their matched partner drawn from the wider population.

Segmentation analysis

The segmentation process extracted 271 (of 298) successfully, meaning 17 could not be matched. CEM allows multiple matches to be determined. It also defines the modal characteristics of those referred and the segments of the population they represent.

The process is a type of segmentation in which classes of the combination of criteria are recognised. In this case, 206 subclasses are formed from the combination of the seven criteria to represent the 271 persons referred. Clearly, most are a unique combination of the criteria, else there would not be 206 categories for just 271 people. However, the most common subclasses contained 14 persons: Female, Māori, 30 years old, three or four previous convictions, in Whangarei, usually in contact with Police by being 'subject of' (commonly a complainant in cases of family harm in which no offence is identified), and with an accumulated CHI history of around 32. The next two most common categories are male, Māori, 29 years old, again in Whangarei, with 12 or 13 previous convictions and an accumulated CHI of 29.25 – again being 'subject of' as their most common point of contact with Police. Note, this means that it is usual for Police to have contact that does not involve the person having a role as an 'offender'. This type of 'marketing' segmentation technique sometimes provides a better insight into the characteristics of the sample than methods describing the average characteristics.

Demographics of the samples

Table 1 below provides the more traditional characteristics of the sample for analysis. Note that the inclusion of the matched controls (n = 271) and the referrals of Police have been further divided into two types. First, those that are referred (n = 243); these are used for the matching. The remaining 28 types of 'Police identified' serve as a natural experimental controls. These are people identified by Police but not referred because they declined to sign, declined a referral, could not be located, or (as a minor subgroup) were considered too dangerous. The main group (n = 286) are a mix of identifications that determine meth use, representing people who required follow-up or people who could not be located. Those who declined a referral serve as a natural experiment because they ultimately divide into two groups: those who receive Te Ara Oranga treatment through a different pathway, and those who do not.

Demographics by referral source

Table 1 has an important feature. The matched controls have significantly more prior convictions than any other part of the sample. This is a deliberate manipulation of the sample done by selecting the individual with the most prior convictions from those nominated through the CEM process. This was designed to make the comparisons as conservative as possible. In all other aspects the groups are similar to their usual identifiable constitution. Two other important characteristics of the sub-samples are important: (1) it appears that the referrals by Police are much more likely to be Māori, (2) whereas referrals by NDHB or other non-Police contacts are much more likely to be male.

Table 1: Demographic characteristics of the sample by the referral source, for analysis (N = 1639)

Referral pathway	N	Age	% female	Prior convictions	Ethnicity % Māori	% no criminal charges	% no health record
Identified by Police (but not referred)	286	m = 36, sd = 10.1	45%	m =13, sd = 16	64%	16.6%	27.2%
Declined referral	110	m =37, sd = 9.9	55%	M=7.6 sd = 11	53%	18.8%	29.0%
Referred by Police	243	m = 35, sd = 8.5	49%	m =11.5, sd = 13	72%	16.0%	11.1%
Matched control	271	m = 35, sd = 8.9	43%	m =21, sd = 12	57%	43.0%	–
Referred by Health	463	m = 36 sd = 10.9	36%	m =10, sd = 12	54%	19.9%	3.2%
NGOs ED or Pou Whānau connectors	266	m = 36, sd = 10.4	31%	m =13, sd = 14	63%	18.0%	19.5%
Total	**1,639**						

Dependent measures

The dependent measures are variations of the same data source. The main data source is the NIA (National Intelligence Application, i.e., Police data) extract for all points of contact with all people in Northland.

At least one form of criminality comprises the drug offences related to methamphetamine, Ecstasy, Fantasy-type substances and BZP. These are the so-called 'New Drugs' in the 59XX series of offences that range from importation to possession. Even a small amount of one of these drugs for personal use can still attract a large sentence, despite a low CHI-value offence outcome (6.25 EPDs: Equivalent Prison Days). The former Fatu band (sentence guideline) was 2–4.5 years, but that has been reduced to Community sentences to up to 4 years in the recent ruling by the Court of Appeal in *Zhang v R* [2019] NZCA 507. Importantly, however, an offence of 5911 (Importing Methamphetamine) carries a CHI-value of 810.3 EPDs. When compared to the usually observed offending this value is more than 15 times the NZCHI-value of burglary (4129) and 30 times more harm than the average offence committed by a person referred into Te Ara Oranga.

Across the entire record, importation or manufacturing of methamphetamine charges appear just five times. Notwithstanding, the Police code referencing Supply/Admin/Deal Methamphetamine and Amphetamine appears 77 times and is by volume the third most harmful offending committed by this sample.

Common forms of offending

The offence data are refined into five sets of outcomes:

(1) all occurrences when the person is linked as 'offender'
(2) occurrences when the person is linked as 'victim'
(3) occurrences when the person is linked as either offender, suspect of bound by order
(4) all linked occurrences limited to offences within the methamphetamine-related crimes (the 59XX series of codes), 5F or 1D events, or codes within those recognised as the common types associated with the Police referrals – namely 4322, 5127, 4139, 4211, 4129, 4124, 1643, 1543; and (5) offences except the 59XX series.

The most common offences for all participants (except the matched controls) are listed in Table 2.

Table 2: Most common offences for those entering Te Ara Oranga support

Rank	Police code	Police identified or referred		% of all offences		Police code	Health referrals		NZCHI value	% of all offences
1	4322	Shoplifts (estimated value under $500)	493	6.8%	6.25	4322	Shoplifts (estimated value under $500)	381	6.25	5.3%
2	1543	Male assaults female	388	5.4%	11.25	1543	Male assaults female	347	11.25	4.8%
3	4373	Theft (under $500)	316	4.4%	6.5	5127	Wilful damage	334	5	4.6%
4	5127	Wilful damage	304	4.2%	5	4373	Theft (under $500)	307	6.5	4.2%
5	4211	Unlawful takes motor vehicles (motor cars/trucks etc)	285	3.9%	18.75	4211	Unlawful takes motor vehicles (motor cars/trucks etc)	236	18.75	3.3%
6	B184	Unlicensed driver failed to comply with prohibition	219	3%	1.8	A518	Breath alcohol level over 400 mcgs per litre of breath	223	3.2	3.1%
7	3252	Procure/possess cannabis plant	179	2.5%	1.8	3536	Disorderly behaviour S4 S/Offences Act	192	1.1	2.7%
8	A518	Breath alcohol level over 400 mcgs per litre of breath	171	2.4%	3.2	4125	Burgles (other property) estimated value $500 to $5,000 by night	181	30	2.55
9	4129	Other burglary (other property)	151	2.1%	45	B184	Unlicensed driver failed to comply with prohibition	168	1.8	2.3%
10	4122	Burgles (other property) estimated value $500 to $5,000 by day	146	2%	45	3252	Procure/possess cannabis plant	160	2.8	2.2%
			7,546	36.7%				**7,237**	35%	

The effect of these outcomes is further refined by the cross-matching of participants to health data (where these are available); this is done to isolate those who have been through Te Ara Oranga-treatments from those who have not. It is also possible to identify the type of closure location following a course of treatment; this has bearing on the success of the engagement with Health.

Consideration of health costs

Health records present a high-level view of a person's point of contact with the system within a data record spanning October 2015–October 2020. The data comprises 236,782 records associated with the 1,368 recorded referrals,[13] around 150 points of contact on average.

The records of points of contact come with a 14-item reference, along with a record of associated costs. The recorded dates allow for consideration of the points of contact prior to a Te Ara Oranga referral and after. The costs associated with different types of treatment are used as a proxy for the severity of the needed health support.

Table 3: Treatment type classifications and their associated costs in supplied by the NDHB

Treatment location	Treatment cost
Respite	$220 per night
NGO Group	$25 per client per hour
DHB Group	$50 per client per hour
NGO Med Run	$12.50 per client per event
Detox	$711 per bed day
Non-Psych Ward	$1,493 per day
ED	$1,452 per attendance
DHB Crisis	$260 per hour
Subacute	$615 per bed day
NGO Res	$225 per bed day
DHB Med Run	$17 per client per event
IPU	$862 per bed day
NGO Contact	$142 per hour
DHB Contact	$216 per hour

[13] 1,579 persons were considered initially, but further investigation of the matched controls resulted in numbers dropping to n = 1,368.

It is important to note that the files record these classifications without identifying whether methamphetamine is a significant cause for the presentation. The data are analogous to the Police points of contact in that charges may be quite unrelated to the use of methamphetamine. This highlights the necessity of moving past descriptions of the basic data and, instead, undertaking comparisons between people identified for referral into Te Ara Oranga, and people who are not.

Table 4 presents the number of contacts with the health system before a referral to Te Ara Oranga and after. The aggregated costs of these points of contact are included, as referenced by Table 3 above. Police points of contact are included to give reference. The referrals are divided by source and whether the referral is to a Te Ara Oranga provider.

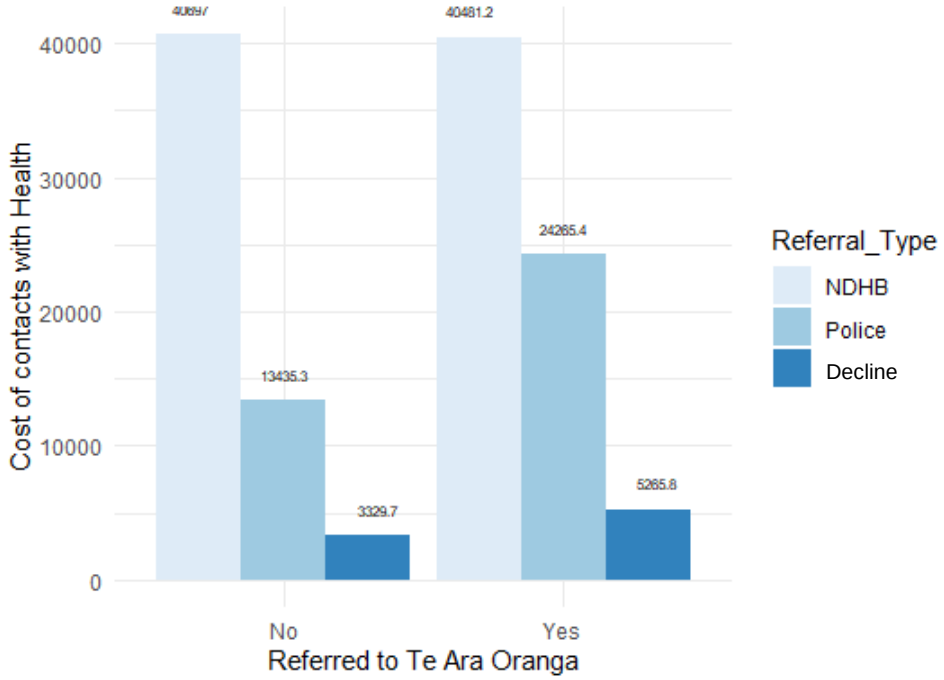
Table 4: The number of Police calls for service, the number of contacts with Health before and after a referral to Te Ara Oranga (TAO), and associated indexed health costs for points of contact with Health after referral to Te Ara Oranga by referral source

	Referred to TAO	n	Accumulated post-referral health cost	Number of health contacts before referral	Number of health contacts after referral	Number of Police contacts before referral	Number of Police contacts after referral
NDHB	Yes	218	m = $40,481 sd = $83,297	m = 114 sd = 232	m = 9.8 sd = 44.9	m = 8.7 sd = 9	m = 3 sd = 3.8
	No	245	m = $40,697 sd = $98,843	m = 138 sd =300	m = 31.5 sd = 121	m = 11.1 sd = 12	m = 3.5 sd = 4.4
Police	Yes	255	m = $24,265 sd = $56,339	m = 64.3 sd = 163	m = 13.3 sd = 84	m = 12.8 sd = 13	m = 4.1 sd = 4.8
	No	274	m = $13,435 sd =$89,367	m = 17.5 sd = 100	m = 2.2 sd = 9	m = 15.8 sd = 15	m = 4.8 sd = 5.3
Declined referral (from Police)	Yes	28	m = $5,266 sd = $22,076	m = 10.4 sd = 41	m = 4.4 sd = 17	m = 11.8 sd = 15	m = 4.5 sd = 5.6
	No	82	m = $3,330 sd = $18,264	m = 7.1 sd = 31	m = 0 sd = .3	m = 12.9 sd = 14	m = 3.4 sd = 4.7

The category of those that declined a referral from Police is included in Table 4 to illustrate an important consideration in the data. The mean cost on the health system for a person referred to Te Ara Oranga is approximately $40,000 when the referral is from Health, $24,000 from Police, but only $3000 for the decliners (or $5,000 when they decline the referral from Police but enter the programme through a different channel).[14] These results are illustrated in Figure 17 below.

[14] Note: this cost category has low numbers, i.e., n = 28.

Figure 17: The costs associated with contact with Health by whether referred to Te Ara Oranga or a traditional health service



The health costs associated with points of contact are aggregated to form an index of the 'severity' of health concern. The assumption is that those with highest need will cost more and those with the lowest need cost the least. On this interpretation the evidence supports the idea that those who decline the Police referral see themselves as being the lowest need, very significantly lower than those who accept a referral. Of course, this perception need not be true, they may have a higher need. They may also represent the best opportunity for an intervention with the greatest benefit, because the intervention occurs ahead of significant personal or social harm. Importantly, Police are identifying a lower-need client for referral than those that would traditionally appear to Health.

Method of analysis

Main comparisons can be made between six different referral pathways:

(1) identified by Police (but not referred)
(2) referred by Police
(3) declined referral
(4) matched controls
(5) referred by Health
(6) referred by NGOs (Salvation Army, Odyssey House, Ngāti Hine Trust), hospital emergency department (ED) or Pou Whānau connectors.

Individual factors are modelled using a linear mixed-effects model with the main dependent measure being the before/after change in offending or contact with Police (as an offender, for example) – as measured by the aggregated CHI-Harm values for offences recorded before referral to Te Ara Oranga and after. The analysis is done using the lme4 package running R, version 4.0.3. The fixed effects are the type of referral source and participation in Te Ara Oranga. A random effect is modelled as a separate intercept for each individual. This helps reduce the variability associated with individual histories and when someone entered the programme. Also, this allows a random length of time to re-offend for each person, a consequence of the fact that most persons have a unique date of referral. That is, not everyone joined the programme on the same day as might be usual in trial designs.

It is important to recognise that the effects of Te Ara Oranga are masked in simple analysis and that the results derived reflect a sophisticated effort to cross match data between health and Police systems. The initial comparisons (for example, see those represented above in Table 3 and Table 4 do not fully account for the level of engagement with the programme and the impact on the Justice sector.

Results

Table 5: The before and after average aggregated NZCHI values based on recorded contact with Police by the category of referral (including a matched control)

Referral source	N	Identified as suspect, offender or bound by order		Identified as victim		Identified as offender for drug (4000 series offending)		Identified as offender excepting drug (59XX series offending)	
		Before Mean (MaxCHI)	After Mean (MaxCHI)	Before Mean (MaxCHI)	After Mean (MaxCHI)	Before Mean (MaxCHI)	After Mean (MaxCHI)	Before Mean (MaxCHI)	After Mean (MaxCHI)
Identified by Police (but not referred)	286	115.8 (sd =2 21)	30.5 (sd=117.4)	96.3 (sd=289.2)	30.5 (sd=172.2)	51.2 (sd=148.2)	10.9 (sd=47)	94.2 (sd=200.2)	42.2 (sd=112)
Declined referral	110	110.8 (sd=262.4)	14.4 (sd=45.2)	128.4 (sd=371.2)	16.5 (sd=57.7)	20.6 (sd=55.1)	7.5 (sd=37.1)	99.5 (sd=257.4)	10.5 (sd=34.0)
Referred by Police	243	131.4 (sd=305.4)	39.1 (sd=205)	82.6 (sd=253.9)	17.4 (sd=105.7)	38.6 (sd=128.3)	16.0 (sd=102)	113.5 (sd=284.3)	35.8 (sd=204.4)
Matched control	271	62.9 (sd=175)	9.9 (sd=55)	40.6 (sd=207)	3.3 (sd=22)	24.6 (sd=117)	3.5 (sd=23)	56.7 (sd=166)	7.7 (sd=52)
Referred by Health	463	97.7 (sd=221)	25.3 (sd=129)	70.9 (sd=251)	18.6 (sd=95)	28.1 (sd=92)	4.5 (sd=26)	85.2 (sd=204)	23.4 (sd=128)
Referred by NGOs/ ED or Pou Whānau connectors	266	142.1 (sd=245)	29.5 (sd=245)	53.6 (sd=245)	13.9 (sd=245)	39.0 (sd=245)	10.7 (sd=245)	127.0 (sd=245)	27.6 (sd=245)
Total	**1,597**								

Notes: N = 1639. Data drawn up to May 2020 with referral dates being contained with October 2017–October 2019.

The figures in Table 5 are a basic representation of the results, as they can compare the matched controls, those identified but who were not referred, and those groups that have progressed through some version of Te Ara Oranga (referred by Police, referred by Health, referred by NGOs/ED or Pou Whānau connectors). Some of those (n = 28) who decline a referral from Police are found to cross match with a health referral, but they are considered separately here.

A first look at the rates of post-referral offending would lead to a false understanding because it appears that a main treatment group (those referred by Police) are among the worst post-treatment offenders – largely because of an elevated post-treatment offending with drug-related crime. This misleading outcome is because this first consideration has yet to account for whether the referral led to any kind of contact with Te Ara Oranga.

Table 6 shows the rates of offending before and after a referral considering those who have contact with Te Ara Oranga and those who do not, independent of the type of referral made.

Table 6: The before and after average aggregated NZCHI values, based on recorded contact with Police by whether a referral was made to Te Ara Oranga provider

Referral source	N	Identified as suspect, offender or bound by order		Identified as victim		Identified as offender for drug (4000 series offending)		Identified as offender excepting drug (59XX series offending)	
		Before Mean (MaxCHI)	After Mean (MaxCHI)	Before Mean (MaxCHI)	After Mean (MaxCHI)	Before Mean (MaxCHI)	After Mean (MaxCHI)	Before Mean (MaxCHI)	After Mean (MaxCHI)
Received Te Ara Oranga treatment	767	118.2 (sd=277.8)	22.0 (sd=103.9)	78.7 (sd=255.6)	20.0 (sd=124.9)	38.0 (sd=117.6)	10.3 (sd=65.7)	101.1 (sd=256.6)	17.2 (sd=100.2)
Usual treatment	601	115.9 (sd=247.4)	37.4 (sd=184.8)	80.5 (sd=264.8)	19.5 (sd=106.6)	34.2 (sd=114.1)	8.1 (sd=66.2)	101.7 (sd=236.0)	35.5 (sd=184.2)

Notes: N = 1368. Data drawn up to May 2020 with referral dates being contained with October 2017–October 2019.

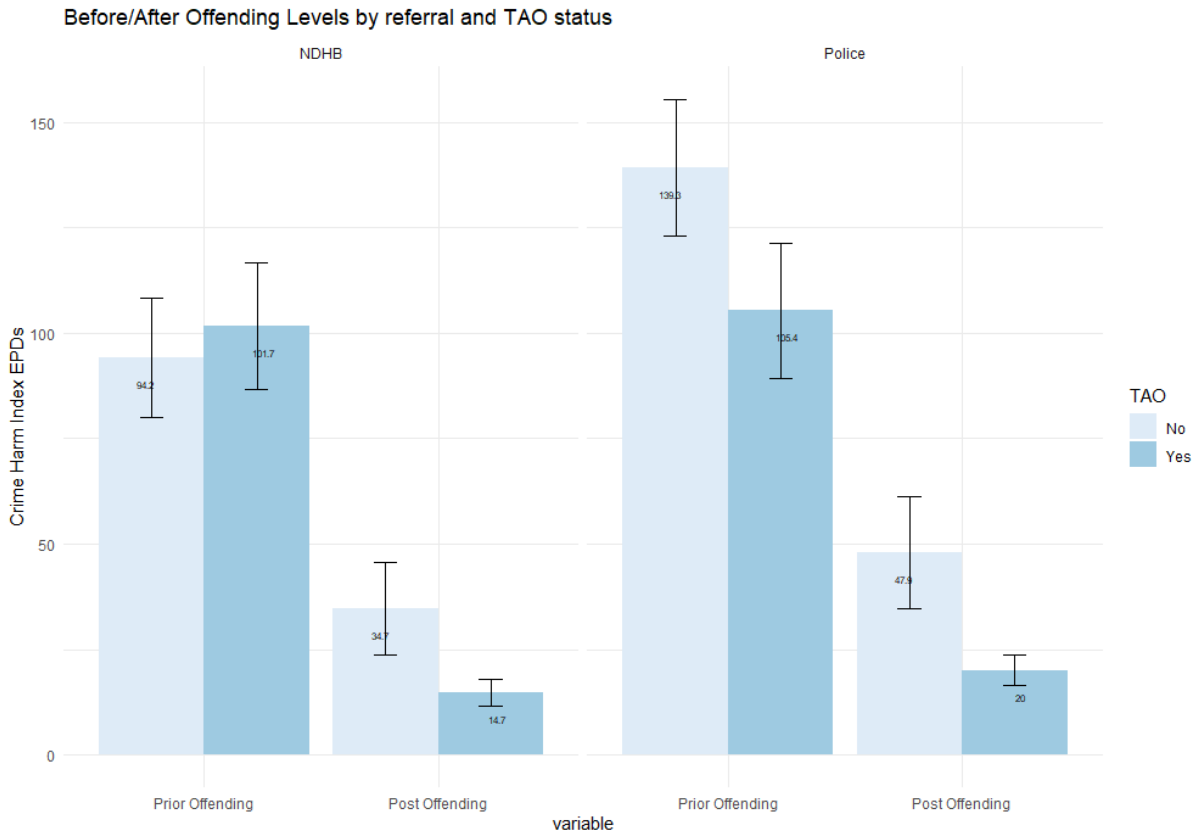
Table 6 does offer some insights into the impact of Te Ara Oranga, but it is collapsed across referral types. From this perspective we do not know whether Te Ara Oranga is effective from one type of referral or another. However, it does appear that those receiving Te Ara Oranga have, on average, less post-treatment offending, especially for crimes unrelated to methamphetamine use itself.

There is a large amount of variability (albeit consistent across the independent variable) and this is a source of concern for drawing any type of conclusion from this basic representation. Notwithstanding, the between-group differences are significant, $t = 2.453$, df = 719.8, p = .014 for offending post-referral to Te Ara Oranga – comparing those that receive Te Ara Oranga and those that do not.

This result is illustrated in Figure 18 below where it is separated into the two major referral pathways. Here it is clear that both NDHB and Health contribute to the reduction in offending. It can also be seen that Police select those with lower accumulated crime histories, though these are not significantly different from those being referred by Health. There is a difference between the before referral crime harm for those referred by Police, but the difference is not significant (t = 1.49, df = 526.7, p = .14 ns).

Considered collectively, not all groups who enter Te Ara Oranga successfully reduce their offending from expected levels. There are concentrations of 'successes' for Te Ara Oranga when this is measured as a reduction in the post-treatment offending of those referred to and receiving Te Ara Oranga. The concentrations do not neatly align with those who are treated, nor with a particular referral source, but as a combination of both.

Figure 18: Post-referral levels of offending for persons referred to Te Ara Oranga (TAO) compared to those that are not, delineated by whether the referral is from NDHB (left) or from Police (right)



Analysis

The matched controls are removed because they outperform any other group and distort interpretation of the modelling (see Table 3). They also create a rank deficiency in the factorial design because they have no 'usual treatment' in the health record. So, they are set aside for further consideration. The remaining modelling also removes those who declined a referral (n = 110), because they also distort a design that requires a 'referral source' – even though some do make it into Te Ara Oranga and usual service types. This reduced the overall design to n = 1258 with average before/after levels of CHI-Harm represented in Table 3.

Analysis is by way of a hierarchy of a mixed effect model concentrating on two main factors:

(1) what referral path a person had to Te Ara Oranga (NDHB, Police, SA/OD/ED or 'none')[15]

(2) whether the person referred received service through Te Ara Oranga or some other service.

The null model is the one that looked at the average expected rate of the before and after accumulated harm from offending. This rate is estimated from calculating the combined before/after offending harm for each person entered with separate intercepts.

The two main factors are entered individually and then in combination to form what is generally known as the 'saturated model'. A comparison is then made between the two models to determine whether the more sophisticated models (the one that includes either of the two factors, or the model that combines both) are an improvement (i.e., are significantly different from) the model with no factors (the null model).

The saturated model takes the form:

Equation 1: The linear mixed-effects modelling formula used to consider whether Te Ara Oranga has a measurable improvement in post-referral offending harm.

CHI harm from offending ~ before/after + source of referral * entered Te Ara Oranga programme + (1 | person identifier)

The basic comparison is to determine whether the referral makes any difference to later offending. The model with the referral source is not significant, χ^2 (3, 1258) = 5.57, p = .13 ns. The model that considers referral into Te Ara Oranga is also not significant, χ^2 (1, 1258) = 1.26, p = .26 ns. Likewise, the model that considers both is also not significant.

Recall from the initial analysis that the NDHB referrals are far more likely to be male: only 36% females in NDHB, compared with 45% from Police. Also, Police referrals are far more likely to be Māori: 72% compared with 54% in Health. Figure 19 illustrates this difference. We also know that males are far more likely to have a higher aggregated Crime Harm score prior to a referral than females. Māori are more likely to have a higher aggregated crime score prior to the referral than non-Māori.

[15] Note that 'none' does not accurately reflect what happened. None here means the referral from Police was not progressed, but it needs to be remembered some persons found their way into TAO through alternative pathways.

So, the modelling of the data takes account (controls for) the differences in the proportions of Māori and Males who are referred to Te Ara Oranga from each source. Comparison to the base model (just the expected drop in pre-post offending) shows significant effects for the being Male, χ^2 (1, 1978) = 19.38, p <.001, and for being Māori, χ^2 (1, 1978) = 47.03, p <.001.

Figure 19: Prior and post-referral offending for Māori compared with non-Māori (left), and for females compared with males (right)

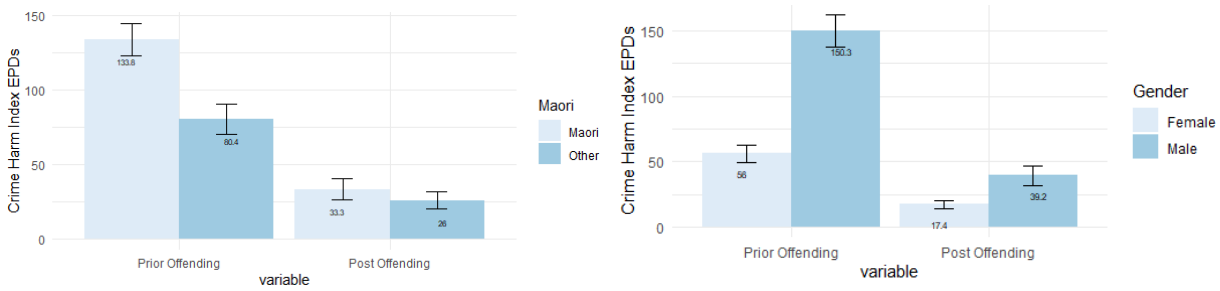


Table 7 (below) can be read to indicate the estimates of each factor in the models that accounts for gender and ethnicity differences in the referral pathways. When accounting for these factors, a referral through to Te Ara Oranga leads to a reduction in post-referral offending.

Table 7: The coefficients from the linear mixed-effects model examining the before/after rates of offending for those entering Te Ara Oranga compared with those that did not

	Estimate	Std error	t value
(Intercept)	85.66	11.595	7.388
Post-referral offending compared with pre-referral offending	-81.25	8.838	-9.194
Males compared with females	61.99	9.335	6.641
Non-Māori v Māori	-33.90	9.291	-3.653
Te Ara Oranga referral vs no Te Ara Oranga	-14.62	9.129	-1.602
Police referrals compared with Health referrals	19.68	9.183	2.143

This model containing just the main effect for referral source is significantly different from the model that specifies only the demographic factors, referral to TAO and the referral source χ^2 (1, 1258) = 7.09, p <.029. It is also evidence that Police referrals perform worse than the NDHB, but recognises they start off with higher accumulated crime harm.

Consideration of the size of the effect requires comparison to the model that specifies just the pre-post difference in those that are not referred; this is represented in Table 8 below.

Table 8: A basic model indicating the expected level of offending without considering any factors associated with referral pathways

	Estimate	Std Error	t value
(Intercept)	118.43	9.87	11.993
Post-referral offending compared with pre-referral offending	-76.43	13.58	-6.65

The value expected of harm the post-referral period for those who do not get a Te Ara Oranga referral is *m* = 42 EPDs, +/- 26.61. This is reduced, on average, by 14.62 EPDs to an average value. The reasonable estimate based on this statistic is that referral to Te Ara Oranga reduces post-referral offending harm by approximately 34%.

Victimisation

The same modelling is conducted for post-referral harm from victimisation, and these models are all found not to be affected by Te Ara Oranga. That is, in terms of the level of harm from post-referral events of victimisation, there is no significant observed difference in those who receive Te Ara Oranga compared to those who receive usual treatment.

Offending excluding drug-related offences

The same modelling is conducted for post-referral offending when drug-related charges in the 59XX series of codes are considered. These models turn out to be very well correlated with the modelling presented. Consequently, there are no additional insights to be gained from presenting this, it neatly aligns with the effects represented in Table 7 above.

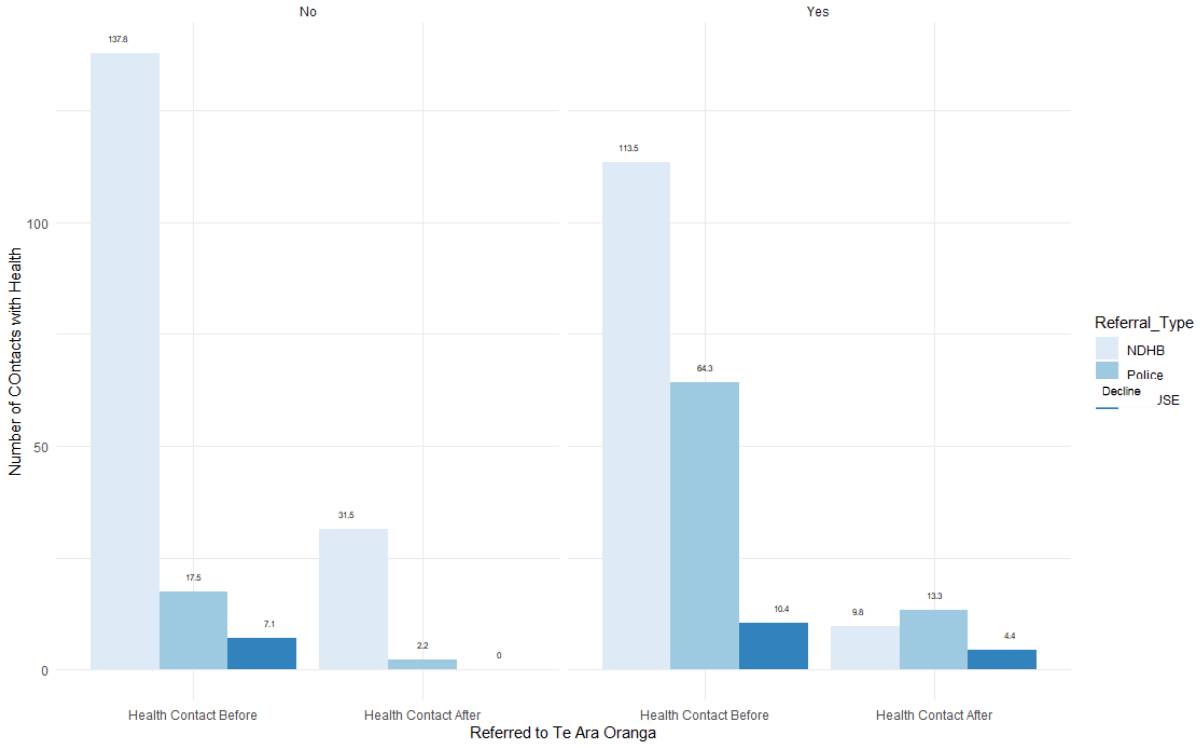
Health contacts

The expected increase in health contacts is evident in Table 6 above. The result is illustrated in Figure 20 below. The data are again complicated by data that are 'missing', meaning there is no record on any health matching contact with the individual referred (or who declined the referral). This is either because the individual has no contact with the health system or because we could not identify them well enough to match them. With low rates of contact those without matches could distort the interpretation. This is not simply a technical concern, because the rate of contact with Health for those who declined, and who do not go through to Te Ara Oranga (n = 82), is zero. Such a finding should not be overlooked as an artefact of the data processing; it exceptionally important and requires further attention.

In general, Police referrals to Health have significantly fewer prior contacts (t = 2.63, df = 381.1, p = .009) with the health system (m = 64.3) compared with those identified by Health (m = 113.5).

Putting aside the issue of missing matches, it is evident that Te Ara Oranga increases the points of contact with the health system when the referral derives from Police (t = -2.11, df = 259.6, p = .04); and decreases the number of contacts with Health when the referral comes from NDHB (t = 2.61, df = 316.72, p = .009).

Figure 20: The rate of contact with the health system for those who are referred into Te Ara Oranga and those that are not



Note: see Table 4 above for the associated data.

Indicators of engagement with the programme

The rates of engagement for Te Ara Oranga are indicated by the recorded case close-out. These form a 19-item scale with the most often recorded being 'Null' (which can indicate the case is still open and some engagement has taken place). Real indicators of lack of engagement were indexed by combining nine items into a value of 'Not Engaged in Te Ara Oranga'. These items were:

(1) Lost to follow-up

(2) Involuntary discharge (e.g., prison, or funding ends)

(3) Client terminated services

(4) Did not attend following referral

(5) Case declined – other services more appropriate

(6) Deceased

(7) Self-discharge

(8) Case declined – inability to provide services

(9) Provisional discharge (e.g., non-compliant or risk to others).

Any other form of record was regarded as successful engagement of some form. The basic index (engaged or not engaged) was then compared; people referred to Te Ara Oranga versus those who received a usual response. The odds of being better engaged in Te Ara Oranga were calculated and found to be non-significant, (OR = 1.0028, LCL =.772 UCL = 1.30, p = .9 ns).

Discussion

There is a wide variation in methamphetamine users seeking support

It is notoriously difficult to move from monitoring a clinical understanding of addiction to modelling the outcomes of new clinical practices across a programme of interventions, especially when it is comprises a suite of interventions (see Walton & Martin, 2021). Referrals into Te Ara Oranga are from encounters with people at different stages of contemplation (Prochaska & DiClemente, 1986), different levels of addiction, different levels of experiences of harm, often occupying different positions within a multi-level business model in an underworld network of activity (Bichler et al., 2017). Each person has their unique story that underpins their transition into seeking support to free themselves from methamphetamine use (O'Brien et al., 2008). Consequently, modelling that change is challenging.

The administrative data records do not capture whether a person is a mild or heavy user

The sources of variability that accompanies each person are currently unrecorded in the ordinary administrative dealings with people referred. Police simply do not record details such as the level of addiction in the data record, although they might note such in the narrative of the conversations and statements. Somewhat surprisingly, Health does not record such detail either, or at least in a way that is readily accessible to this inquiry. Police can note methamphetamine use record a health referral, but a general noting of drug use is not an accurate account of methamphetamine use when compared to the reports from known users. Methamphetamine use is largely hidden in society and in the data record.

Referral to Te Ara Oranga does reduce criminality

However, even with our data limitations, we still find that Te Ara Oranga has a measured positive impact on the offending of those referred to it by Police and by Health. Against a 'noisy' data background, those referred to Te Ara Oranga do in fact reduce their post-referral offending by approximately 34% compared to those who do not get a Te Ara Oranga referral. The result is significant at a broad programme level and still significant once factors related to the referral are controlled.

Methamphetamine use appears as a major driver of crime in the Northland area

The difficulties of the data environment are best illustrated by the failure to identify a reasonable control group through the propensity-matching process. Using coarsened exact matching a control group of 271 individuals were identified by demographics such as age, gender, ethnicity, location, and previous convictions. However, examination of criminality in the matched post-referral period demonstrated a radical difference in the control group: the control group had very low levels of offending compared to those who were identified as users of methamphetamine. People in the control group have about a third of the accumulated crime harm of people who were referred or to those identified and not referred (i.e., known methamphetamine users identified by Police). Indeed, the only other group the control group roughly matched were those that declined a referral. The controls were found to have lower before-referral accumulation of crime harm, and much lower levels of post-referral period offending.

A strong conclusion can be drawn from the effort to try to create a reasonable control based on available administrative data. Methamphetamine use is observed to be a major driver of life-course criminality. We failed to match the high levels of post-referral offending in known methamphetamine users, whether they went through any type of treatment. Even when the control group was deliberately biased to select a match with the highest number of prior convictions, this still yielded offending histories that are around half those of the identified methamphetamine users.

That methamphetamine use is a major driver of life-course criminality may be an unsurprising result, and one well-understood in the literature (Dobkin & Nicosia, 2009; Goldsmid & Willis, 2016; McKetin et al., 2020), though the focus of that driver is sometimes directed towards a link between methamphetamine use and violence (Cartier et al., 2006; Sommers & Baskin, 2006). The evidence from our evaluation is that the highest volume crime types do not disproportionately manifest themselves in violence but rather as property-related offending (what is known as acquisitive crime – Mcintosh et al., 2007). It is not unusual to find evaluations that just consider a small set of acquisitive crimes (burglary) as the dependent measure. Some just consider drug use. Here we considered four main classifications of crime type to consider the impact of Te Ara Oranga:

(1) All offending

(2) Victimisation

(3) Drug-related offending

(4) All crime except drug-related offending.

The results establish similar trends with each of these.

The formation of natural experiment allowed for the evaluation of Te Ara Oranga

Between October 2017–2019 the NDHB ran parallel programmes of effort alongside the rollout of Te Ara Oranga. This was helpful because Te Ara Oranga's limited budget meant not everyone could be triaged into Te Ara Oranga. And it leads to an important aspect of this evaluation; the comparison is not between Te Ara Oranga and usual service.

There have always been outcomes for people who touch the Justice system or Health system using methamphetamine. The NDHB has always provided service to those in need, and Police have often arrested drug users and placed them before the courts. So, the comparison presented here is between the traditional business as usual approach and referral to Te Ara Oranga support.

If the comparison were between a baseline in which no action is taken (because, for example, methamphetamine is not used) and any type of referral, then the effects of referral would be so large that they would overwhelm the need for analysis. Put simply, treatment for methamphetamine use is always going to bring about large benefits because of the radical differences in criminality between those that use and those that do not.

The quantification of the benefit of Te Ara Oranga

The model that incorporates the interaction between referral source and Te Ara Oranga service is significantly different from the base model, which includes only the demographic factors and the main effect for referral source (either from Police or Health). Using this form of hierarchical analysis, the specific effect of a referral to TAO can be calculated. The benefit for those referred to Te Ara Oranga compared to those receiving a traditional referral is clear: an estimated 34% reduction in harm from offending for people referred to Te Ara Oranga.

Police and Health address different types of methamphetamine user

Separating the sample into referrals to Te Ara Oranga and to the usual service allows a natural experiment that can be used to evaluate the performance of the new programme. This experiment results in observations that are important to help understand the partnership that collectively brings about the successful reduction in crime from referrals to Te Ara Oranga.

Police encounter a qualitatively different sort of methamphetamine user than those who appear to the health system. Referrals from Police have clearly different demographics. The fact that Police referrals have around half the number of prior contacts with Health signals an important driver of the programme's overall success. Police are tapping into a referral source that Health have far less access to. Likewise, referrals from Health well over-represent contact with the health system and less contact with Police. It is the combination of Police and Health referrals that brings people into Te Ara Oranga.

It is reasonable to further examine the value of these differences. Although the differences signal difficulty for this evaluation, they also point to a success of the programme if it recognised that the combined referrals are reaching a much wider set of users than Health could access alone.

Self-exemption features and decliner likely hold key insights into the programme limits and how to improve the programme for wider rollout

However, there is another source of complexity. In reaching out to known users Police also encounter those who self-exempt, i.e., those who decline a referral. The concept of self-exemption is well-understood in tobacco control when messaging is ignored by a target audience with common characteristics (Dillard et al., 2018). In our study, there is good evidence that the group of users who decline a referral have little contact with Health and are far less likely to be charged with an offence in the 'post-referral' period of observation. These people may be less addicted or otherwise very resilient, but they are characteristically separate from the others referred to Te Ara Oranga based on the observation of the post-referral period of contact with Health and Police. A long-term follow-up of these users would certainly help determine where the leading edge of Te Ara Oranga can demarcate those that are ready for support and those that are not.

Limitations

The data here are drawn from administrative sources and matched against records of those referred to Te Ara Oranga. This is a retrospective design and not an ideal method of evaluation. Alternative designs are prospective studies and interrupted time series designs. One issue is that the variability associated with participants' histories has been accounted for through complex statistical controls, and these may obscure the message for those seeking a simple explanation as to whether the programme works and where it works best. A more usual experimental or factorial design is more familiar and so any messages are likely to be clearer. The reality is, however, that the complexity of the current design matches the circumstances of the task; methamphetamine use is not simple, it is complicated.

The effect of Te Ara Oranga may have a life-long impact or be limited to the post-referral period. The former may be desired, but it cannot be determined here. To find out whether Te Ara Oranga has enduring impacts would require a long-term follow-up, perhaps within the same data records at future points in time.

A programme evaluation is necessarily high-level, and with that comes certain limitations. The effort here touches on important information that can be determined by examining administrative data. Some aspects of the analysis under-represent the opportunity for detailed analysis. For instance, referrals from Salvation Army, Odyssey House and through Screening, Brief Intervention and Referral to Treatment (SBIRT) at the emergency department are collectively excluded because they do not form a natural experiment. The form of the analysis used in our evaluation required a group of people to be referred but not receive Te Ara Oranga, and so the assumption is that all those collated from the Salvation Army, Odyssey House data, and other sources (SBIRT and Pou Whānau connectors) all received at least some aspect of the referral to a Te Ara Oranga service. This assumption leaves open the opportunity for different sorts of analysis that might separate out the benefits of these components of Te Ara Oranga.

Future evaluation recommendations

This evaluation represents an effort to answer whether a programme-wide effort achieves a benefit; it does not seek to provide the detail necessary to refine practices and outcomes for those implementing the programme. Future work should take a focus on supporting ways to tailor support for those who gain benefit from Te Ara Oranga.

The NDHB understands the limitations of their data environment because of their involvement in supporting this outcomes evaluation. They are now taking active steps to better record the broad details that produce measures of individual differences in addiction and levels of engagement with the programme. This task is difficult as it requires co-ordinating different referral information into a single register that sits alongside, or is co-ordinated within, the usual data records associated with person's contact with the Health system. However, within the context of the now established benefits of the programme, it is clearly beneficial to understand the wide individual variation in impacts. It is important to have the ability to match individual characteristics with individual treatments (especially within the Matrix Model offering) to work out what makes some people progress more successfully than others. This level of refinement is likely achieved through epidemiological analysis of the records of each individual.

It would be ideal to record 'stage of contemplation', length of use of methamphetamine, measures of addiction (especially those that might be specific to methamphetamine use), level of connection to sale and distribution of methamphetamine, reliance on criminality for lifestyle, employability, life stage, personalisation of referral (e.g., from Police or Pou Whānau connector), connectedness to whānau, and connectedness to iwi (conversely, dislocation from whenua). This list is also a start point for types of information that might be collated for those entering Te Ara Oranga. We believe this list would be further refined through detailed engagement with programme staff, including Police.

There is the opportunity to trial the benefits of conjoint family therapy by following the evaluation design established here.[16] Conjoint family therapy involves engagement with whānau or surrogates drawn from hapu and iwi. Pleasingly, iwi have expressed their desire to help support those exiting Te Ara Oranga and to participate where they can. A trial of this nature would bring about a better understanding of the mechanisms that keep people out of the Justice sector in the post-treatment period, as well as directly addressing the over-representation of Māori in the post-referral records of criminality.

Two other research opportunities, following a similar design to this evaluation, could be undertaken. The first relates to the employment services care that is particular to only a small number of persons referred to Te Ara Oranga. This work has been separately evaluated (Priest & Lockett, 2020) but not using the evaluation design established here. It is certainly reasonable and important to understand the additional benefits of this component of Te Ara Oranga.

The second opportunity relates to tracking and monitoring the 'decliners' over a longer period. Decliners are people identified as either engaging or not with the programme but at least rejecting the Police's referral. The theory is that these people are on an addiction trajectory, and that they do not recognise the harm that accompanies that pathway (or are already receiving support). The expectation is that those not recognising the potential harm will progress along a pathway that accompanies continued use of methamphetamine.

The NDHB recognises that these people can be monitored to determine whether they:

(1) self-correct, or

(2) continue with drug use-related harm (as measured by future levels of criminality or other measures of harm).

However, it is especially important that the messaging connected to a referral is tailored to an individual's current ability to 'self-exempt'—that is, justify their methamphetamine use as not harmful. This will only be understood by combination of qualitative inquiry (through follow up interviews with those that decline, perhaps when they are again identified by contact with Police), and evidence-based inquiry that directly addresses the reasonableness of that self-exemption.

[16] The original version of the Matrix Model had conjoint family therapy. The Matrix Model as implemented is the 16-week version of the programme, established after its most expensive components (including conjoint family therapy) were removed.

Conclusion of the outcomes evaluation

This evaluation addresses the outcomes of the programme-wide impact of Te Ara Oranga. The theoretical benefits are reduced criminal activity related to methamphetamine use being a driver of crime. There is strong evidence that those identified as methamphetamine users are highly engaged in low-level acquisitive crime. The evidence comes through the large observed differences in their post-referral crime activity compared to controls propensity-matched by age, gender, ethnicity, location, and previous number of convictions.

However, those identified and referred to Te Ara Oranga reduce their expected crime harm by an estimated 34% when factors such as gender, ethnicity and referral source are controlled for in a linear mixed-effects model that uses a before/after comparison of a large within-subjects mixed model. The data modelling is complicated by the breadth of the programme and qualitative differences in types of meth users referred into the programme by Police and Health. It is important to recognise that not everyone identified is referred, and that the successful reduction in offending is limited to a smaller set of all those who touch Te Ara Oranga through being identified as a methamphetamine user.

Each sub-component of Te Ara Oranga (referrals from NGOs or referrals from the Employment Works Programme) would benefit from separate and detailed evaluation. This is especially the case for Police who encounter and identify a group who decline the referral. These people are radically different in their need and their refusal could indicate both a failure of messaging and the operation of a self-exemption (or resistance to messaging), which might be overcome with a tailored approach.

The fact that Police do identify a different set of methamphetamine users to those referred to by Health offers strong support for the intent of the programme. That the programme demonstrates large benefits in the reduction of post-referral crime harm should be encouraging to those who would seek to adapt, refine, and strengthen the trial or deliver it elsewhere. The opportunity to undertake longer-term follow-ups with those who have been engaged in this early trial would be facilitated by improved data collection (for example, expanding to consider screens for levels of addiction of all persons being considering for referral). There are other opportunities to undertake more detailed analyses to assist the practice of referring people into the programme and monitor how they are supported after it.

References

Akroyd, S., Paulin, J., Paipa, K., & Wehipeihana, N. (2016). *Iwi panels: An evaluation of their implementation and operation at Hutt Valley, Gisborne and Manukau from 2014 to 2015.* Ministry of Justice, New Zealand Police and Department of Corrections. **https://www.justice.govt.nz/assets/Documents/Publications/iwi-panels-evaluation-report.pdf**.

Allsop, S. (2007). What is this thing called motivational interviewing? *Addiction*, *102*(3), 343–345. **https://doi.org/10.1111/j.1360-0443.2006.01712.x**

Andreasen, A. R. (2002). Marketing social marketing in the social change marketplace. *Journal of Public Policy & Marketing*, *21*(1), 3–13.

Anshel, M. H., & Kang, M. (2008). Effectiveness of motivational interviewing on changes in fitness, blood lipids, and exercise adherence of police officers: An outcome-based action study. *Journal of Correctional Health Care*, *14*(1), 48–62.

Antler, Y. (2018). *Multilevel Marketing: Pyramid-Shaped Schemes or Exploitative Scams?*

Bernstein, E., Bernstein, J., Feldman, J., Fernandez, W., Hagan, M., Mitchell, P., Safi, C., Woolard, R., Mello, M., & Baird, J. (2007). An evidence-based alcohol screening, brief intervention and referral to treatment (SBIRT) curriculum for emergency department (ED) providers improves skills and utilization. *Substance Abuse: Official Publication of the Association for Medical Education and Research in Substance Abuse*, *28*(4), 79.

Bichler, G., Malm, A., & Cooper, T. (2017). Drug supply networks: A systematic review of the organizational structure of illicit drug trade. *Crime Science*, *6*(1), 2.

Burke, B. L., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology*, *71*(5), 843–861. **https://doi.org/10.1037/0022-006X.71.5.843**.

Cartier, J., Farabee, D., & Prendergast, M. L. (2006). Methamphetamine use, self-reported violent crime, and recidivism among offenders in California who abuse substances. *Journal of Interpersonal Violence*, *21*(4), 435–445.

Caulkins, J. P., Disley, E., Tzvetkova, M., Pardal, M., Shah, H., & Zhang, X. (2016). Modeling the structure and operation of drug supply chains: The case of cocaine and heroin in Italy and Slovenia. *International Journal of Drug Policy*, *31*, 64–73.

Centre for Disease Control. (2020). *Types of Evaluation*. 2.

Copello, A., Templeton, L., Orford, J., & Velleman, R. (2010). The 5-Step Method: Evidence of gains for affected family members. *Drugs: Education, Prevention and Policy*, *17*(sup1), 100–112.

Cruickshank, C. C., & Dyer, K. R. (2009). A review of the clinical pharmacology of methamphetamine. *Addiction*, *104*(7), 1085–1099. **https://doi.org/10.1111/j.1360-0443.2009.02564.x**.

Cunningham, R. M., Bernstein, S. L., Walton, M., Broderick, K., Vaca, F. E., Woolard, R., Bernstein, E., Blow, F., & D'onofrio, G. (2009). Alcohol, tobacco, and other drugs: Future directions for screening and intervention in the emergency department. *Academic Emergency Medicine*, *16*(11), 1078–1088.

Curtis-Ham, S., & Walton, D. (2017a). Mapping crime harm and priority locations in New Zealand: A comparison of spatial analysis methods. *Applied Geography*, *86*, 245–254.

Curtis-Ham, S., & Walton, D. (2017b). The New Zealand crime harm index: Quantifying harm using sentencing data. *Policing: A Journal of Policy and Practice*, *12*(4), 455–467.

Curtis-Ham, S., & Walton, D. (2017c). The New Zealand crime harm index: Quantifying harm using sentencing data. *Policing: A Journal of Policy and Practice*.

Désy, P. M., & Perhats, C. (2008). Alcohol screening, brief intervention, and referral in the emergency department: An implementation study. *Journal of Emergency Nursing*, *34*(1), 11–19.

DiFranza, J. R. (2020). Neural remodeling begins with the first cigarette. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.

Dillard, J. P., Meczkowski, E., & Yang, C. (2018). Defensive reactions to threatening health messages: Alternative structures and next questions. *International Journal of Communication*, *12*, 23.

Dobkin, C., & Nicosia, N. (2009). The war on drugs: Methamphetamine, public health, and crime. *American Economic Review*, *99*(1), 324–349.

Durie, M. H. (1985). A Maori perspective of health. *Social Science & Medicine*, *20*(5), 483–486.

Durie, M. H. (1997). Maori cultural identity and its implications for mental health services. *International Journal of Mental Health*, *26*(3), 23–25.

Elder, J. W., Wu, E. F., Chenoweth, J. A., Holmes, J. F., Parikh, A. K., Moulin, A. K., Trevino, T. G., & Richards, J. R. (2020, July 17). *Emergency Department Screening for Unhealthy Alcohol and Drug Use with a Brief Tablet-Based Questionnaire* [Research Article]. Emergency Medicine International; Hindawi. **https://doi.org/10.1155/2020/8275386**.

Gage, S. H., & Sumnall, H. R. (2019). Rat Park: How a rat paradise changed the narrative of addiction. *Addiction*, *14*(5), 917–922. **https://doi.org/10.1111/add.14481**.

Goldsmid, S., & Willis, M. (2016). Methamphetamine use and acquisitive crime: Evidence of a relationship. *Trends and Issues in Crime and Criminal Justice*, *516*, 1.

Greenwald, G. (2009). *Drug Decriminalization in Portugal*. Cato Institute.

Guide to Social Cost Benefit Analysis. (2015, July 27). **https://www.treasury.govt.nz/publications/guide/guide-social-cost-benefit-analysis**.

Harland, J., & Ali, R. (2017). *ASSIST on Ice: The alcohol, smoking and substance involvement screening test and brief intervention for methamphetamine use.* DASSA-WHO Collaborating Centre. **https://cracksintheice.org.au/pdf/ASSIST-on-ICE-eManual.pdf**.

Hastings, G., & Domegan, C. (2017). *Social marketing: Rebels with a cause*. Routledge.

Hastings, G., MacFadyen, L., & Anderson, S. (2000). Whose behavior is it anyway? The broader potential of social marketing. *Social Marketing Quarterly*, *6*(2), 46–58.

Herbalife Annual Report. (2019). **https://ir.herbalife.com/static-files/30be29aa-b48a-4405-aef4-cb022afbeb2a**.

Infometrics. (2020). *Quarterly economic monitor*. **https://ecoprofile.infometrics.co.nz/northland%20region/QuarterlyEconomicMonitor/Gdp**.

Irving, A., Goodacre, S., Blake, J., Allen, D., & Moore, S. C. (2018). Managing alcohol-related attendances in emergency care: Can diversion to bespoke services lessen the burden? *Emergency Medicine Journal*, *35*(2), 79–82. **https://doi.org/10.1136/emermed-2016-206451**.

Jackson, N. O., & Pawar, S. (2013). *A Demographic Accounting Model for New Zealand. Nga Tangata Oho Mairangi: Regional Impacts of Demographic and Economic Change – 2013–2014.* National Institute of Demographic and Economic Analysis, University of Waikato.

Kalkhoran Sara, Benowitz Neal L., & Rigotti Nancy A. (2018). Prevention and treatment of tobacco use. *Journal of the American College of Cardiology*, *72*(9), 1030–1045. **https://doi.org/10.1016/j.jacc.2018.06.036**.

Kilanowski, J. F. (2017). *Breadth of the socio-ecological model*. Taylor & Francis.

King, G., & Nielsen, R. A. (2019). *Why propensity scores should not be used for matching*.

LaMorte, Wayne W. (2020). *The Transtheoretical Model (Stages of Change)*. Boston University School of Public Health. **https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchangetheories/BehavioralChangeTheories6.html**.

Le, V., & Lauchs, M. (2013). Models of South-East Asian organised crime drug operations in Queensland. *Asian Journal of Criminology*, *8*(2), 69–87.

Liu, H. (2018). The Behavioral Economics of Multilevel Marketing. *HASTINGS BUSINESS LAW JOURNAL*, *14*, 31.

Mark, S., & Hagan, P. (2020). *Co-design in Aotearoa New Zealand: A snapshot of the literature* (p. 38). Auckland Co-design Lab, Auckland Council.

Marlatt, G. A., & George, W. H. (1984). Relapse prevention: Introduction and overview of the model. *British Journal of Addiction*, *79*(4), 261–273.

McFadden, M., New Zealand, & Ministry of Health. (2016). *The New Zealand drug harm index 2016*.

Mcintosh, J., Bloor, M., & Robertson, M. (2007). The effect of drug treatment upon the commission of acquisitive crime. *Journal of Substance Use*, *12*(5), 375–384. **https://doi.org/10.1080/14659890701495102**.

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. **https://doi.org/10.1016/j.drugalcdep.2020.108262**.

Miller, W. R. (1983). Motivational interviewing with problem drinkers. *Behavioural and Cognitive Psychotherapy*, *11*(2), 147–172.

Miller, W. R., & Rollnick, S. (2009). Ten things that motivational interviewing is not. *Behavioural and Cognitive Psychotherapy*, *37*(2), 129–140.

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford Press.

Ministry of Health and Social Affairs. (n.d.). *Swedish drug policy – a balanced policy based on health and human rights* (p. 12). Government Offices of Sweden. **https://www.government.se/496f5b/contentassets/89b85401ed204484832fb1808cad6012/rk_21164_broschyr_narkotika_a4_en_3_tillg.pdf**.

Murray, C. J. L., Barber, R. M., Foreman, K. J., Ozgoren, A. A., Abd-Allah, F., Abera, S. F., Aboyans, V., Abraham, J. P., Abubakar, I., Abu-Raddad, L. J., Abu-Rmeileh, N. M., Achoki, T., Ackerman, I. N., Ademi, Z., Adou, A. K., Adsuar, J. C., Afshin, A., Agardh, E. E., Alam, S. S., … Vos, T. (2015). Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990–2013: Quantifying the epidemiological transition. *The Lancet*, *386*(10009), 2145–2191. **https://doi.org/10.1016/S0140-6736(15)61340-X**.

National Institute on Drug Abuse. (2018). *Principles of drug addiction treatment: A research-based guide*. **https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/evidence-based-approaches-to-drug-addiction-treatment/behavioral-3**.

National Organised Crime Group. (2020). *5 Dimensional targeting and Disruption of Criminal Business Entities: Making New Zealand's environment as harsh as possible for criminal business entities to operate in.* NZ Police.

NZ Police. (2017). *Prevention First: National Operating Model 2017*. New Zealand Police. **https://www.police.govt.nz/about-us/publication/prevention-first-national-operating-model-2017**.

Obert, J. L., McCann, M. J., Marinelli-Casey, P., Weiner, A., Minsky, S., Brethen, P., & Rawson, R. (2000). The Matrix Model of outpatient stimulant abuse treatment: History and description. *Journal of Psychoactive Drugs*, *32*(2), 157–164.

O'Brien, A. M., Brecht, M.-L., & Casey, C. (2008). Narratives of methamphetamine abuse: A qualitative exploration of social, psychological, and emotional experiences. *Journal of Social Work Practice in the Addictions*, *8*(3), 343–366.

Priest, B., & Lockett, H. (2020). Working at the interface between science and culture: The enablers and barriers to individual placement and support implementation in Aotearoa/New Zealand. *Psychiatric Rehabilitation Journal*, *43*(1), 40.

Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In *Treating addictive behaviors* (pp. 3–27). Springer.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1993). In search of how people change: Applications to addictive behaviors. *Addictions Nursing Network*, *5*(1), 2–16.

Rawson, R. A., Marinelli-Casey, P., Anglin, M. D., Dickow, A., Frazier, Y., Gallagher, C., Galloway, G. P., Herrell, J., Huber, A., & McCann, M. J. (2004). A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. *Addiction*, *99*(6), 708–717.

Rubak, S., Sandbæk, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing: A systematic review and meta-analysis. *British Journal of General Practice*, *55*(513), 305–312.

Saunders, J. B., Aasland, O. G., Amundsen, A., & Grant, M. (1993). Alcohol consumption and related problems among primary health care patients: WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-I. *Addiction*, *88*(3), 349–362. **https://doi.org/10.1111/j.1360-0443.1993.tb00822.x**.

Sommers, I., & Baskin, D. (2006). Methamphetamine use and violence. *Journal of Drug Issues*, *36*(1), 77–96.

Steinkopf, B. L., Hakala, K. A., & Van Hasselt, V. B. (2015). Motivational interviewing: Improving the delivery of psychological services to law enforcement. *Professional Psychology: Research and Practice*, *46*(5), 348–354. **https://doi.org/10.1037/pro0000042**.

Stevens, A., Hughes, C. E., Hulme, S., & Cassidy, R. (2019). Depenalization, diversion and decriminalization: A realist review and programme theory of alternatives to criminalization for simple drug possession. *European Journal of Criminology*, 147737081988751. **https://doi.org/10.1177/1477370819887514**.

Tackling Methamphetamine: Progress Report. (2015). Department of the Prime Minister and Cabinet.

Te Ara Oranga Evaluation Working Group. (2018). *Te Ara Oranga Methamphetamine Demand Reduction Programme: First Progress Evaluation Report*. Ministry of Health/Northland District Health Board.

Walton, D. (2021). *Te Manawa Titi—Whāngaia Ngā Pā Harakeke: Auckland District: 2019-2020* (No. 3; p. 23). Wellington: Crow's Nest Research Ltd.

Walton, D., & Brooks, R. (2019). *Whāngaia Ngā Pā Harakeke Pilot: Counties Manukau District Outcomes Evaluation* (pp. 1–37). New Zealand Police.

Walton, D., & Brooks, R. (2020). *Technical Report Whāngaia Ngā Pā Harakeke Pilot Eastern (Tairāwhiti) District Outcomes Evaluation*. Safer Whanau, NZ Police.

Walton, D., & Martin, S. (2020). *Te Ara Oranga: The Path to Wellbeing: The Development and implementation of the Methamphetamine Harm Reduction Programme in Northland: Wellington* (No. 1; p. 99). Crow's Nest Research Ltd.

Walton, D., & Martin, S. (2021). *Te Ara Oranga: The Path to Wellbeing The Development and Implementation of the Methamphetamine Harm Reduction Programme in Northland Process Evaluation Report* (No. 1; The Evaluation of Te Ara Oranga, p. 99). Ministry of Health/ Northland District Health Board.

Walton, D., Martin, S., & Li, J. (2019). Iwi community justice panels reduce harm from re-offending. *Kōtuitui: New Zealand Journal of Social Sciences Online*, 1–18. **https://doi.org/10.1080/1177083X.2019.1642921**.

Weisheit, R. (2008). *Making Methamphetamine*. *23*, 31.

Whiria Te Muka. (2020). *He Maturanga Hauhake. Meth use as a trigger for whānau harm in Te Hiku.* Te Hiku Iwi Development Trust, Kaitāia.

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. **https://doi.org/10.1016/j.drugpo.2018.09.007**.

Yudko, E., Lozhkina, O., & Fouts, A. (2007). A comprehensive review of the psychometric properties of the Drug Abuse Screening Test. *Journal of Substance Abuse Treatment*, *32*(2), 189–198. **https://doi.org/10.1016/j.jsat.2006.08.002**.

Zhang v R [2019] NZCA 507: New sentencing guidelines for methamphetamine-related offending. (2019, November 13). New Zealand Law Society | Te Kāhui Ture o Aotearoa. **https://www.lawsociety.org.nz/news/legal-news/zhang-v-r-2019-nzca-507-new-sentencing-guidelines-for-methamphetamine-related-offending/**.

Sue's journey

Sue (NZ European female in her mid-50s) has two sons and three granddaughters.

Sue completed the Five Step programme with Salvation Army Bridge because one of her son's is a methamphetamine addict.

Over her lifetime she has had many contacts with police due to domestic violence perpetrated against her by her alcoholic husband.

Background

Sues' son, Josh, has been using methamphetamine for 16 years, he is now 31. Over this time, he became 'encased' in a gang. At one point he introduced his brother to using and selling methamphetamine (his brother no longer uses or sells but he did for long enough to lose his house). Josh started using when he was 15 years old. Since this time, he has fathered three daughters to two different mothers. Sue now has full custody and day-to-day care of two of these children until they are 18 years old. The road to custody was new to Sue. The court case cost her $70, 000. Sue had phoned Oranga Tamariki two times about the children in Josh's care, she did not leave her name (because he was a "angry methamphetamine addict" and she was "afraid"). Oranga Tamariki did investigate these calls. They scoped the home both times and some other things Sue is not privy to. The girls school also contacted the department. The girls were not attending school as expected. When they did, they were dirty, tired, and they had no lunch. One of the girls was particularly malnourished.

> Josh would often state that the girls were his daughters therefore he could do what he wanted with them; he could treat them how he wanted. Josh would have them running around in cars all night when they should be tucked up in their warm little beds. I go to the house and there are drug people there. The girls are hiding in their rooms too scared to come out. Sometimes they would wake up in the night and there would be no people there, no adults. This little five-year-old with her little sister, terrified. He would take them to do drug deals. There were knives and guns in the car.

Sue had regularly been giving Josh money as he would often approach her saying he had no food for his daughters. Every time Sue would give it. After some years she realized that much of that money was being used to buy methamphetamine. After this she would supply actual groceries instead.

The third time Sue called Oranga Tamariki it was in response to a text message from Josh stating he owed thousands for meth and the dealers had threatened to shoot him. Sue explained to him that she did not have the money, but his daughters needed to be found and taken to her. This time Sue gave her name as they would not act without it. As a response to the texts, along with other evidence, she was advised to get a lawyer for an urgent COCA (Care of Children Act) order. Once the order was confirmed the Judge oversaw the case that afternoon. Soon after the police informed Sue that she and the children would have to go into hiding because of the response they got when they approached her son. Sue had to organise that. Josh was not arrested. Instead, he approached family and family friends, threatening everyone, "you better tell mum she gets the girls back to me before 9 tomorrow morning or else she is dead". Josh was then arrested for 'threats to kill.' He spent a couple of weeks in jail, was released and told to do a few courses and, according to Sue, that was it.

Sue took out a protection order and she was given a police panic button which she carried for three years. After Sue and the girls had been back for two weeks her other son called to say that she had to leave town again because of further threats to her life. Oranga Tamariki gave her some vouchers and they went into hiding again. Once Oranga Tamariki knew the girls were in Sue's custody she never heard from them again.

> … no aftercare. No follow-up. They said they would support me in getting guardianship, but I never saw their support. I never saw them write a report to the court about their findings or any support from them for me.

Before the custody issues arose, Sue had taken her son into the emergency department at Whangarei hospital because he had over-dosed. Here they met a woman who administered SBIRT (Screening, Brief Intervention, and Referral to Treatment). She also spoke with both Josh and Sue.

> Just the way she was so loving but just so straight up. The way she spoke to Josh was empowering. She was empowering me while she was speaking to him. She told him that his addiction will only end in one of three ways, death, rehab, or prison. She stressed that the outcome would be his choice. Then she took me aside. She asked how I was and how this was impacting on my life. She asked where I was getting support and information from. Then she suggested the five-step programme, run by the Salvation Army. She gave me the details Sue explains that Josh was open to the idea of residential rehabilitation, but there were no spaces available. They were given an estimated wait time of six to nine months. When Josh was arrested the police recommended that he go into rehab, but none would take him from jail where he was been remanded. He had nowhere to be bailed to because his family did not feel safe having him in their homes. Eventually though, one police officer recommended a rehabilitation centre in Auckland, there a space was found. By this time Josh had spent three months in prison, he could not be bailed to family because,
>
> You have scared your family. You have written your family off because you have ripped us off. You have taken all our money. You have taken everything from us; our soul, our safety, everything you have taken from us.

Having custody of two of her Grandchildren exposed Sue to a world she was unfamiliar with. She had a responsibility to ensure that the children had access to their maternal whānau. They, along with the children's mother, were gang members. But, as Sue stated, she would put on her 'big girl pants' and attend visitation so the girls could see them. She would sit through the drinking and the swearing and the smoking because the girls loved the cuddles.

The eldest granddaughter still has nightmares about waking up to find no one home. In Sues' opinion her granddaughter will need lifelong counselling. These things, Sue feels, are what happens when you take on the children of meth addicted parents. She has also had to give up her work to look after her granddaughters. She finds it difficult to pay the mortgage now. She also had to give up her medical insurance because she could not afford it. When Work and Income was approached, they could not do anything to help, and Sue felt that they simply did not care.

Sue spoke further about her son's use and the impact it had on her as a mother.

> And the poor mother is trying to sleep at night knowing that her son is sleeping on the street or under a bridge or somewhere with a gun pointing at him because he has taken all the meth he should have sold. It is like night after night, you are going to wake up tomorrow morning and your son is going to be dead …

Sue completed the five-step program with the Salvation Army. Here she was empowered to say 'no' to her son. She now feels that she has permission to put hers and her granddaughters needs first. Now she feels 'brave.' During the course Sue was also educated about the effect drugs have on people physically, emotionally, and psychologically. She was also reassured that she is not a failure as a mother. These lessons Sue now wants to be able to share with other family/whānau who are living with meth addicted loved ones.

> The main thing the program gave me was power to be OK with my decisions. Power to be OK talking about it and not feeling like a victim and that I had done something wrong and as a parent I was bad. All those things that go through your mind … It is like it is OK to feel like I feel. I now understand that my first priority is to protect myself and the girls … I have decided, thanks to the program, that I will not be emotionally involved with my son until he can prove to me, he has been clean for two years.

Sue now believes that a programme such as The Five Steps needs to be developed especially for the children who come from meth addicted families/whānau in the hope that it will not only help with trauma but also to prevent the cycle of drug misuse from continuing. She argues that the child should be involved in such a program at different stages of development: 5, 9, 12, and 15 years old with each block being adapted to the developmental phase the child is in.

Sue raised another point. At no time during Josh's' time in the rehabilitation program was con-joint family therapy available. She believes this is necessary to help rebuild positive relationships in a safe environment.

What could have changed?

Sue was known to police as a victim/survivor of family violence. During one of the last call outs to deal with her husband police recommended that a family meeting be held, with both her sons mediating, to discuss addiction counselling for her husband. If this had occurred Sue may have had the opportunity to speak with the counsellor about her sons' methamphetamine addiction, the role of drug abuse in her family. She might have been supported to help others, and her son may have also been exposed to education regarding drug misuse.

Cost/Benefit Analysis

Executive summary

1. The known costs associated with implementing Te Ara Oranga are considered along with the addition of community and whānau in-kind support, which combine to ensure the wellbeing benefits are realised in those referred to the programme.

2. Five classes of benefits are considered:
   (1) Health costs saved
   (2) Disability Adjusted Life Years offset
   (3) Reduced harm from criminal activity
   (4) Employment gained
   (5) Reduction in the market for organised crime.

3. The estimates of these classes of benefits rely heavily on the NZ Drug Harm Index (McFadden et al., 2016) that sets values for the costs associated with the ongoing use of methamphetamine.

4. The amount of cost offset by Te Ara Oranga is conservatively estimated using the case-control comparison of the outcomes evaluation, and data on the actual costs that individuals in Te Ara Oranga have to the health system and to the Justice sector.

5. These benefits are discounted over multiple years (2 years or 4 years) with a ±20% variation being applied for sensitivity analysis.

6. Benefits are realised across the Programme and pro-rated to persons referred, recognising addiction treatments have a low success rate but high yield in benefits when successful. The additional cost of Te Ara Oranga is estimated at between $2,668–$3,474 per person referred.

7. The estimated range of benefits of Te Ara Oranga are $8,121–$24,956 per person referred.

8. The range of cost/benefit ratios is calculated to be 1:3.04 – 1:7.14.

9. There is a return of between $3.04–$7.14 for each dollar invested into the Programme.

The objective of this section

This is the third section in a series of evaluations of Te Ara Oranga, the Northland methamphetamine reduction programme implemented by Northland DHB (NDHB) and NZ Police.

The process evaluation outlines what Te Ara Oranga is and how it operates (pp. 19–121). The outcomes evaluation (previous section, pp 122–156) is a comprehensive analytical evaluation of outcomes. It utilises administrative data from health and police to track the progress of those who get a referral to Te Ara Oranga and compare them to those that do not.

The question of whether there is a benefit from Te Ara Oranga is almost entirely addressed within the previous section. That evaluation found that Te Ara Oranga had a measurable effect on the rates of offending of those that enter the Programme, reducing the expected rate of offending by 34%. This seemingly straightforward conclusion tends to disguise the complex analysis required to come up with that statistic. Nevertheless, that 34% is an important benchmark – because the size of the effect, where it is concentrated, and how it endures is used as the standard by which other intangible benefits are estimated.

This cost benefit analysis (CBA) addresses a simple question: is the amount of impact that Te Ara Oranga demonstrates sufficient to bring about a positive return on the investment to deliver the programme?

An important element of any cost benefit analysis (CBA) is the counterfactual: a benefit can only be understood by contrast to a usual practice. That there is a usual practice is an especially important consideration in reading this material as it can be easily misunderstood. The counterfactual is not ‘no treatment’ for methamphetamine use, or worse, police always pursing prosecution for all identified users of methamphetamine. One way to conceptualise the baseline or counterfactual is to think of it as the effect of significant and costly activity to treat users of methamphetamine in areas of New Zealand where Te Ara Oranga does not operate.

Method

Constraints of this CBA (cost benefit analysis)

This CBA uses the data and benefits applied by the Northland region, including the Northland District Health Board (NDHB), Northland Police district, non-government service providers (such as the Salvation Army and Odyssey House), and the communities that contribute in-kind support.

It bears noting that the Northland region has unique characteristics. For example, the region comprises only about 4% of the population and 2% of the nation's GDP (at $7,887 million or $49,000 per capita). There is roughly twice the proportion of Māori in Northland (around 33%) as the national average (15.1%).

Demographic and economic features are only part of Northland's uniqueness. As explained in the first report (Process Evaluation), why Te Ara Oranga in Northland emerged in the form it did and why it was a success, is in no small part due to Northlanders themselves – especially their enthusiasm to succeed and their willingness to enter the kinds of multi-stakeholder relationships that here resulted in a leading-edge, award-winning programme.

These specific characteristics mean that extending the findings of this CBA to the whole of the country need careful thought. This is also true for Te Ara Oranga as a whole: extending a finding from a trial programme applying to just 4% of the population out to the nation's whole population – although reasonable in many circumstances – here requires a framework of thinking that acknowledges the special characteristics of Northland.

Notwithstanding these 'constraints', it is important to gain some quantitative *sense* of how investment might apply elsewhere. And in the absence of better base data, this CBA is likely to be the best-informed position on the likely return from such an investment.

Methodological approach

The more robust the methodological approach is, the better the environment becomes for delivering effective decision-making and policy, within the practical constraints we under which we operate. So, this CBA follows the advice and guidance of the *New Zealand Treasury* (*Guide to Social Cost Benefit Analysis*, 2015). We recognise its practical advice that 'a rough CBA is better than no CBA'. This is perfectly reasonable given there is much we still do not know and that we are dealing with on-the-ground realities that defy easy numerical analysis. For example, the concepts of wellbeing, manaakitanga, care, aftercare, and community support are difficult to define, especially in monetary terms. Added to this is another reality: the science supporting our understanding of methamphetamine addiction, drug-career trajectories, criminogenic need, acquisitive crime, life-stage offending, and crime harm are 'thin' when it comes to the details desperately required in a policy context. For example, researchers simply do not know the outcomes for 'casual' users of methamphetamine. We do not know how long, if ever, it will take for a casual user to move to

becoming a dependent user. Much depends on the individual and the science supporting this understanding is underdeveloped, especially in New Zealand.

The estimated role of methamphetamine as a driver of crime is based on an analysis of the volume of crime committed by those identified as meth users, compared to the volume of crime related to age, gender, location, and previous convictions. In the 18–24 months following a person's identification as a meth user, that person's crime rate was 4–6 times higher than for people matched to the other factors.

The NZ Drug Harm Index struggles to derive a value for acquisitive crimes; it uses a process based on the assumption that 30% of acquisitive crime is drug-dependent-related. The resultant estimate is a value of $24,400 per person, or $32.6 million per annum for amphetamine-type stimulants. However, this estimate is aligned to the street value of meth, and this somewhat over-simplifies reality. For example, from the Drug Harm Index it is possible to derive that dependent users consume 131 kg per annum (n = 1392) or 94 grams (about 1.8 grams per week). The calculated value of that dependent use (@$400 per gram) is approximately $700–$800 per week. However, this finding fails to accommodate one key, well-recognised feature of the multi-level marketing of methamphetamine: that is, higher-level users are rewarded with a lower price by the recruitment of new users.

Key statistics

Prevalence of methamphetamine use

The New Zealand Health Survey reports on key statistics as part of a module (comprising an in-depth series of questions particular to a topic), last completed in 2015/16. Although these are somewhat dated, they do compare to 2011/12 and show no overall increase in the prevalence of use.

1. In 2015/16, 1.1% of adults (95% CI 0.9–1.5) used amphetamines in the past year. This equates to about 34,000 New Zealanders.
2. In 2015/16, the mean age of past-year amphetamine users was 31 years (95% CI: 29–33). The mean age of past year amphetamine users has not changed significantly since 2011/12.

New Zealand's prevalence rate is significantly higher than the global prevalence rate (0.6–0.8%).

The prevalence statistics do not distinguish moderate, causal, and heavy users of methamphetamine. This is important in our concerns as we find strong evidence that social harms (either contact with the health system and with justice) is a function of 'perception' of harm derived from levels of use.

The value of statistical life

3. The updated value of statistical life (VOSL) is $4.56 million per fatality at June 2020 prices. This is the latest statistic and is used by Treasury in the December 2020 updated CBAX input costs.

New Zealand population

4. New Zealand's resident population provisionally reached 5 million in March 2020 according to Stats NZ. This estimate will be used throughout this report.

Casual vs dependent users[17]

5. The portion of 'dependent users' to 'casual users' is estimated in the Drug Harm Index to be 5.61% of all methamphetamine users. The data is derived from the in-depth module of the 2011/12 Health Survey.

6. The portion of dependent users in the sample from Te Ara Oranga is an estimate based on their observed contact with the health system. All health referrals are regarded as dependent users because they incur the same cost to the health sector as known dependent users. Police referrals are approximately 50% dependent, 25% 'heavy users' and 25% users with some need for treatment (i.e., not genuinely *casual* but not *dependent* either).

7. For simplicity, and accepting that this key statistic is estimated, we can assume that Te Ara Oranga deals with 65% dependent users and 35% casual users (i.e., of n = 767, 268 are *Casual*, 499 are *Dependent)*.

Number of users and dependent users

8. The overall number of methamphetamine users is 55,000 persons, derived from the National Health survey 2015/16 in-depth module (i.e., 1.1% of 5 million). Dependent users range between a low and high estimate (n = 1481–3088). The lower estimate is a population-adjusted estimate from the Drug Harm Index value of 1392 in 2016. The higher estimate is a conversion based on the expected portion of dependent users derived from accurate prevalence statistics (i.e., those from the 2015/16 Health Survey).

Discount rate

9. A discount of rate of 6% is applied for all benefits with multi-year impacts. Treasury have recently reduced the discount rate to 5% except for some projects. It is prudent to maintain a conservative estimate when dealing with such a complex issue as the social harms of methamphetamine use.

[17] Report 1 deals with the concept of addiction and introduces Di Franza Stages that accurately define the concept of a dependent user. The correlation between physiological changes in brain structures and a self-reported level stage of addiction is extensively considered, along with rejecting the concept of low-level use being harmless.

Key demographics

10. The average age of a user is calculated at 36.5 years. The average life expectancy is rounded to 80 years. Healthy Adjusted Life Expectancy (HALE) for males in New Zealand is 68.19 years and for females 70.48 years. (Murray et al., 2015). Using these estimates would increase the benefits of offsetting Years of Life with disability through drug-use.

Defining the counterfactual

Sometimes insufficient recognition is given to the fact that the NDHB and the Police, along with its partner agencies (Ngāti Hine Trust, Salvation Army and Odyssey House) and others, have always provided care and support to those suffering from addiction. The Detox Unit in Dargaville Hospital preceded the arrival of Te Ara Oranga. Police have always had a drug squad and a dedicated resource addressing organised crime. These interventions help set the baseline for level of service.

The baseline service level is that received *without* Te Ara Oranga. The process evaluation in section one describes the details of what Te Ara Oranga does, how it operates, and its unique philosophy. The outcomes evaluation relies on a natural experiment that was developed in the introduction of Te Ara Oranga during October 2017 to October 2019. Not all people who were identified as methamphetamine users and who were available for referral, were referred. Tracking the differences in the outcomes of these people in subsequent years forms the basis of a comparison that allows the effect of Te Ara Oranga to be quantified and then costed.

The counterfactual, therefore, are those who do not get Te Ara Oranga, but instead rely on the traditional level of service. For clarity, and importantly, this is *not* 'no service'. It is better to think of it as the level of service a person might expect from other regions in New Zealand where Te Ara Oranga does not operate.

Drug harms (personal harm: health)

Drug harms are comprehensively listed in the New Zealand Drug Harm Index, and this report relies on that list. The first harm considered is 'premature death' as all other indicators in the Drug Harm Index are linked to this. To obtain an estimate, the Drug Harm Index recognises the United Nations Office on Drugs and Crime (UNODC) reporting requirements for New Zealand. These statistics are not updated in the most recent World Drug Report (2020). However, the Drug Harm Index estimates 32 deaths per annum from 'amphetamine-type stimulants'. The estimates can be adjusted to the New Zealand population estimates for 2020 and the December 2020 (CBAX) updated value of statistical life.

Table 9 outlines the values updated to 2020 values based on adjustments to the estimates of the New Zealand Drug Harm Index. The method used in the Drug Harm Index relies on overseas research that determines the Disability Adjusted Life Years to be proportionate to the estimated rate of early deaths associated with addiction to methamphetamine.

Table 9: Adjusted estimates of the Drug Harm Index

Amphetamine-type stimulants	Deaths per annum	Cost of premature death ($m)	Loss of quality of life ($m)	Estimated personal harm cost ($m)	Average harm per dependent user ($)
From NZ Drug Harm Index (2016)	32[1]	$126.3	$130.1[3]	$256.4	$184,200
Updated to (2020)	34	$155.0[2]	$159.7	$314.7	$211,485[4]

1. 32 deaths in 2016 were a rate of 1 person per 150,000. New Zealand's population has grown to 5m (+300K) so an additional two deaths per annum is expected if the prevalence rate remains unchanged.
2. 34 deaths times the VOSL in 2020 figures.
3. The NZ Drug Harm index used a 1.03 multiplier for the harm of 'DALYs' (Disability Adjusted Life Years).
4. Based on a population growth the estimated number of dependent users is 1,481.

The calculations need to account for changes to the Value of Statistical Life (VOSL) at $4.56 million per fatality, a multiplier of 1.03 used in the Drug Harm Index and population growth.

Importantly, the updated estimate of $211,000 *per dependent user* leaves the social harms (or benefits) of casual use unaccounted for. We know from the Drug Harm Index there is likely to be around 18 'causal users' for every dependent user. Social users are likely to suffer and cause (through offending) social harms. From the perspective of Te Ara Oranga, the ethos of the effort is to get casual users into treatment to disrupt the conversion of casual use to dependent use. This ethos sets this programme apart from other initiatives, especially those used overseas.

The burden of methamphetamine use on a casual user

The outcomes evaluation (previous section of this report) offers a comparison between propensity-matched controls based on age, gender, location, ethnicity, and number of previous convictions, to those who are identified as users of methamphetamine and refuse a referral (n = 110). This group of refusers can be taken as a proxy for 'casual users' because they have significantly lower rates of post-identification contact with Justice or Health. The inference previously drawn is that they self-exempt from the referral based on their perceived level of harm experienced by their use. This is borne out in the evidence that shows they commit far fewer crimes and have far fewer contacts with the health sector.

However, compared to the matched controls (n = 271) they have three-times the average level of victimisations before referral (refused referral meth users: m = 128.4 NZCHI, matched controls = 40.6 NZCHI), in fact the highest among any group separated for analysis in the outcomes report. Thus, the idea that casual users incur no obvious 'disability' (as in DALYs) – better expressed as a 'lifelong wellbeing deficit' – is likely incorrect. Rather, the evidence suggests that involvement in the criminal act of taking methamphetamine opens users (and especially casual users) to victimisation at much higher rates than would be otherwise expected.

The mechanisms associated with this are presented in first part of this report which outlines the multi-level business model for the sale and distribution of methamphetamine. However, monetarising this effect requires consideration of the conversion of the measure of harm by the NZ Crime Harm Index and the CBAX model that offers values for associated crime types.

Drug harms (community)

The Drug Harm Index estimates a value of harm associated with acquisitive crime of $23,400 per 'dependent user' (5.61% of all users). The Index is explicit in excluding casual users from the harm estimation. It is also somewhat unhelpful in that the acquisitive crimes are not well defined, and the rates are estimated from overseas studies- which contain a wide range of estimates. The authors of the Drug Harm Index themselves recommend caution, '... to observe that under two separate measures of drug harm [meaning acquisitive crime] the relative contribution from property crime can differ 10-fold' (p 24).

The outcomes evaluation enables a better understanding of the crime-types committed by those that did not get Te Ara Oranga, the counterfactual in this analysis. Table 10 below outlines the calculations associated with those who are referred to Te Ara Oranga (n = 767) and those that receive the usual treatment (n = 601). Their subsequent offending is from the date of the referral to the date of data extraction.

There are slight differences in the duration of opportunity to offend with of 669 days (1.82 years) for those who are referred and slightly shorter for those with the usual treatment at 629 days (1.73 years). Also, some do not offend. The group drawn from Te Ara Oranga have 58% with no subsequent offending, slightly higher than the control group (56%). The rates of post-referral offending are similar but types of offending change for those drawn from Te Ara Oranga. These differences are fully outlined in the Outcomes Evaluation under a modelling of crime harm that considers other differences between the groups.

Here the subsequent offending is grouped by the Treasury's CBAX cost inputs. These are linked to the Police codes associated with post-referral offending and given costs as per the updated 2020 CBAX model.

Table 10: The estimated CBAX values of the crime harm offset by being referred to Te Ara Oranga

	Control n = 601	TAO n = 767	CBAX value	CBAX calculated harm		Difference	Benefit of TAO
				Control	TAO		
Offend post-referral	n = 263	n = 323					
Minor traffic	89	164	N/A[1]	$55,817	$101,411		
Property damage	31	32	$4,796	$148,676	$153,472		
Drug offences	22	29	$12,762	$280,764	$370,098		
Burglary	57	81	$15,588	$888,516	$1,262,628		
Theft	138	150	$2,870	$396,060	$430,500		
Fraud	20	9	$36,762	$735,240	$330,858		
Robbery	6	8	$51,003	$306,018	$408,024		
Serious traffic	2		$68,909	$137,818	$0		
Other	265	242	$4,964	$1,315,460	$1,201,288		
			Total harm	**$4,264,369**	**$4,258,279**		
	Average harm per person offending			$16,214.33	$13,183.53	$3,030.80	-19%
	Average harm per person treated			$7,095.46	$5,551.86	$1,543.60	-22%
	Per-annum harm per person treated			$4,113.31	$3,052.15	$1,061.16	$813,906.83
	Effect duration calculated at 4 years (n = 767)					$3,524.99[2]	$2,703,673.85[2]

1 See the calculations in Appendix 1.

2. A 6% discount rate is applied.

The benefit calculation is achieved by considering the lower rate of offending for the Te Ara Oranga (TAO) group in the 1 to 2 years of follow-up, by contrasting that rate to that of the control group. But it is worth repeating, this is not a group that gets no treatment at all; such a group of untreated meth users may have rates of offending and costs at least 5 to 10 times higher than those observed to be progressing though treatment. Also, not everyone in treatment neatly falls within the definition of 'dependent user' used by the Drug Harm Index.

Notwithstanding the definitional classifications, Table 10 shows that the aggregated value of the crime committed by Te Ara Oranga referrals and the control is nearly $4.25m for each group for the 18–24 months of follow up period (around $8.5m in total). However, all other things being equal, the sample drawn from Te Ara Oranga are more than 20% larger than the control group and so should be expected to have a much larger aggregation of offending. Also, the largest deviation from expected rates is for crime types associated with fraud, not so for other types of acquisitive crime.

When the per-person cost of crime is calculated Te Ara Oranga, referrals reduce the expected cost of crime by approximately $1000 per person, per year (Table 10 above, the per-person treated effect). This effect is observed over a 6-month to 2.5-year timeframe and can be expected to endure beyond the treatment (the DALYs calculated above are for lifetimes). However, an upper estimate is for an effect duration is just 4 years. This upper-bound estimate is a conservative estimate based on a recognition that the long-term effects of Te Ara Oranga are not known. The estimate can be challenged by further research, but it is likely only to show a more enduring effect than 4 years. Four years is used as the upper limit for the average effect of Te Ara Oranga in the sensitivity analysis below.

Two years is used as the lower limit (accepting that an overall effect is observed over this period). Again, two years is used as a lower limit in the sensitivity analysis.

An alternative method of calculation considers the harm reduction estimated from the NZCHI that indexes all crime types to Equivalised Prison Days (EPDs). The cost of a prison day for remand and sentenced prisoners has been provided by the Ministry of Justice They are reflected in the Annual Report: Remand $285/day, Sentenced $385/day.

The remand population is 37% of the prison population. A weighted average of the portion on remand (37%) and those sentenced to imprisonment (63%) produces an estimated cost of an NZCHI EPD at $347.10 per day. There are 18,802.73 EPDs committed by the control group over 629 days (1.725 years). The relative harms of Te Ara Oranga are an estimated as a 34% reduction on the control. Thus, $2,218,985 in total observed, or $1,202,468 per annum.

The two methods converge within a reasonable margin of error for work in this domain, and so the offset of crime is calculated as a range of values between $0.8m and $1.2m per annum.

The costs of Te Ara Oranga

The cost of Te Ara Oranga to Health

The NDHB record each point of contact within a treatment programme for each individual and costs these according to a 14-point classification (see Table 11). These costs have been aggregated for each person progressing through Te Ara Oranga and for those that do not. They are also further divided (in Table 12 below) by the referral source. This further division is needed as analysis makes it clear that Health referrals and Police referrals are qualitatively different, with the latter tapping into the pool of ‘casual’ users. Differences in the group are observed from analysis of the ‘refused referral group’ and these are outlined in detail in Report 2.

Table 11: Treatment type classifications and their associated costs in the NDHB

Treatment location	Treatment cost
Respite	$220 per night
NGO Group	$25 per client per hour
DHB Group	$50 per client per hour
NGO Med Run	$12.50 per client per event
Detox	$711 per bed day
Non-Psych Ward	$1,493 per day
ED	$1,452 per attendance
DHB Crisis	$260 per hour
Subacute	$615 per bed day
NGO Res	$225 per bed day
DHB Med Run	$17 per client per event
IPU	$862 per bed day
NGO Contact	$142 per hour
DHB Contact	$216 per hour

Table 12: The number of Police calls for service, the number of contacts with Health before and after a referral to Te Ara Oranga (TAO) and associated indexed health costs for points of contact with Health after referral to TAO by referral source

	Referred to TAO	n	Accumulated post-referral health cost	Number of health contacts before referral	Number of health contacts after referral	Number of Police contacts before referral	Number of Police contacts after referral
NDHB	Yes	218	m = $40,481 sd = $83,297	m = 114 sd = 232	m = 9.8 sd = 44.9	m = 8.7 sd = 9	m = 3 sd = 3.8
	No	245	m = $40,697 sd = $98,843	m = 138 sd =300	m = 31.5 sd = 121	m = 11.1 sd = 12	m = 3.5 sd = 4.4
Police	Yes	255	m = $24,265 sd = $56,339	m = 64.3 sd = 163	m = 13.3 sd = 84	m = 12.8 sd = 13	m = 4.1 sd = 4.8
	No	274	m = $13,435 sd =$89,367	m = 17.5 sd = 100	m = 2.2 sd = 9	m = 15.8 sd = 15	m = 4.8 sd = 5.3
Refused referral (from Police)	Yes	28	m = $5,266 sd = $22,076	m = 10.4 sd = 41	m = 4.4 sd = 17	m = 11.8 sd = 15	m = 4.5 sd = 5.6
	No	82	m = $3,330 sd = $18,264	m = 7.1 sd = 31	m = 0 sd = .3	m = 12.9 sd = 14	m = 3.4 sd = 4.7

The mean cost on the Health system for a person referred to Te Ara Oranga is approximately $40,000 when the referral is from Health, $24,000 from Police, but only $3000 for the refusers (or $5,000 when they refuse the referral from Police but enter the programme through a different channel).[18] There is no difference in the health costs between Te Ara Oranga and a usual standard of service except for those entering as 'casuals' where the health costs are almost $10,000 more per person.

Health spends a $1m allocation per annum on the programme and so a straightforward estimate of the cost per participant is to recognise a conservative estimate of n = 800 referrals per annum.

The cost of Te Ara Oranga to Police

On the one hand, the cost to Police is as straightforward as the cost to Health. Police spend $1m per annum on delivering services that bring about referrals into Te Ara Oranga. The meth harm team is 7 FTEs, comprising a sergeant, two detective constables and four constables. They do the work that makes Te Ara Oranga possible. However, they also do police work, and this makes the situation somewhat complicated for the purpose of our analysis. As meth harm team members are also part of the sworn officer compliment, their work also helps bring about more general benefits of policing in drug enforcement (such as undertaking intelligence-led policing, drug seizures, gun seizures, operations, and disruption of organised crime). So, it is exceedingly difficult to separate the job of policing from the operation of Te Ara Oranga. Thus, for our purposes, we simply align the total financial allocation to the task of bringing about only the benefits as outlined above.

This limitation means that some benefits are not accounted for in this analysis. For example, there is undoubtedly a benefit to be gained by the introduction of baseline funding into Te Ara Oranga (such as the many Police who administer Te Ara Oranga outside the Meth Harm Team: the executive sponsor, the policy group, National Organised Crime Group (NOCG), District Prevention, District Intelligence, and so on). The same could be said for Health. However, even by only considering the benefits to those described above, we can nonetheless still acknowledge the additional intangible benefits, while recognising that some are offset by the unquantified costs associated with the operation crossing over with baseline activity.

The cost to the community

The community rallied together to attend hui, provide input, monitor the programme, and support those moving through it. To account for community and whānau involvement the model uses four hours per person referred to the programme. Some of this time is manifested in attendance at family education sessions, the Five Steps Programme, or the like. But most effort usually remains hidden. This 'hidden' time and effort consists of things like encouraging people to get help, driving them to appointments and supporting them in many ways on their path to recovery. Less hidden were actual in-kind contributions: to establish the website, share stories, erect Methfree billboards, write materials, design the logo, and produce the waiata and songs. These efforts are modestly

[18] Note: this cost category has low numbers, i.e., n = 28.

represented by a per person 4-hour contribution – totalling 1.5 FTE per year based on volunteering – a value then aligned to $27 per hour in the CBAX model. The true value of this time would require an active effort to record the time commitment, and this has not been done. But what we do know is that the actual cost to the community is most likely very much more than these modest figures would suggest.

Cost/benefit analysis

Table 13 presents the cost/benefit analysis. It recognises the values of the costs associated with Health, working estimates derived from the CBAX and Drug Harm Index, or as they have been outlined above. The values are monetised to the per-person benefit. Some benefits are linked to the successful recovery of an individual, but most represent the benefit of the referral. Thus, the benefit for a successful recovery from addiction (drug-dependent addiction) – where a person goes on to commit no crime, gets a job, and 're-joins' society – is an exceptionally large value (more than $500,000). However, for every major success (i.e., complete ongoing abstinence from all drugs) there are many more people who have some partial success or no success at all. The wide range of 'success' is demonstrated by the case/control comparison that compares the post-referral offending. Some commit no crime, others reduce their expected offending, and some do not. The overall effect is a 34% reduction in acquisitive crime. The benefits represented in Table 10 might be considered in the same way, they are an effort to average the effect over the referrals.

Table 13: The cost/benefit analysis

Benefits	Measure	Estimate calculation	Estimate per person/per annum in Te Ara Oranga	Lower bound Estimate less 20% (Effect lasts 2 years) Lowest estimate	Upper bound Estimate plus 20% (Effect lasts 4 years) Highest estimate
TAO offsets Disability Adjusted Life Years for meth use	DALYs adjusted from the NZ Drug Harm Index divided by years to mean life expectancy	$211,485 per person / 43.5 years [average referral age to mean life expectancy][1]	$4,862 * 10% of persons referred $4,862 * 20% of persons referred	$754	$4,264
TAO prevents acquisitive and other types of criminal offending	Value of actual crimes by CBAX index or EPDs calculated at $347.10 per day	$0.8m–$1.2m	$1,043–$1,564 (dependent users only)	$2,064	$5,715
Some persons referred get jobs are more productive, pay tax etc. Represented in CBAX as Jobs & earnings: Not being unemployed	Not being unemployed (CBAX value) estimated from 4% of people progressing through TAO (30–31 people now employed who would not have been)	$2.1m	$68,728 (limited to 4% of all TAO referrals, n = 30–31 persons from 767 referred)	$4.45	$6.68
Organised crime has a smaller market to influence	Estimated in the Drug Harm Index	$2,718 per dependent user $90 per casual user	$1,800 per person weighted average	$2,794	$7893
Some people referred gain Improvements in mental health	CBAX value of $4,582 per improvement on a 1–4 scale	(Calculation included in DALYS)	Estimated above	Estimated above	Estimated above
Less likely to be a victim of crime	Identified in the outcomes evaluation	Estimated at 8 EPDs per person	$1,614	$2,505	$7,077
Some people referred have improvements in subjective wellbeing Having access to general help	CBAX value of $5,772 for each level of change on a 1–4 scale	(Calculation included in DALYS)	Estimated above	Estimated above	Estimated above
				Lower bound estimate	**Upper bound estimate**
Total benefits				$8,121 per person referred	$24,956 per person referred

Costs	Measure	Estimate calculation	Estimate per person/per annum in Te Ara Oranga	Lower bound Estimate less 20% (Cost incurred in 1 year) Lowest estimate	Upper bound Estimate plus 20% (Cost incurred 1 year) Highest estimate
Health costs	800 referrals per year at $1m	$1,428	$1,250	$1,250	$1,500
Police	Cost of the Meth Harm Team (7 FTEs: 4 constables, 2 detective constables and 1 sergeant)	$1,428	$1,250	$1,250	$1,500
Community contributions / in kind support	CBAX value of Volunteering of citizens' time $27per hour	4 hours per person @$27 per hour	$108	$168	$474
Cost total per referral				**$2,668**	**$3,474**
Cost/benefit ratio				**1:3.04**	**1:7.14**

1 Healthy Adjusted Life Expectancy for Males in NZ is 68.19 years and for Females 70.48 years. (Murray et al., 2015). Using these estimates would increase the benefits of offsetting Years of Life with disability through drug-use.

Table 13 presents a set of lower bound estimates based on the most conservative value of benefits, then further reduced by 20%. The most conservative model would result in the following outcomes: a 10% success rate (80 people), lasting for just 2 years (i.e., all relapse after 2 years), with only 31 people gaining employment from the programme (for just 2 years). These estimates do not include the value of acquisitive crime for casual users of the drug (who may have little or no criminality consequent to using methamphetamine). The benefit associated with crime reduction is estimated for everyone (causal and dependent: more accurately, ignoring the bifurcation) from the observed reduction in all referrals to Te Ara Oranga based on the case/control comparison that tracks actual criminality. The effects represented above can be conceptualised as the average effect for all referrals. There is a reasonable argument to be made that these effect-estimates should be set at the higher value of 34% across all classes of wellbeing, as there will be a strong correlation between successfully reducing criminality and the realisation of other benefits.

The upper bound estimate provides an optimistic view that the estimates undervalue the true benefits, and so have been increased by 20%. This means selecting the upper estimate of any range and using 4 years as the 'evaluation period'. So, the effect is considered for 4 years, and 20% of people (160) are deemed to be successfully drug free for 4 years. This model includes the 31 people who get employed (for 4 years).

The costs are straightforward calculations of the programme costs per referral and are expected to be expended in a single year. The resultant ratio of cost to benefits yields a range of 1:3.04–1:7.14. So, even when using the most conservative estimate, Te Ara Oranga yields a modest positive return on investment.

Conclusion

The additional cost of Te Ara Oranga is estimated at between $2,668–$3,474 per person referred. The benefits are realised across the programme and pro-rated to per-persons referred. The estimated per-person benefits range between $8,121–$24,956. The wide variation is based on a conservative lower bound estimate that takes the lower value of any estimated range, further reduces this by 20%, then considers the lower bound of any effect. In contrast, the upper bound takes the highest value of any estimate, increases this by 20% and allows the effect to last for four years. These estimates reflect an international context in the literature that recognises estimates may range 10-fold. This circumstance reflects our lack of research monitoring methamphetamine use, uptake, progression, and harms. Notwithstanding this caveat, a systematic approach to the available estimates – relying heavily on the Drug Harm Index – allows reasonable estimates to be determined.

The range of cost/benefit ratios is calculated to be 1:3.04–1:7.14. That is, there is a return of between $3.04 and $7.14 for each dollar invested into the programme.

Recommendations

1. Invest in an onboarding assessment that determines the usage status of each person referred to Te Ara Oranga, one that accurately determines if a person is a dependent user or a casual user.

2. Prioritise research that investigates the trajectory and progression through stages of dependency for methamphetamine use. This is especially important to understand because the lived experience facilitates self-exemption from receiving support and allows harm to the wellbeing of users and whānau.

Appendix A: Code conversion from NZ Police NIA codes to CBAX tool classification

Violent offences	Police code starts with “11”, CBAX value = $19,673
Sexual assaults	Police code starts with “2”, CBAX value = $159,257
Robbery	Police code starts with “13”, CBAX value = $51,003
Burglary	Police code starts with “41”, CBAX value = $15,588
Theft	Police code starts with “43”, CBAX value = $2,870
Property damage	Police code starts either “51”, “52”, CBAX value = $4,769
Fraud	Police code starts with “45”, CBAX value = $36,762
Drug offences	Police code starts with “59”, CBAX value = $12,762
Serious traffic	Police code starts with any letter & MAXCHI > 40, CBAX value = $68,909
Minor traffic	Police code starts with any letter & MAXCHI < 40, CBAX value = NZCHI @ $151.20 (minimum age per 8-hour day)
Event attendance	Police code second value is any letter (e.g., 5F, ID, etc), CBAX value = $202
Other	Police code not otherwise classified, CBAX value = $4,946
All others	All other Police codes, CBAX value = $4,974

The Reality of Breaking Bad
'You become *Their earn*'

Jarrod (43 years old Pakeha male), meth user and meth cook: a 25-year journey of drug use.

- Long-term poly-drug user, meth cook, gang-affiliated meth dealer.
- Multiple terms in prison, multiple convictions for shop lifting, theft, minor crime.
- Recently rehabilitated using support from *Te Ara Oranga*.

Early development and first use of drugs

Jarrod grew up in Northland. He came from a stable family environment and went to university to study chemistry, and biochemistry. He credits his family with his current sobriety as they have stuck with him on his entire journey, paying for private addiction treatment at Capri clinic in the early phase of his journey and maintaining a connection with him. He knows of many others who lose all connection to family/whānau and counts himself as lucky.

Like others, smoking cannabis seemed to connect Jarrod to the 'scene' into which he was drawn. It also drew him into the 'system' that would lead to a lifetime criminal career, prison, violence, addiction, and social harm:

> Like since I was like as young as 13, 14 I was smoking pot. I had my first blast of heroin at, like 17. I think I was 15 when I first tried meth. I tried it again when I was at uni and then I didn't have any for a year.

It was a conviction for possession of cannabis that drew Jarrod into a life of crime, he was 16 years old at the time.

> The first time I got busted for anything was for a joint … and straight away I was in the system. The next time the police came across us, they knew who I was already. I got busted again for something … and then they'd see me as … 'ah yeah, there's that little shit'. Just that first charge … even for one joint in my pocket.
>
> There were three of us when we were kids, we were walking to a party through town, that started the whole thing for me and drew me into the system…. like, took me here.

Jarrod was drawn into the underworld of dealing and cooking meth. His experience with that drug scene spans the introduction and growth of methamphetamine supply in New Zealand. He grew up without meth being widely present in Northland and though amphetamine use was around, and he was in the drug scene, at the time, he preferred other hard drugs such as heroin.

> There wasn't really pipes around either at the beginning, everyone was doing a light bulb cause you couldn't really get pipes. You could go to book markets to get them, but we had to drive up to Auckland to buy them …

In the early days, methamphetamine was not what we now know as P. It was a different form of amphetamine like substance that was snorted like cocaine:

> We used to cut it ….. two grams of meth with 26 grams of lactose and that would sell for two grand. People would drive up from halfway down the North Island and buy the whole lot.

The development of a 'P' market was deliberate:

> … then almost overnight everyone had a glass pipe. Everyone was on P and you couldn't give the cut stuff away anymore because they only buy the P after that. It changed the whole scene in New Zealand, probably in six months.

The year 2000 is when things changed in New Zealand.

> [Was this about 2000?] Yeah, like over the space of a few months, all of a sudden, everyone had a glass pipe and meth was everywhere. It happened quickly.

He has unique experience understanding the development and introduction of methamphetamine, with his connection to gangs and drug dealers be facilitated by his knowledge of chemistry. He can detail the changes in different methods of cooking meth in New Zealand, how ingredients were sourced, changes in methods that were reactions to changes in supplies of chemical and in the demand for 'pure' (P).

> Oh, that's like really easy chemistry. It's like first year chemistry. Yeah. It changed over time. It was red phosphorous at the beginning and would take like 12 hours to do one batch and then, hyper phos came out, which was like liquid and you could do it in like an hour.
>
> Yeah. So they changed everything too. That was probably about 2003, 2004. Everyone started using hype. The quality of the meth changed too, but there's a whole lot of factors that were going on there. Cause with the old way, you'd lose about a third of it. You say get about a 70% yield, 60–70% yield from a cook, but with the hype you get like a 95% yield. You don't lose hardly any either. It was massive.

After dropping out of university, Jarrod becomes well-connected to gangs in Northland, Auckland, and Hamilton. At this time, he had *not* been convicted and sentenced to any hard time in prison. Jarrod manufactured 'P' as a *'cook'* for the gangs, but he did not join a gang, he describes himself as being 'well looked after' by them though. Later he describes not wanting to cook for anyone and not wanting to be a part of this scene. In the early part of Jarrod's journey, he was a well-connected cook.

> I worked with three or four of them and they wouldn't let anybody meet me. They didn't even want any of their mates to know either. Cause it was like the money, like, I was like, their earn.
>
> I've had a couple of friends who got kidnapped and stuff like that. I was quite lucky in that way. Later on, a lot of people knew how to do it. Like these days, a lot of people know how to do it. It's not so much the knowledge, but there is still a skill in it.

Jarrod now knows more about addiction than most people having been in an out of detox, residential care, a methadone programme and so on but it's not a word he ever uses to describe the motivation to maintain this lifestyle he describes. During this time, he's a heavy user of multiple drugs, including methamphetamine. Interestingly, the cannabis, that led to his first conviction, falls away to become one of his least preferred drugs. Methamphetamine, on the other hand, is described as fun.

> A lot of my early using was, it was fun, like...I don't even regret it now. It was a lot of fun, early on. And that's why I got into it.
>
> Later once my life was really damaged and all my connections were damaged and all that, then it was more about, yeah, just numbing pain rather than any kind of enjoyment to or whatever. I was kidding myself thinking it was about enjoyment later, but it wasn't.

The continued cycle of cooking and using developed an understanding of methamphetamine from multiple perspectives. He sees why he used, why others use, and how others manipulate people to continue to use. He has a sophisticated, informed and educated perspective on meth use honed into honest statements that only those with lived experienced can convey:

> It's because one little rock is worth fucking more than if it was … more money than if it was a fucking diamond, it's worth more than diamonds and gold per weight. That's why people are running around shooting each other for it. Argh man things are happening. It's nothing to do with the substance or nothing about the substance, but it's because these guys drive around, and they end up with a mean car with piles of money in the glove box.

The same theme is brought out in his consideration of those who enter prison. He describes the newcomers as not connected people who had a chance to be turned around, especially if they could have been sent to counselling, given support, and kept away from prison. Once they are inside the marketing machinery that is driven by the culture of making money from meth sales drives the outcome:

> They've made a million connections to others, and they're off home. The thing is the whole culture and they're the teachers. … So they get out thinking, it's cool. They're going to go and get an ounce of crack off someone and start thinking they're going to be the man. They have a cool car with the mean chick beside them. This is what they get out thinking. And it's just fucked. It's nuts, man, because it's not what happens, mate.
>
> They get busted with a gram or they end up owing some gang or something. Next thing, they're getting hidings or they're getting locked up and then their kids are getting taken off them … They get out with this picture that he was going to be cool and their whole life probably gets destroyed in the first six months of it.
>
> That's what you do when you throw them in for three months, … you start a 10-year cycle with that person and fucking their life, …. and costing the system mega cause they'll be in and out of jail another 10 times in 10 years.

The benefits of including alternative considerations for methamphetamine is that it disrupts the multi-level marketing plan that is operated by the gangs. He is supportive of the approach of Te Ara Oranga believing it to be the way forward, one which recognises that most users need multiple approaches, multiple attempts to get 'clean' and a lot of support to counter the many years of effort that has worked them into the drug scene. From his own experience of being in rehab (though it failed):

> … that was one of the times they taught me that life can be good being clean. Cause I hadn't really experienced it before that. Even though I relapsed after, a lot of my thinking later on when I wanted to get clean was thinking back to that time and thinking life can be good, clean.

Giving up the scene and walking the road of recovery

Jarrod recalls the dangerous activity that is cooking for the gangs. After being in and out of prison and not having many options, he wanted to give up the scene. He especially did not want to return to cooking meth.

> … there's no way you can start getting into cooking and expect not to get caught. Like you might last six months, you might last six weeks, …You might last two or three years, but sooner or later you're going to get caught. Once you started there is no stopping because once you've done the first one, generally you're, . it's too late.
>
> A lot of the time I didn't want to cook. I didn't want to go and do the lag. Cause I've been in jail, … seeing people getting 17 years for doing it …

The risks involved are not restricted to concerns about being caught by Police. Cooking meth is a difficult, skilled task with most people having little knowledge of chemistry and almost no training in laboratory methods. The gangs would supply the materials, and they are not affordable so before the cook starts, they are beholden to the gang.

> Like some people just fuck it up they're just useless at it. They've suddenly lost half of it, and then they are paying the gangs back forever. There's big dramas over it … people will get killed over it. Like, they're supposed to have an ounce here and they go and pull it back. All of a sudden, oh, there's only half an ounce. They get accused of stealing the other half, but they've actually fucked up the chemistry somewhere.

But drug addiction without the cooking made life miserable:

> I was just broken … I was on the other end of it. Paying through the nose for it and all that in the last 10 years.
>
> I ended up going from living like before I got busted … when I had two or three bikes. I had cars, too, heaps, different cars. My girlfriend had the house full of all the latest gear and all that. Like I went from there to just broken …, down on my ass up here, shoplifting … cos I couldn't get on the programme for whatever reason. I was shoplifting to go and swap, like a hundred bucks with the shoplifting, $30 for meth.

What is his future?

It is well-recognised that some people age out of criminality, they just hit a point at which the lifestyle is too damaging, and the consequences wear a person down. Jarrod is not proud of his lifetime experience, he recognises the 'four pages of convictions' and he acknowledges the harm he has caused to himself, others, family and communities.

However, he observes the success of others who are within the Te Ara Oranga Programme. He's now clean from drugs and credits this to people not giving up on him, the modelling of opportunity he sees in others 'like him' who have been successful, and to individuals whom he developed trusting relationships. He observes that there is an alternative, a modelled outcome where people like himself have value.

> That's one of the reasons I want to work in this area … cos there'll be connection with sobriety-kind of way … so it will reinforce my sobriety. That's part of my whole plan.
>
> It can turn all my years of using into a positive thing, like I can become experienced to help other people, rather than it being a millstone around my neck, all my convictions, all that. Whereas if I go and work in this area, it becomes a positive thing. That's another part of my kind of philosophy.

What would have changed his life course?

Jarrod never really tells us what drove his drug use, especially that early experimentation as a teenager but it seems likely there is more to tell, including a troubled relationship with his father.

The first point of intervention could have been education. He is adamant that there are many myths that his story reveals about drug use, and that the story told to young people confuses them when they encounter the alternative narrative through the influence of others, their own experimentation and individual experience. Jarrod tells us it is easy to buy into the promises of others, and that these are never corrected by any education. Young people are poorly informed about addiction pathways with poor examples of actual experiences of drug users.

The second opportunity presented within his contact with the justice system. Before committing any serious drug-related offending Jarrod had been convicted for multiple offences of shoplifting (something he reports he learned to be 'pretty good at'). He also has vehicle theft, and involvement in family harm. At each point of contact there was an opportunity to ask what was driving his offending, with all three crime types being indicators of addiction issues and drug use.

Jarrod has a lot to say about prison programmes and his insights are used elsewhere within the evaluation of Te Ara Oranga. He tried *all the programmes*, and none worked, though he concedes that he learned something from each exposure. He is adamant that, at least for others, avoiding prison and getting counselling support would have helped push him onto a different pathway. Avoiding his first conviction for cannabis possession would have also potentially supported a different life-course.

The time he needed help most was likely when he had given up cooking, a role that supported his lifestyle. He was getting caught for shoplifting regularly, he had back-to-back convictions spanning several years. Jarrod was also trespassed from several major shopping stores, so it is likely that other aspects of the community also knew he was committing crime to support his addiction.

It was at this point he was most amenable to help even though he had been a heavy drug user for years. The obvious indication of the willingness to change is that he had given up cooking, his crime was now driven purely by addiction not a desire for a lifestyle he now thoroughly rejected.

Importantly, the police never caught him for 'cooking', the most serious offending and harm he was doing. He was sentenced for supply of class A drugs.

References

Akroyd, S., Paulin, J., Paipa, K., & Wehipeihana, N. (2016). *Iwi panels: An evaluation of their implementation and operation at Hutt Valley, Gisborne and Manukau from 2014 to 2015.* Ministry of Justice, New Zealand Police and Department of Corrections. **https://www.justice.govt.nz/assets/Documents/Publications/iwi-panels-evaluation-report.pdf**

Allsop, S. (2007). What is this thing called motivational interviewing? *Addiction*, *102*(3), 343–345. **https://doi.org/10.1111/j.1360-0443.2006.01712.x**

Andreasen, A. R. (2002). Marketing social marketing in the social change marketplace. *Journal of Public Policy & Marketing*, *21*(1), 3–13.

Anshel, M. H., & Kang, M. (2008). Effectiveness of motivational interviewing on changes in fitness, blood lipids, and exercise adherence of police officers: An outcome-based action study. *Journal of Correctional Health Care*, *14*(1), 48–62.

Antler, Y. (2018). *Multilevel Marketing: Pyramid-Shaped Schemes or Exploitative Scams?*

Bernstein, E., Bernstein, J., Feldman, J., Fernandez, W., Hagan, M., Mitchell, P., Safi, C., Woolard, R., Mello, M., & Baird, J. (2007). An evidence-based alcohol screening, brief intervention and referral to treatment (SBIRT) curriculum for emergency department (ED) providers improves skills and utilization. *Substance Abuse: Official Publication of the Association for Medical Education and Research in Substance Abuse*, *28*(4), 79.

Bichler, G., Malm, A., & Cooper, T. (2017). Drug supply networks: A systematic review of the organizational structure of illicit drug trade. *Crime Science*, *6*(1), 2.

Burke, B. L., Arkowitz, H., & Menchola, M. (2003). The efficacy of motivational interviewing: A meta-analysis of controlled clinical trials. *Journal of Consulting and Clinical Psychology*, *71*(5), 843–861. **https://doi.org/10.1037/0022-006X.71.5.843**.

Cartier, J., Farabee, D., & Prendergast, M. L. (2006). Methamphetamine use, self-reported violent crime, and recidivism among offenders in California who abuse substances. *Journal of Interpersonal Violence*, *21*(4), 435–445.

Caulkins, J. P., Disley, E., Tzvetkova, M., Pardal, M., Shah, H., & Zhang, X. (2016). Modeling the structure and operation of drug supply chains: The case of cocaine and heroin in Italy and Slovenia. *International Journal of Drug Policy*, *31*, 64–73.

Centre for Disease Control. (2020). *Types of Evaluation*. 2.

Copello, A., Templeton, L., Orford, J., & Velleman, R. (2010). The 5-Step Method: Evidence of gains for affected family members. *Drugs: Education, Prevention and Policy*, *17*(sup1), 100–112.

Cruickshank, C. C., & Dyer, K. R. (2009). A review of the clinical pharmacology of methamphetamine. *Addiction*, *104*(7), 1085–1099. **https://doi.org/10.1111/j.1360-0443.2009.02564.x**.

Cunningham, R. M., Bernstein, S. L., Walton, M., Broderick, K., Vaca, F. E., Woolard, R., Bernstein, E., Blow, F., & D'onofrio, G. (2009). Alcohol, tobacco, and other drugs: Future directions for screening and intervention in the emergency department. *Academic Emergency Medicine*, *16*(11), 1078–1088.

Curtis-Ham, S., & Walton, D. (2017a). Mapping crime harm and priority locations in New Zealand: A comparison of spatial analysis methods. *Applied Geography*, *86*, 245–254.

Curtis-Ham, S., & Walton, D. (2017b). The New Zealand crime harm index: Quantifying harm using sentencing data. *Policing: A Journal of Policy and Practice*, *12*(4), 455–467.

Curtis-Ham, S., & Walton, D. (2017c). The New Zealand crime harm index: Quantifying harm using sentencing data. *Policing: A Journal of Policy and Practice*.

Désy, P. M., & Perhats, C. (2008). Alcohol screening, brief intervention, and referral in the emergency department: An implementation study. *Journal of Emergency Nursing*, *34*(1), 11–19.

DiFranza, J. R. (2020). Neural remodeling begins with the first cigarette. *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.

Dillard, J. P., Meczkowski, E., & Yang, C. (2018). Defensive reactions to threatening health messages: Alternative structures and next questions. *International Journal of Communication*, *12*, 23.

Dobkin, C., & Nicosia, N. (2009). The war on drugs: Methamphetamine, public health, and crime. *American Economic Review*, *99*(1), 324–349.

Durie, M. H. (1985). A Maori perspective of health. *Social Science & Medicine*, *20*(5), 483–486.

Durie, M. H. (1997). Maori cultural identity and its implications for mental health services. *International Journal of Mental Health*, *26*(3), 23–25.

Elder, J. W., Wu, E. F., Chenoweth, J. A., Holmes, J. F., Parikh, A. K., Moulin, A. K., Trevino, T. G., & Richards, J. R. (2020, July 17). *Emergency Department Screening for Unhealthy Alcohol and Drug Use with a Brief Tablet-Based Questionnaire* [Research Article]. Emergency Medicine International; Hindawi. **https://doi.org/10.1155/2020/8275386**.

Gage, S. H., & Sumnall, H. R. (2019). Rat Park: How a rat paradise changed the narrative of addiction. *Addiction*, *14*(5), 917–922. **https://doi.org/10.1111/add.14481**.

Goldsmid, S., & Willis, M. (2016). Methamphetamine use and acquisitive crime: Evidence of a relationship. *Trends and Issues in Crime and Criminal Justice*, *516*, 1.

Greenwald, G. (2009). *Drug Decriminalization in Portugal*. Cato Institute.

Guide to Social Cost Benefit Analysis. (2015, July 27). **https://www.treasury.govt.nz/publications/guide/guide-social-cost-benefit-analysis**.

Harland, J., & Ali, R. (2017). *ASSIST on Ice: The alcohol, smoking and substance involvement screening test and brief intervention for methamphetamine use.* DASSA-WHO Collaborating Centre. **https://cracksintheice.org.au/pdf/ASSIST-on-ICE-eManual.pdf**.

Hastings, G., & Domegan, C. (2017). *Social marketing: Rebels with a cause*. Routledge.

Hastings, G., MacFadyen, L., & Anderson, S. (2000). Whose behavior is it anyway? The broader potential of social marketing. *Social Marketing Quarterly*, *6*(2), 46–58.

Herbalife Annual Report. (2019). **https://ir.herbalife.com/static-files/30be29aa-b48a-4405-aef4-cb022afbeb2a**.

Infometrics. (2020). *Quarterly economic monitor*. **https://ecoprofile.infometrics.co.nz/northland%20region/QuarterlyEconomicMonitor/Gdp**.

Irving, A., Goodacre, S., Blake, J., Allen, D., & Moore, S. C. (2018). Managing alcohol-related attendances in emergency care: Can diversion to bespoke services lessen the burden? *Emergency Medicine Journal*, *35*(2), 79–82. **https://doi.org/10.1136/emermed-2016-206451**.

Jackson, N. O., & Pawar, S. (2013). *A Demographic Accounting Model for New Zealand. Nga Tangata Oho Mairangi: Regional Impacts of Demographic and Economic Change – 2013–2014.* National Institute of Demographic and Economic Analysis, University of Waikato.

Kalkhoran Sara, Benowitz Neal L., & Rigotti Nancy A. (2018). Prevention and Treatment of Tobacco Use. *Journal of the American College of Cardiology*, *72*(9), 1030–1045. **https://doi.org/10.1016/j.jacc.2018.06.036**.

Kilanowski, J. F. (2017). *Breadth of the socio-ecological model*. Taylor & Francis.

King, G., & Nielsen, R. A. (2019). *Why propensity scores should not be used for matching*.

LaMorte, Wayne W. (2020). *The Transtheoretical Model (Stages of Change)*. Boston University School of Public Health. **https://sphweb.bumc.bu.edu/otlt/mph-modules/sb/behavioralchangetheories/BehavioralChangeTheories6.html**.

Le, V., & Lauchs, M. (2013). Models of South-East Asian organised crime drug operations in Queensland. *Asian Journal of Criminology*, *8*(2), 69–87.

Liu, H. (2018). The Behavioral Economics of Multilevel Marketing. *HASTINGS BUSINESS LAW JOURNAL*, *14*, 31.

Mark, S., & Hagan, P. (2020). *Co-design in Aotearoa New Zealand: A snapshot of the literature* (p. 38). Auckland Co-design Lab, Auckland Council.

Marlatt, G. A., & George, W. H. (1984). Relapse prevention: Introduction and overview of the model. *British Journal of Addiction*, *79*(4), 261–273.

McFadden, M., New Zealand, & Ministry of Health. (2016). *The New Zealand drug harm index 2016*.

Mcintosh, J., Bloor, M., & Robertson, M. (2007). The effect of drug treatment upon the commission of acquisitive crime. *Journal of Substance Use*, *12*(5), 375–384. **https://doi.org/10.1080/14659890701495102**.

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. **https://doi.org/10.1016/j.drugalcdep.2020.108262**.

Miller, W. R. (1983). Motivational interviewing with problem drinkers. *Behavioural and Cognitive Psychotherapy*, *11*(2), 147–172.

Miller, W. R., & Rollnick, S. (2009). Ten things that motivational interviewing is not. *Behavioural and Cognitive Psychotherapy*, *37*(2), 129–140.

Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford press.

Ministry of Health and Social Affairs. (n.d.). *Swedish drug policy – a balanced policy based on health and human rights* (p. 12). Government Offices of Sweden. **https://www.government.se/496f5b/contentassets/89b85401ed204484832fb1808cad6012/rk_21164_broschyr_narkotika_a4_en_3_tillg.pdf**.

Murray, C. J. L., Barber, R. M., Foreman, K. J., Ozgoren, A. A., Abd-Allah, F., Abera, S. F., Aboyans, V., Abraham, J. P., Abubakar, I., Abu-Raddad, L. J., Abu-Rmeileh, N. M., Achoki, T., Ackerman, I. N., Ademi, Z., Adou, A. K., Adsuar, J. C., Afshin, A., Agardh, E. E., Alam, S. S., … Vos, T. (2015). Global, regional, and national disability-adjusted life years (DALYs) for 306 diseases and injuries and healthy life expectancy (HALE) for 188 countries, 1990–2013: Quantifying the epidemiological transition. *The Lancet*, *386*(10009), 2145–2191. **https://doi.org/10.1016/S0140-6736(15)61340-X**.

National Institute on Drug Abuse. (2018). *Principles of drug addiction treatment: A research-based guide*. **https://www.drugabuse.gov/publications/principles-drug-addiction-treatment-research-based-guide-third-edition/evidence-based-approaches-to-drug-addiction-treatment/behavioral-3**.

National Organised Crime Group. (2020). *5 Dimensional targeting and Disruption of Criminal Business Entities: Making New Zealand's environment as harsh as possible for criminal business entities to operate in.* NZ Police.

NZ Police. (2017). *Prevention First: National Operating Model 2017*. New Zealand Police. **https://www.police.govt.nz/about-us/publication/prevention-first-national-operating-model-2017**.

Obert, J. L., McCann, M. J., Marinelli-Casey, P., Weiner, A., Minsky, S., Brethen, P., & Rawson, R. (2000). The Matrix Model of outpatient stimulant abuse treatment: History and description. *Journal of Psychoactive Drugs*, *32*(2), 157–164.

O'Brien, A. M., Brecht, M.-L., & Casey, C. (2008). Narratives of methamphetamine abuse: A qualitative exploration of social, psychological, and emotional experiences. *Journal of Social Work Practice in the Addictions*, *8*(3), 343–366.

Priest, B., & Lockett, H. (2020). Working at the interface between science and culture: The enablers and barriers to individual placement and support implementation in Aotearoa/New Zealand. *Psychiatric Rehabilitation Journal*, *43*(1), 40.

Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In *Treating addictive behaviors* (pp. 3–27). Springer.

Prochaska, J. O., DiClemente, C. C., & Norcross, J. C. (1993). In search of how people change: Applications to addictive behaviors. *Addictions Nursing Network*, *5*(1), 2–16.

Rawson, R. A., Marinelli-Casey, P., Anglin, M. D., Dickow, A., Frazier, Y., Gallagher, C., Galloway, G. P., Herrell, J., Huber, A., & McCann, M. J. (2004). A multi-site comparison of psychosocial approaches for the treatment of methamphetamine dependence. *Addiction*, *99*(6), 708–717.

Rubak, S., Sandbæk, A., Lauritzen, T., & Christensen, B. (2005). Motivational interviewing: A systematic review and meta-analysis. *British Journal of General Practice*, *55*(513), 305–312.

Saunders, J. B., Aasland, O. G., Amundsen, A., & Grant, M. (1993). Alcohol consumption and related problems among primary health care patients: WHO Collaborative Project on Early Detection of Persons with Harmful Alcohol Consumption-I. *Addiction*, *88*(3), 349–362. **https://doi.org/10.1111/j.1360-0443.1993.tb00822.x**.

Sommers, I., & Baskin, D. (2006). Methamphetamine use and violence. *Journal of Drug Issues*, *36*(1), 77–96.

Steinkopf, B. L., Hakala, K. A., & Van Hasselt, V. B. (2015). Motivational interviewing: Improving the delivery of psychological services to law enforcement. *Professional Psychology: Research and Practice*, *46*(5), 348–354. **https://doi.org/10.1037/pro0000042**.

Stevens, A., Hughes, C. E., Hulme, S., & Cassidy, R. (2019). Depenalization, diversion and decriminalization: A realist review and programme theory of alternatives to criminalization for simple drug possession. *European Journal of Criminology*, 147737081988751. **https://doi.org/10.1177/1477370819887514**.

Tackling Methamphetamine: Progress Report. (2015). Department of the Prime Minister and Cabinet.

Te Ara Oranga Evaluation Working Group. (2018). *Te Ara Oranga Methamphetamine Demand Reduction Programme: First Progress Evaluation Report*. Ministry of Health/Northland District Health Board.

Walton, D. (2021). *Te Manawa Titi—Whāngaia Ngā Pā Harakeke: Auckland District: 2019-2020* (No. 3; p. 23). Crow's Nest Research Ltd.

Walton, D., & Brooks, R. (2019). *Whāngaia Ngā Pā Harakeke Pilot: Counties Manukau District Outcomes Evaluation* (pp. 1–37). New Zealand Police.

Walton, D., & Brooks, R. (2020). *Technical Report Whāngaia Ngā Pā Harakeke Pilot Eastern (Tairāwhiti) District Outcomes Evaluation*. Safer Whanau, NZ Police.

Walton, D., & Martin, S. (2020). *Te Ara Oranga: The Path to Wellbeing: The Development and implementation of the Methamphetamine Harm Reduction Programme in Northland: Wellington* (No. 1; p. 99). Crow's Nest Research Ltd.

Walton, D., & Martin, S. (2021). *Te Ara Oranga: The Path to Wellbeing The Development and Implementation of the Methamphetamine Harm Reduction Programme in Northland Process*

Evaluation Report (No. 1; The Evaluation of Te Ara Oranga, p. 99). Ministry of Health/ Northland District Health Board.

Walton, D., Martin, S., & Li, J. (2019). Iwi community justice panels reduce harm from re-offending. *Kōtuitui: New Zealand Journal of Social Sciences Online*, 1–18. **https://doi.org/10.1080/1177083X.2019.1642921**.

Weisheit, R. (2008). *Making Methamphetamine*. *23*, 31.

Whiria Te Muka. (2020). *He Maturanga Hauhake. Meth use as a trigger for whānau harm in Te Hiku.* Te Hiku Iwi Development Trust, Kaitāia.

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. **https://doi.org/10.1016/j.drugpo.2018.09.007**.

Yudko, E., Lozhkina, O., & Fouts, A. (2007). A comprehensive review of the psychometric properties of the Drug Abuse Screening Test. *Journal of Substance Abuse Treatment*, *32*(2), 189–198. **https://doi.org/10.1016/j.jsat.2006.08.002**.

Zhang v R [2019] NZCA 507: New sentencing guidelines for methamphetamine-related offending. (2019, November 13). New Zealand Law Society | Te Kāhui Ture o Aotearoa. **https://www.lawsociety.org.nz/news/legal-news/zhang-v-r-2019-nzca-507-new-sentencing-guidelines-for-methamphetamine-related-offending/**.