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Using an Outcome-Based Framework to Analyse Drug Policies upon Methamphetamine Markets: A Comparison of New Zealand and the United States (Oregon)

Prepared by
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I would like to extend a heart-felt appreciation to the wonderful people of New Zealand. You are fiercely independent and strongly supportive of individual freedoms, respectful of their environment and cultures, pragmatic problem solvers who are not afraid of challenging convention through honest and open dialogue. I have learned much from you all.

The opinions expressed in this report are mine alone and do not necessarily reflect the official policy of the New Zealand Government, the New Zealand Police, New Zealand Customs, the National Drug Intelligence Bureau, the Massey University Centre for Social Health Outcomes Research and Evaluation, the Institute of Environmental Sciences and Research, the Ian Axford (New Zealand) Fellowships in Public Policy, or Fulbright New Zealand.

Matthew Nice
Wellington, July 2007

EXECUTIVE SUMMARY

New Zealand's methamphetamine problem grew quickly since the late 1990s. According to the United Nations Office on Drugs and Crime, the country is reported to have one of the highest prevalence rates of use in the general population in the world. Once recognised, the government moved quickly to enact comprehensive "whole of government" drug action plans that provided for both supply-side and demand-side interventions. The approach focused on strong law enforcement actions to diminish drug availability. Precursor chemical controls, increased enforcement staffing, specialised drug teams, increased drug apprehensions, re-scheduling of drugs and precursor chemicals, adding new drug offences, expanded Police and Customs powers, among other interventions swiftly ensued. These investments led immediately to increased Police and Customs activities, such as methamphetamine seizures, increased clandestine drug laboratory detection and dismantling, record precursor chemical seizures, and a doubling of methamphetamine-related apprehensions.

To determine the outcomes of these activities upon methamphetamine market availability, historical purity data - the only known outcome indicator of availability - from 2001 to 2007 were examined. The results showed that the market purity grew quickly from about 30% in 2001, to more than twofold in 2003. Since then the market has remained stable although methamphetamine is readily available, particularly in the northernmost part of the country.

Contrary to results found in the United States, market outcome data suggests that supply-side activities, specifically precursor chemical controls, had no measurable impact on the purity levels of the drug in the country which have remained stable. These results suggest that the past memorandums of understanding with the chemical companies and the various efforts with individual pharmacies, were less than effective at stemming domestic methamphetamine production. To reduce domestic production strong universal precursor controls for the chemical and pharmacy industries need to and could still be enacted.

Because of the government's response, the Police are now better able to identify and apprehend those involved in the country's drug market. Unfortunately, the outcomes of these apprehensions - successful prosecution as a percentage - have failed to keep pace. For reasons unknown, conviction rates for drug related cases have declined to some of the lowest recorded levels in recent history. This occurred in light of increased enforcement powers, increased staffing and increased offence categories, all designed with the intention to improve successful prosecution. This result points to the need for an examination of prosecution processes to determine the reasons for the decline and to have resources directed to address the problem(s).

Once drug involved offenders are convicted of a crime, the government currently does not mandate treatment. This may be due to the perception that treatment is only effective for those who volunteer. For example, addicted offenders who are convicted only enter drug treatment if they are willing. Because drug users often deny the extent of their drug addiction many, including those using methamphetamine, do not voluntarily enter drug treatment. There is an opportunity for the government to mandate offenders into appropriate treatment at various stages of their criminal

careers, such as making it a condition of pre-trial/bail release, low-level diversionary treatment, drug treatment courts for community-based offenders, and in-prison drug treatment for more serious offenders.

The lack of drug monitoring infrastructure, readily available data, actionable information for decision-makers, and little history of a hard drug problem contributed to the delay in identifying the depth, breadth and speed of the methamphetamine problem. Some of this was due to the initial lack of a supply-side drug monitoring system staffed by experienced personnel. Parts of a comprehensive drug signature monitoring programme currently exist, however they need to be integrated and expanded. To prepare for the future, timely monitoring of drug market outcomes needs to occur through the development of a drug signature programme staffed by permanent employees able to expand institutional knowledge.

For most recommendations, close monitoring and regular reporting on the results of the investments would be essential.

Local synthetic drug production will continue to be the emerging drug threat globally. Early identification and effective supply-side interventions are critical to preventing the establishment of drug markets. New synthetic illicit drugs are already emerging on the world scene, and New Zealand has the opportunity to invest in the capability to quickly identify, respond to, and quantify results before the next emerging drug market has a chance to take hold.

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PREFACE

This report represents five months of intensive research, including numerous interviews with countless experts across many government entities, local jurisdictions, and private agencies. It includes field research with AMCOS Police; tours of various Police facilities and drug testing centres; "ride-alongs" with police in Wellington, Auckland, and Counties Manukau Districts; and education in historical, cultural, and political perspectives of New Zealand's Pākehā and Māori alike. This was in addition to the many hours of lively and insightful discussions with various New Zealanders from all over the country.

The analytical aspects of this report are based on original research from data sources, which to date had never been previously analysed in depth. Two additional technical reports were written to provide the foundation for this report and to support the recommendations herein: *The Price and Purity of Illicit Drugs in Oregon and the Portland Metropolitan Area* - a report that examined a decade of drug market outcomes in the United States, state and local jurisdictions - and *New Zealand Methamphetamine Purity Trends: Technical Report* - a report detailing New Zealand's methamphetamine market outcomes since 2001. These reports should be considered additional material towards effective drug policy.

The comprehensive examination of applied drug policy should include analysis of both supply-side and demand-side interventions. This work represents only an analysis of some of the supply-side strategies. Only a comprehensive approach incorporating all available data will provide a clear picture of effectiveness and future direction.

There were several areas of important data that I was unable to access during my five months of work due to a lack of staffing resources, infrastructure (data availability), a lack of time, or some combination thereof. These included the ability to access timely data related to the country's community-based drug treatment system (e.g., the number and trends of enrolees, primary drugs of choice, retention and successful completion rates); historical drug-related hospitalisation data (e.g., the number and trends for new admissions; repeat admissions; related primary and secondary diagnoses); historical data related to Corrections' drug treatment programmes (both community-based and prison based); needle exchange programme data; and historical drug use prevalence data based on geography.

Applied policy research is often thought of as measuring where the "rubber meets the road." Each piece of information must be weighed against the quality and viewed within its context. Data quality is critical, and that said, high quality data will more likely get used and greater use will result in higher quality data.

Ngā mihi mō tō manaakitanga mai.

INTRODUCTION

The socio-economic impact of drug abuse to a society is often difficult to estimate due to its sheer size.[1] While the majority of these costs are often associated with the sheer volume of use of such substances as tobacco and alcohol, "hard drugs" often produce significant harms associated with individual health, damaged social structures and losses of liberty through criminal justice sanctions. In recent years focus on drug use in both New Zealand and the United States has shifted from substances such as cannabis, heroin and cocaine to synthetics such as methamphetamine.

Methamphetamine use and production in New Zealand rose very quickly. Prior to 2000, the country's most significant drug problem outside of alcohol and cannabis was the remnants of a brief and now defunct import heroin market in the early 1980s.[2] The country's relative isolation and small population (i.e., market potential) combined with a lack of illicit drug monitoring infrastructure allowed for the drug market to take hold before most people had ever heard the term methamphetamine. According to the United Nations Office on Drugs and Crime, New Zealand has one of the highest general population prevalence rates of amphetamine-type stimulants, the majority of which is methamphetamine.[3]

Indeed, the speed of methamphetamine's arrival and market growth was unimaginable. The first clandestine methamphetamine laboratory was identified in 1996, however it was sometime after that when the Police fully understood what it was they had discovered. In 2000, authorities detected and dismantled nine clandestine drug labs nationally, and by 2003 that number had risen to 202.

Nicknamed *"P"* for pure - referring to the belief that New Zealand's methamphetamine is highly potent - the combination of the famed New Zealand 'No. 8 wire' do-it-yourself mentality, the ability to manufacture a potent synthetic drug anywhere from commonly available precursor chemicals, a new smokable form, and the seduction of the drug's characteristics that appealed culturally and were reinforced socially, quickly created the country's first significant hard drug market in nearly 30 years.

Fuelled by the media coverage of several isolated yet dramatic events involving people under the influence of methamphetamine, the government launched the 2003 Methamphetamine Action Plan.[4] The Plan was a series of steps to reduce drug market supplies and reduce its demand. These steps focused substantial investments in supply-side interventions such as law enforcement and interdiction capacity and capability; attempts at controlling various precursor chemicals; clandestine laboratory identification and clean-up teams; public health information campaigns; youth services programmes; and increases in treatment capacity and efficacy nationwide.

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[1] The Robert Wood Johnson Foundation (2001); Wilkins, Reilly, Rose, Roy, Pledger, & Lee (2004), p.63

[2] Newbold (2004), p.58

[3] Annual prevalence of abuse as percentage of the population aged 15-64, UNODC (2007c), pp.246-247

[4] Bellamy & McNab (2003), p.8

Now, four years later, as the 2003 Methamphetamine Action Plan is being reviewed and revised, the question as to the results of all of the investment is a priority. Government investments have led to substantial increases in Police and Customs capacity and activities. Methamphetamine seizures, domestic clandestine drug laboratory detection and dismantling, precursor chemical seizures, and methamphetamine-related apprehensions have all increased to record levels. Did these activities have the desired outcomes? Is methamphetamine still readily available, is purity lower, or prices higher? What was the ultimate market outcome of the numerous supply-side activities outlined nationally? What are the future opportunities for the country?

1 METHAMPHETAMINE GROWTH

Methamphetamine is a powerful psycho-stimulant that was discovered in the early 1900s, and was used for a variety of medicinal purposes until the 1970s.[5] Its use declined after the public became aware of the harms of amphetamines. Today, methamphetamine has few legitimate medical uses such as for obesity, narcolepsy and attention deficit hyperactivity disorder.[6]

Methamphetamine's re-emergence on the global scene has been attributed in part to its smokable form, its ease of manufacture and availability, and its price and profitability.[7] Methamphetamine and its analogues belong to a group of drugs categorised as amphetamine-type stimulants (ATS) which also includes amphetamines, crystal methamphetamines, ecstasy (MDMA and related analogues) and other synthetic stimulants (e.g., methcathinone, phentermine, fenetylline).[8]

Depending on the form of the drug, methamphetamine can be administered orally, smoked, snorted, or injected. It produces a powerful, euphoric and confidence enhancing effect for the user which varies in onset and duration by the specific type of compound, route of admission, dose, and purity.[9] Additionally, unlike many other drugs it also produces significant culturally and socially reinforcing effects. For example, the effects of the drug increase a user's alertness and energy, allowing a user to work harder and longer. Its appetite suppressant qualities are associated with user weight loss. These characteristics are positively reinforced in many societies.[10]

Like many drugs, increased frequency and amounts are related with a range of harms such as drug addiction, mental illness, violence, poor physical health, poor social functioning and criminal behaviour.[11] Many of these negative effects are related to long-term chronic use which takes time to develop and which are not readily apparent to a user.[12] Because of the immediate positive reinforcing effects and the delayed onset of negative effects, users may be in denial about the need for treatment and therefore less likely to seek treatment on their own.[13]

Prevalence of the Problem

The United Nations 2006 World Drug Report, which reports ATS use since 1980, estimates that the number of world-wide users increased dramatically since 1998, but has stabilised globally at about 25 million people.[14] World-wide production is also

[5] UNDCP (1996), p.35
[6] Bellamy, & McNab, (2003), p.6
[7] ibid., p.82
[8] UNODC (2007a), p.123. Methamphetamine includes its various isomers d-, l-, and dl-.
[9] Gunter (2007), p.1176
[10] UNDCP (1996), p.35
[11] Australian National Council on Drugs (ND), pp.5-6. Note that some routes of administration (e.g., injection and smoking) are also associated with increased health harms.
[12] UNDCP (1996), p.119
[13] Substance Abuse and Mental Health Services Administration (2005), p.78; Mayo Foundation for Medical Education and Research (2005).
[14] UNODC (2007a), p.143

believed to have stabilised.[15] These figures however, mask the varied and shifting regional concentrations and demands for these types of drugs.

States in the west of the United States have been dealing with the effects of ATS for over a decade, but it is only more recently that evidence has shown that ATS use has spread eastward.[16] For example, since 1992 the Pacific Coast State of Oregon has had the highest per capita rate of treatment admissions for ATS use in the United States. Comparatively, the highest ATS treatment admission rate for any north-eastern state is fifty times lower.[17]

The United Nations Office on Drugs and Crime recently concluded of ATS in the Oceania region that: "Rapidly rising laboratory seizures have had no significant impact on prices and purities - suggesting overall production increased in recent years."[18] New Zealand is a substantial player in this problem, with one of the highest general population prevalence rates in the world.[19] Recent data from a study found that about 9.3% of New Zealanders had ever used amphetamines and 1.8% had ever used crystal methamphetamines.[20] A recent report of frequent methamphetamine users found that even though perceived police activity had increased, prices appeared to decline and availability increased.[21] Price and purity are difficult to determine precisely from a user's perception.

Availability

Methamphetamine differs from most other classes of illicit substances because of the ease with which it can be synthesized. There are a variety of both common precursor chemicals and simple production methods that allow those with a rudimentary understanding of chemistry to manufacture the drug.[22] The processing methods are directly related to the availability of precursor chemicals, and unlike plant-based drugs, such as cocaine and heroin, production location is independent of climate and geography.[23]

Methamphetamine can be synthesized from a myriad of common precursors such as ephedra, ephedrine, and pseudo-ephedrine.[24] Previously, the most common main ingredient was ephedrine, however world-wide declines in production lead to alternative precursors being used in production. Currently, methamphetamine is primarily produced by utilising diverted products containing pseudo-ephedrine.

Pharmaceutical grade pseudo-ephedrine is found in common cold-remedies as a decongestant. Its production is complex and is limited to a small number of major factories, mostly in India, China, and central Europe. Those factories produce the

[15] UNODC (2007a), p.124
[16] ibid., p.145
[17] SAMSHA (2004), p.2
[18] UNODC (2006), p.101
[19] UNODC (2007c), pp. 246-247
[20] Wilkins & Sweetsur (2007), p.16
[21] Wilkins, Girling, Sweetsur, & Butler (2005), pp.17-19
[22] A variety of step-by-step recipes are readily available on the internet.
[23] UNDCP (1996), p.36; Wilkins (2002), p.19
[24] International Narcotics Control Board (2007), pp.11-16; New Zealand Chemical Industry Council Inc. (2007), pp.7-9

bulk of the world's pseudo-ephedrine, some of which is diverted for illicit production of methamphetamine.[25]

Drug producers and traffickers are always looking for loopholes in precursor chemical control regulations, and altering their methods of synthesis in order to continue to meet illicit demand.[26]

Importation

There are two routes in which methamphetamines appear in New Zealand and the United States: importation and domestic production. First is the importation of methamphetamine produced outside the source country. For example, the United Nations Office on Drugs and Crime (UNODC) identify Mexico as a significant illicit manufacturing country to provide for the American market, and Southeast Asian countries provide for the Oceania region.[27] The sources of these importations are typically associated with a limited number of transnational organised crime syndicates, and domestic distribution is often associated with various gangs, particularly in New Zealand.

According to recent statistics, New Zealand authorities seized a record 113 kilograms of methamphetamine in 2006 (Figure 1).[28] This represents a 1600% increase over 2001. The 2006 spike was due to a Customs interdiction in Operation Major, which seized 95 kilograms of methamphetamine and significant amounts of precursor chemicals destined for the New Zealand market. It is believed that a small number of substantial traffickers account for most methamphetamine imported into New Zealand, most commonly in the smokable crystal methamphetamine form.

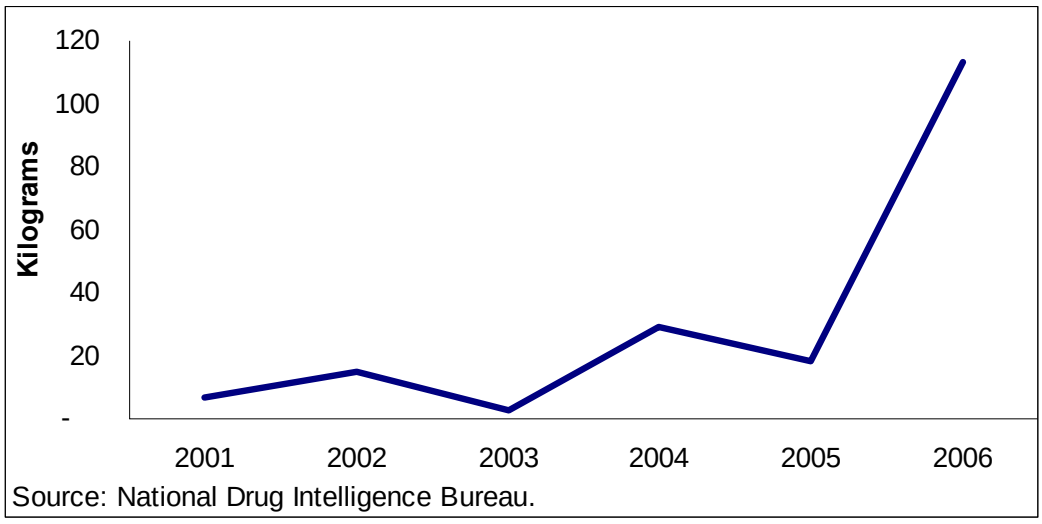


Figure 1. Methamphetamine Seized by the New Zealand Police & Customs

[25] Brady (2005).
[26] UNDCP (1996), p.37; UNODC (2007c), p.123; Caulkins (2000); Newton (2007a).
[27] UNODC (2007a), pp.133-134
[28] Total includes amphetamines; the vast majority of drugs seized are methamphetamines.

Domestic Production

The second source of methamphetamine comes from domestic clandestine laboratories.[29] These laboratories use chemical precursors that are either diverted from legitimate domestic markets (e.g., bulk chemicals and pharmacy pills) or provided by illicit precursor trafficking, typically associated with transnational organised crime syndicates. For example, the UNODC has identified several Southeast Asian countries, including China, as key precursor trafficking source countries for the Oceania region.[30] In New Zealand domestic clandestine laboratories (clan labs) are almost exclusively associated with the manufacture of methamphetamine-hydrochloride and not crystal methamphetamine. The creation of crystal methamphetamine requires an additional preparation step often avoided in already high purity domestic production.

Clan labs tend to be limited operations commonly producing small amounts, just enough for a "cook's" personal use and that of close associates.[31] The manufacturing process yields large amounts of both hazardous and toxic by-products. These typically make locations where they are produced uninhabitable. These by-products present environmental dangers for people nearby a lab and for those living in it, especially children. That the labs are clandestine, makes effective law enforcement much more difficult.

According to recent statistics, the New Zealand Police detected and dismantled 211 clan labs in 2006 (Figure 2).[32] While this figure has been stable since about 2003, it represents a four-fold increase over 2001.

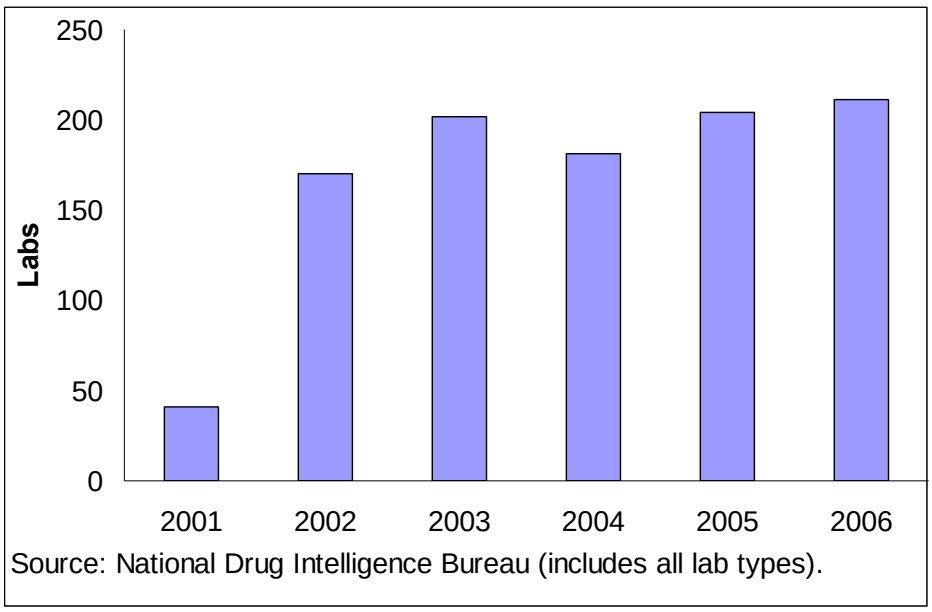
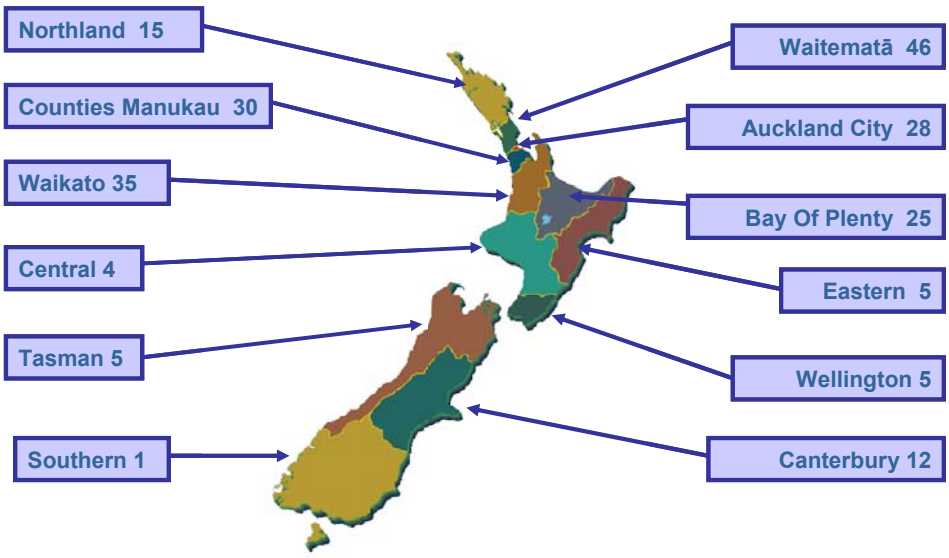


Figure 2. Clandestine Methamphetamine Laboratories Detected and Dismantled

[29] In the United States these are referred to as small toxic labs (STL); typically defined as producing less than 4.5 kilograms (10 pounds) of methamphetamine in a 24-hour period.
[30] UNODC (2007a), pp.133-134
[31] Wilkins, Reilly, Rose, Roy, Pledger, & Lee (2004), p.114
[32] Newton (2007b), p.6

Clan labs have been found in most regions of New Zealand, however the greatest concentrations have consistently been in the northernmost parts of the country. Figure 3 shows the location of the clan labs detected and dismantled by each Police District in 2006.



Source: National Drug Intelligence Bureau.

Figure 3. Clan labs by Police District in 2006

Clan labs have been also been substantially associated with membership in various domestic gang organisations. For example, a recent report found that about three-quarters of all offenders related to clan lab detection were associated with some domestic gang organisation.[33] Only a quarter of identifiable drug lab offenders had no known gang affiliation. Some experts suggest that increased gang membership and geographical expansion are related to increased domestic methamphetamine markets.

[33] Defined as loosely or directly affiliated gang members, see Newton (2007b), pp.20-21

2 NEW ZEALAND'S NATIONAL RESPONSE

Comprehensive and effective drug control policy is balanced on two requisite approaches: supply-side interventions and demand-side interventions.[34] Supply-side interventions target the availability of imported and manufactured drugs, typically through law enforcement strategies such as increased border protection, increased domestic law enforcement, prosecutions, and penalties. Demand-side interventions aim at preventing the use of drugs and at reducing the adverse consequences of drug abuse, typically through preventative education programmes and treatment programmes, respectively.

New Zealand's National Drug Policy 1998-2003 was the country's first comprehensive drug policy to be based on a cross-governmental framework.[35] Prior to this policy, government agencies had no strategically aligned cross-ministerial framework to respond to national drug problems. Additionally, there was universal identification of the greatest drug-related harms and how best to respond. Previous responses had sometimes led to cross-purposes between supply-side and demand-side interventions.

The National Drug Policy was based on harm-minimisation principles featuring both supply-side controls and demand-side interventions.[36] Overall policy oversight was the responsibility of the Ministerial Committee on Drug Policy while monitoring, reviewing and implementing was the responsibility of the Inter-Agency Committee on Drugs.[37] The Policy also identified the need for additional research into drug-related problems specific to New Zealand and emphasised the need for strong law enforcement in an effort to reduce the demand for drugs through supply-side interventions. However, it is important to note that development of this policy began in 1996 at a time when decision-makers were completely unaware of the impending methamphetamine problem.[38]

By late 2002, the media began reporting on the links between methamphetamine use and violence.[39] Several isolated yet dramatic events involving people under the influence of methamphetamine appeared in headlines, spurring many to call for the government to act. The 2003 Methamphetamine Action Plan was developed to address the now visible problem of methamphetamines. It aligned with the broader National Drug Policy framework developed earlier. The objective of the Plan was to develop cross-agency "whole of government" approaches to deal with the fast rise in methamphetamine-related problems. Like the National Drug Policy it included both supply-side and demand-side interventions, in addition to research.[40]

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[34] *Political declaration guiding principles of drug demand reduction and measures to enhance international cooperation to counter the world drug problem* (1998), p.8; ONDCP (2006), p.2; National Drug Research Institute (2007), p.2; Reuter & Stevens (2007), p.9

[35] New Zealand recently launched The National Drug Policy 2007-2012 (March 2007).

[36] Webb (1999), p.436

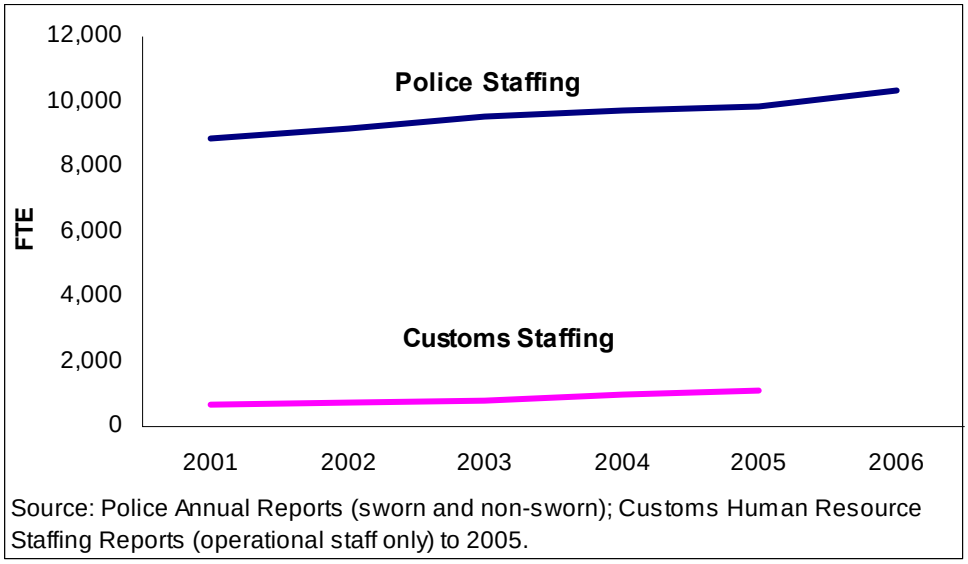
[37] ibid., pp.437-438

[38] NZNDP (1998). "Methamphetamine" is identified specifically only once in the 54-page document.

[39] Bellamy & McNab (2003), p.8

[40] A comprehensive review of the 2003 Methamphetamine Action Plan is currently underway within the Ministry of Health and is expected to be completed in mid-2007.

The Methamphetamine Action Plan emphasised the need for strong law enforcement interventions in an effort to reduce the demand for drugs. An examination of the plan identified 33 actionable steps (proposed or in process at the time of its release) of which 40% were focused on controlling supply (see Appendix A).[41] Supply-side interventions included: the reclassifying of methamphetamine into a Class A controlled drug which allowed for greater penalties and enhanced police powers to search and seize without a warrant; the creation of specialist methamphetamine clandestine laboratory investigator teams; and increased Police and Customs investigative and intelligence capacity (see Appendix B). For example, from 2001 to 2006 Police staffing increased by 17% (Figure 4), and between 2001 and 2005 Customs operational staff increased by 62%.[42]



Source: Police Annual Reports (sworn and non-sworn); Customs Human Resource Staffing Reports (operational staff only) to 2005.

Figure 4. Trends in Police and Customs Staffing

In addition to increased enforcement staffing and powers, various precursor chemical control schemes were developed. Supply-side interventions, in particular precursor chemical controls, have been shown to substantially constrain methamphetamine markets.[43] New Zealand classified many precursor chemicals into the controlled substance schedule (Misuse of Drugs Act 1975). Additionally, the National Drug Intelligence Bureau developed and signed in 2001 a Memorandum of Understanding (MoU) with the New Zealand Chemical Industry Council to identify and control bulk domestic precursor diversion.

A similar MoU was also planned for the pharmacy industry, however agreement was never reached. Instead, police in some districts held discussions with various individual pharmacies to increase awareness, increase cooperation, and control products containing pseudo-ephedrine. No documentation regarding the draft MoU or the subsequent discussions could be located, so assessing what was shared, which protocols suggested, or how they were and implemented is difficult to ascertain.

[41] Excludes proposed research agenda items.
[42] This figure excludes an additional 1,000 officers Police is currently recruiting; once complete this will increase sworn staff by an additional 13% over 2006 levels.
[43] Cunningham & Lui (2003); Degenhardt, Reuter, Collins, & Hall (2005); Nice (2007a); UNODC (2007c), p.123

Economics of Supply-Side Interventions

Drugs are obtained through illicit markets much in the same way legal goods are obtained in open markets. The theory behind supply-side interventions is based on simple market economics; the disruption of the markets will result in diminished amounts of drugs to provide for demand, resulting in reduced availability and therefore reduced use of illicit drugs.[44] The reduced supply will drive up drug prices, lower quality and reduce associated harms. Evidence has found that supply-side interventions such as law enforcement, customs interdictions, and precursor controls, can disrupt the availability of illicit drugs in a drug market, with the size and duration of the impact related to the strategies used.[45]

Research summarised by Caulkins identifies many international source country interventions that temporality reduced drug markets.[46] For example, the elimination of the "French Connection" trafficking group increased heroin prices in the 1970s. The combined action of the United States government and the Colombian government leading to the capture of key Medellin drug leaders and the ultimate break-up of their cartel led to short-term increases in cocaine prices.

The evaluation of the 2001 Australian heroin "drought" found that several international and domestic supply-side interventions working in concert reduced the heroin market. The synergy of increased Australian drug law enforcement, increased disruption of local and transnational criminal networks, combined with reduced drug profitability and reduced source country supplies, led to significant and sustained decreases in heroin purity and a corresponding increase in price.[47]

From the mid-1990s through 2006 the United States enacted three separate large scale domestic precursor chemical control restrictions. Shortly after each restriction was enacted notable declines in methamphetamine purity levels - and corresponding increases in drug prices - were seen at the national, state, and local levels.[48] These changes were also noted across various segments of the market, such as at the street level and by those associated with drug domestic manufacture.

Reduced drug purity is a key outcome of effective supply-side interventions when considering overall harm to citizens. For example, research has found that lower drug markets' purity levels are associated with decreased likelihood of new user initiation, decreased drug treatment admissions, decreased drug-related hospital emergency admissions, less drug use, and fewer drug-related criminal offences.[49]

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[44] Caulkins (2000), pp.404-405; Reuter & Caulkins (2004), p.143; Brownstein & Taylor (2007), p.S52
[45] ibid.; Roberts, Trace, & Klein (ND), p.2
[46] Caulkins (2000), p.422
[47] Degenhardt, Reuter, Collins, & Hall (2005), p.461
[48] Cunningham & Lui (2003); Reuter (2003); ONDCP (2004a). The most recent precursor controls were enacted at the state level in 2005 for some states and nationally in 2006 (Nice, 2007a).
[49] Caulkins & Reuter (1996); Expert Advisory Committee on Drugs (2002); Cunningham & Lui (2003); Reuter & Caulkins (2003); Degenhardt, Reuter, Collins, & Hall (2005); Caulkins (2007). The cause and effect relationship between illicit drug use and crime is debatable. However, simply possessing a scheduled drug is an offence and therefore, increasing initiation into illicit drug use increases crime.

Research has also found that as in other markets, consumers of illicit drugs are sensitive to price changes. For example, research in the United States has identified an inverse relationship between methamphetamine prices and consumption among arrestees. A 1% increase in price was associated with between a 1.4% and 1.5% reduction in consumption.[50] Thus, both purity and price are key market outcome measures representing effective supply-side interventions.

Supply-Side Measures

Measuring policy interventions is challenging because you must first identify the objectives and how best to measure them.[51] Currently, the New Zealand government has not adopted specific measures of success associated with their illicit drug supply reduction strategy.[52] Measures of supply-side interventions typically reported are limited to various input or output measures that are technically unable to demonstrate supply-side outcomes (Figure 5).[53]

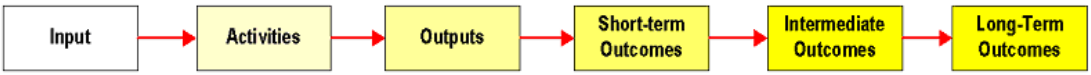

Figure 5. Conceptual Logic Model for Supply-side Measures

Briefly, input measures describe the amount of resources used to engage in activities that attempt to accomplish the stated outcomes or goals.[54] For example, the number of police or customs staff, the size of the drug enforcement budget, or the number of specialised drug clean-up teams, all represent measures of resources. These resources are used to perform activities, measured as outputs.

Output measures are common indicators of work or activities that have occurred. Supply-side related output measures typically include apprehensions made; number of drug-related prosecutions; clandestine drug laboratories identified and dismantled; number of border interdictions; and amounts of drugs seized.[55] While they represent the amount of activity undertaken, they do not represent the short or long-term results of those activities and seen alone can create ambiguity.

For example, Figure 6 shows that nationally, "hard drug" (i.e., non-cannabis related drugs) apprehensions from 2001 to 2006 more than doubled.[56] This may be due to the fact that several new drug offences were added under the 1975 Misuse of Drugs Act (e.g., possession of methamphetamine preparation utensils and precursor drugs). It is

[50] Abt Associates (2001), as cited in Dobkin & Nicosia (2007), p.5
[51] Schacter (2002); OMB (2003); Campbell (2005); Dobkin & Nicosia (2007), p.2
[52] National Bureau of Criminal Intelligence (2007); Inter-Agency Committee on Drugs (1999), p.81
[53] Methamphetamine Action Plan (2003), p.12
[54] Weatherburn (2000); Caulkins (2007); Homel & Willis (2007).
[55] ibid.
[56] In 2006, Statistics New Zealand data showed that 42% of all hard drug apprehensions were for possession/use, a rate substantially lower than what is typical in the United States. This likely represents the New Zealand Police's strategic focus upon drug distribution networks versus individual users who are more commonly targeted for apprehension in the United States. For example, hard drug possession/use apprehensions in Oregon in 2005 accounted for 84% of all hard drug apprehensions, see Oregon Uniform Crime Reporting (2007), section 4, p.9

also likely to be related to a combination of improved Police detection skills and increased enforcement staff (c.f., Figure 4).

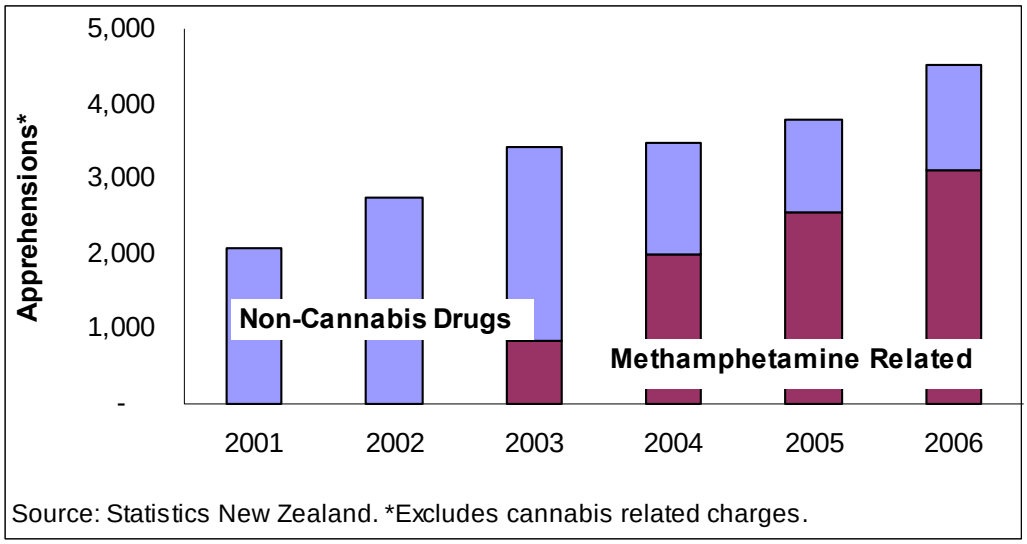

Figure 6. Hard Drug (i.e., non-cannabis related) Apprehensions

The combined amount of methamphetamine precursor chemical (i.e., ephedrine and pseudo-ephedrine) seized by Police and Customs since 2001 increased 7000%, to a record of more than 2,300 kilograms in 2006 (Figure 7). The data however cannot measure the outcomes of these increased seizures. The seizures may be due to more precursors trafficked, or increased detection due to skills and staffing levels? The increase in seizures may or may not mean that methamphetamine availability has decreased.

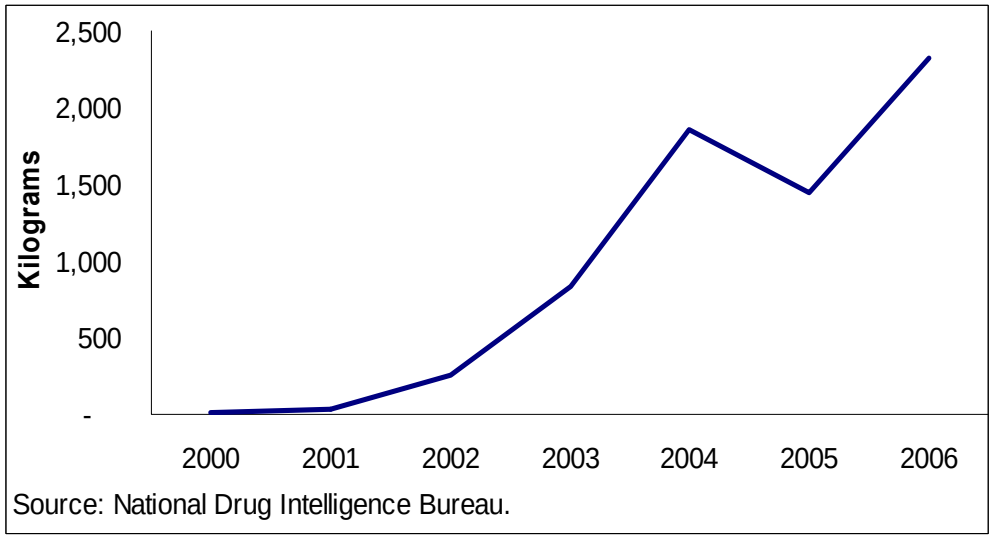

Figure 7. Ephedrine and Pseudo-ephedrine Precursor Chemicals Seized

While both input and output measures are important in producing a complete picture, they do not measure the results or outcomes of the investment and can subsequently introduce the ambiguity seen above. These examples show much activity, but leave

open the question of outcomes upon drug availability, purity and price in the New Zealand methamphetamine market.

Outcome measures represent the results of the activities, or what was attained for the investment. These can be measured temporally, in the short, intermediate and long-term. Examples of common supply-side outcome measures from other countries include the availability of drugs, time taken to obtain drugs, drug market stability, the price per pure gram of drugs, and the purity of drugs.[57]

Outcome measures, while of greatest importance, are often the most challenging to assess. This is because the data are often too resource intensive to collect or more commonly are not available due to a lack of monitoring infrastructure or staffing capacity, or both.[58]

Drug Market Monitoring Infrastructure

Little in the way of illicit drug market monitoring infrastructure existed in New Zealand prior to 2004. This was in part due to there being little in the way of a hard drug problem in the country since the heroin market dwindled decades ago. Much of the available data were based on individual cases for operations and investigations, rather than a national monitoring system. The lack of drug monitoring infrastructure, readily available data, and actionable information for decision-makers meant that the existence of a methamphetamine problem was not obvious for longer than was desirable. Quick detection and control of emerging drug markets is important to cost-effective containment.[59]

The government recognised the need for information and began investing in some research capacity for the future. For example, the New Zealand Arrestee Drug Abuse Monitoring System (NZ-ADAM) piloted in 2004 was based on the model introduced in the United States.[60] It continues and is now expanded in four locations. The programme provides regular drug testing for arrestees for several illicit substances, including methamphetamine. The data are useful in monitoring the proportion of arrestees using drugs at the time of their crime and provide ongoing intelligence on drug use and related harms, information on illicit drug markets, and offender behaviour and drug treatment needs. It currently suggests that the proportion of arrestees testing positive in the four locations varies by location, is relatively small overall, and has remained stable has remained stable since 2005.

Another important investment introduced in 2005 was the Illicit Drug Monitoring System (IDMS). This reporting system is based on the self-reporting experiences of three groups of frequent drug users and experts based in Auckland, Wellington, and Christchurch. The system provides timely detailed information on illicit drug use and

[57] Pennell, Ellett, Rienick, & Grimes (1999), p.29; Willis, Homel, & Gray (2006), p.22; Brownstein & Taylor (2007), p.S52
[58] Willis, Homel, & Gray (2006), p.49
[59] Caulkins (2000), pp.430-431
[60] Hales, Bowen, & Manser (2006). The Department of Justice programme began in 1987 as the Drug Use Forecasting (DUF) monitoring system. It expanded into the Arrestee Drug Abuse Monitoring System in 1996.

harms, examines changing characteristics of drug use, and market perceptions of frequent drug users.

These new programmes have substantially expanded the drug monitoring infrastructure and regular information dissemination, and provide detail as to changes in the market for two key segments: the offender and the frequent drug user. While this rich data will prove invaluable to policy-makers now and into the future, they are less able to provide reliable nationwide outcome-based historical perspective as to the changing methamphetamine markets, data related to a broader user base (e.g., middle-class users), or identify newly emerging geographically specific drug threats in New Zealand.[61]

Market Outcome Indicators

Although imperfect, measures of purity and price of illicit drugs are frequently used indicators of changing availability and are used to assess market outcomes globally, nationally, and locally.[62] For example, policy-makers and researchers in the United States, regularly report to Congress on the purity and price of cocaine, heroin, methamphetamine and other drugs.

Drug purity and price per pure gram are best tracked and reported in tandem because while related, they both are subject to change.[63] For example, in the United States a standard street drug-buy is the ubiquitous "dime-bag", a name that reflects its constant $10 purchase price.[64] While the purchase price of the bag may remain stable over time, the amount and purity of the drug in the bag often fluctuates depending on market forces. Thus, tracking street price without knowing the volume of pure drug purchased can be misleading.

United States' Market Outcome Indicators

Research from the United States has shown an inverse relationship between drug purity and price per pure gram.[65] For example, the Drug Enforcement Administration (DEA) drug signature tracking database (STRIDE) records various drug "signatures", such as the drug type (including isomers and analogues), purity, purchase price, and location, situation, amounts seized (raw and pure), and substance adulterants for each transaction, to allow for monitoring of new and existing drug markets nationwide. Research examining methamphetamine purity and drug price per pure gram data collected between 1993 and 2006 showed that federal, state, and local increases in purity were strongly associated with decreases in price per pure gram at all market

[61] Tragler, Caulkins, & Feichtinger (1997), p.34

[62] UNDCP (1996), p.84; Pennell, Ellett, Rienick, & Grimes (1999), p.29; ONDCP (2004a); Degenhardt, Reuter, Collins, & Hall (2005), pp.460-461; UNODC (2007c), pp.262-263; Nice (2007a). For a review of the utility and limitations of these types of data see ONDCP (2004b) and Caulkins (2007).

[63] Price per pure gram is used to control for (i.e., standardise) the widely varying purity levels and amounts of illicit drugs seized. This is critical, because simply assessing the street purchase price without knowing the amount of pure drug purchased can lead to erroneous conclusions about market fluctuations.

[64] To reduce time of a deal and risk of apprehension, drug-buys are often priced conventionally in round dollar amounts. Reuter & Caulkins (2004), p.145

[65] Degenhardt, Reuter, Collins, & Hall (2005), p.460; Nice (2007a), pp.5-9

levels.[66] These changes were most apparent after various methamphetamine precursor chemical regulations were enacted.

In the United States, national precursor controls were associated with notable declines in purity levels - and corresponding increases in price per pure gram - at the national, state, and local levels shortly after restrictions were enacted (Figure 8). These controls have occurred three times since the mid-1990s: national ephedrine chemical controls were enacted in 1995; national pseudo-ephedrine controls were enacted in 1997; and by 2005 many states - those hardest hit by methamphetamines - enacted strict State-level controls of pharmacy over-the-counter medications containing pseudo-ephedrine.[67]

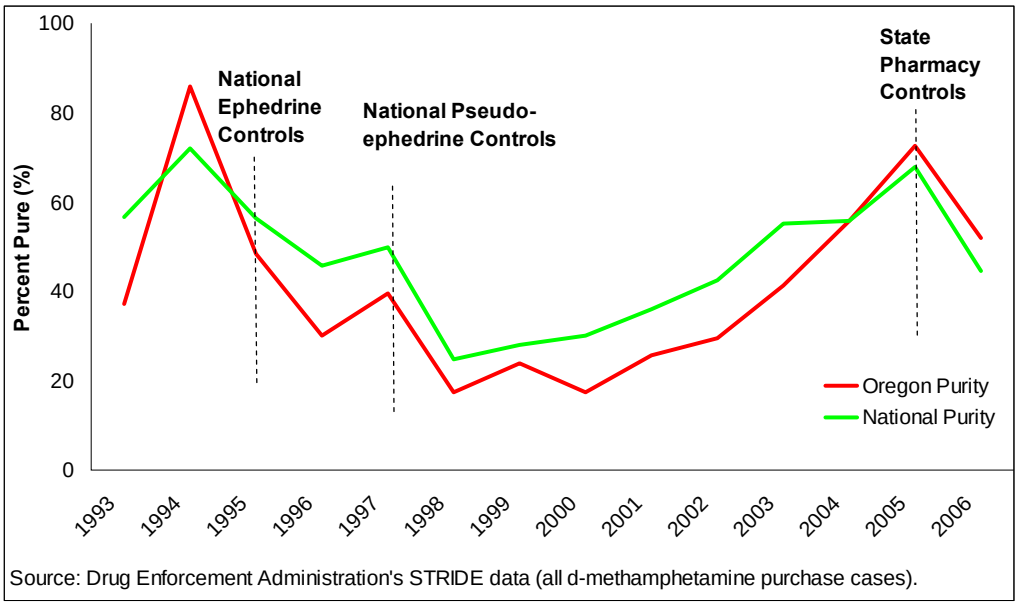

Figure 8. United States (National) & State of Oregon Methamphetamine Purity

Figures 8 and 9 show that in the State of Oregon - arguably one of the most substantially impacted states in the country - each control enacted reduced supplies and availability, and realised market purity decreases of approximately 20%.[68] These purity decreases were noted in national, state and local data, as well as from data recording drug purchases and domestic laboratory production.[69]

Changes in other associated indicators were also noted. For example, reports found that the number of clandestine methamphetamine laboratories detected declined 59%

[66] ONDCP (2004a), pp.13-14; Nice (2007a), pp.5 & 9

[67] ONDCP (2004a), pp.13-14; Nice (2007a), pp.5 & 9; Cunningham & Lui (2003); The National Alliance for Model State Drug Laws (2005).

[68] Oregon shares many similarities with New Zealand (e.g., population; methamphetamine as the primary hard drug of choice; domestic and import drug markets; urban rural population splits; environmental and libertarian values) and is more useful a comparison than the United States as a whole.

[69] Nice (2007a), Figure 16. According to investigative reports, the 1994 to 1995 decline was due to an interdiction of one-sixth of the world's annual production of ephedrine destined for the Amezcua Cartel in Mexico; Suo (2006), p.A12. Due to delays at the national level, many States with the greatest methamphetamine related problems enacted precursor pharmaceutical controls by 2005; similar, albeit it less restrictive national pharmaceutical restrictions were enacted later in 2006.

in Oregon after 2005 state level precursor controls took effect. Nationally, during the same time period the decline was 30%.[70]

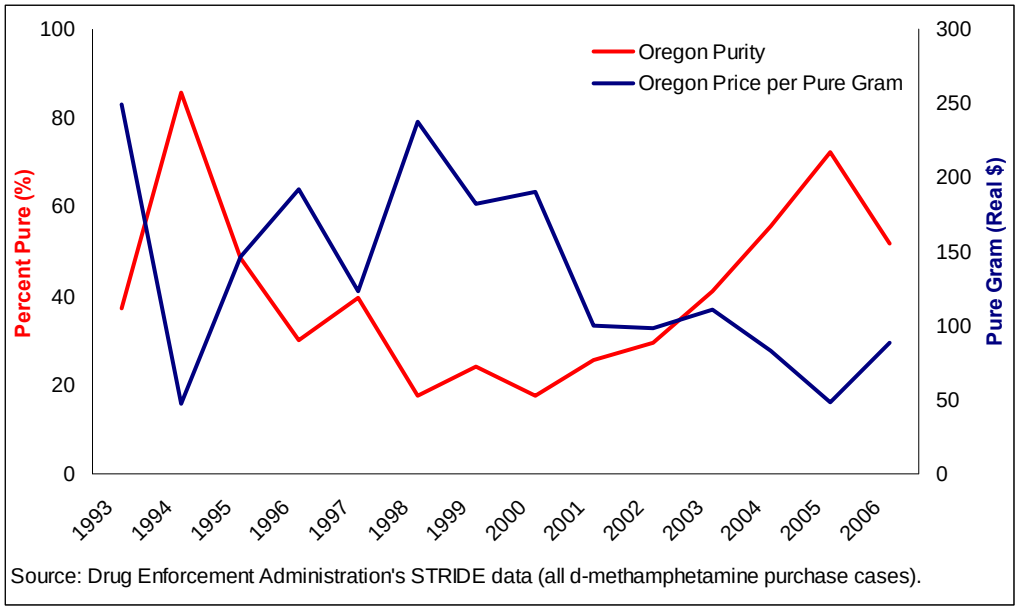

Figure 9. Oregon Purity & Price per Pure Gram of Methamphetamine

As the supply of methamphetamine decreased the corresponding market price per pure gram increases (Figure 9). Shortly thereafter, the destabilised markets partially rebounded to meet the existing demand as traffickers and manufacturers substituted or diverted new chemical precursors and new processes to increase illicit production.[71]

New Zealand's Market Outcome Indicators

Understanding New Zealand's historical and current methamphetamine market is difficult because few reliable market outcome indicators are available. Fortunately however, tests of illicit drug seizures made by the New Zealand Police and New Zealand Customs have been performed exclusively by the Institute of Environmental Science and Research (ESR) since 2001.[72] These tests were primarily performed in criminal drug cases and in cases where the seized amount was substantial. ESR provides both drug identification tests (for example cocaine, heroin, methamphetamine, etc.) and the more resource intensive purity tests (quality).

To date the ESR data reflect the only known and consistent outcome indicator of the changing nature of the New Zealand methamphetamine market purity since 2001. Unlike other sources of market data, these data do not reflect self-reports or anecdotes, they encompass a broader user base, and better reflect the various regions around the country. New Zealand's focus on supply-side interventions mean that if effective at stemming availability, changes in the methamphetamine market purity and price should be detectable historically.[73]

[70] Suo (2006), p.A1
[71] Cunningham & Lui (2003), p.1235; Reuter (2003), p.1179; Nice (2007a), p.5
[72] ESR has data from prior periods; unfortunately these are retained in an older data system which would have required significantly more resources to extract, see Nice (2007b), p.3
[73] UNODC (2007a), p.124; UNODC (2007b), p.402

3 CHANGES IN NEW ZEALAND'S MARKET OUTCOMES

Illicit drug testing data for all New Zealand methamphetamine cases were supplied by the Institute of Environmental Science and Research (ESR). The data included all tests resulting in positive methamphetamine identification since 2001. To date these data provide the only known and consistent indicator of the changing nature of methamphetamine purity over the last several years, and the only reliable indicator to assess the outcomes of the supply-side policy impacts to the methamphetamine markets.

While data such as these have advantages over anecdotal reports, they too are inherently limited due to collection and testing methodologies.[74] The most critical issue is the fact that samples tested for purity are not performed randomly or in all cases, and tend to under-represent simple drug possession cases. Additionally, while more than 7,600 drug identification tests were completed by ESR between 2001 and early 2007, only 2% received the more resource intensive purity tests.[75]

Analysis of the ESR data found that while the data reflected all levels of the drug market (e.g., trafficking, manufacture, possession for supply, distribution, and possession), they were more heavily focused on the source of the market (i.e., trafficking, manufacture, and possession for supply) rather than end-user possession. Drugs from the source of a distribution network typically represent higher purity levels than at the street distribution or personal use levels.[76] Also, while these data reflect samples seized from locations from around the country, there were more samples from Police Districts in the northernmost part of the country (46%) and from Customs (trafficking; 26%).

Unfortunately the ESR data were not integrated with the purchase price data, or data describing total amount seized by the New Zealand Police, or Customs. Therefore changes in price per pure gram are impossible to determine with the current data structure.[77] While all of these issues limit some of the conclusions that can be drawn, similar data with their inherent limitations are regularly used by policy-makers and researchers around the world to track illicit drug market outcomes.[78]

Testing Seized Methamphetamines

Customs typically interdicts methamphetamine and their precursors before they enter the country, while Police typically make seizures of drugs and precursors from the domestic market. Both types of seizures are sent to ESR for drug identification and in some cases purity testing.

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[74] For a full explanation of the limitations see ONDCP (2004b) and Caulkins (2007). For the full technical report, see Nice (2007b).

[75] Quantitative drug purity tests cost approximately $1100 each.

[76] Nice (2007b), pp.8-10

[77] Previous drug market research has shown inverse relationships between methamphetamine purity levels and price-per-pure gram, Nice (2007b). If a market is saturated and the drug is readily available, purity levels tend to be higher and price per pure gram tends to be lower.

[78] ONDCP (2004a); Caulkin (2007); Nice (2007b); UNDOC (2007a, 2007b). For example, United States DEA drug signature data typically represents federal level cases. The vast majority of drug transactions nationally which come to the attention of law enforcement do so at the local and state jurisdiction level.

Figure 10 shows the number of drug samples that tested positive for methamphetamine since 2001 and the number of unique seizures events from which the drug samples were taken. In 2006, there were 2,073 positive methamphetamine tests from 668 unique seizures. Both the number of seizures from which samples were taken, and the total number of samples tested, have steadily climbed in New Zealand since 2001. Unique seizure events follow the increase in the number of hard drug related apprehensions (c.f., Figure 6).

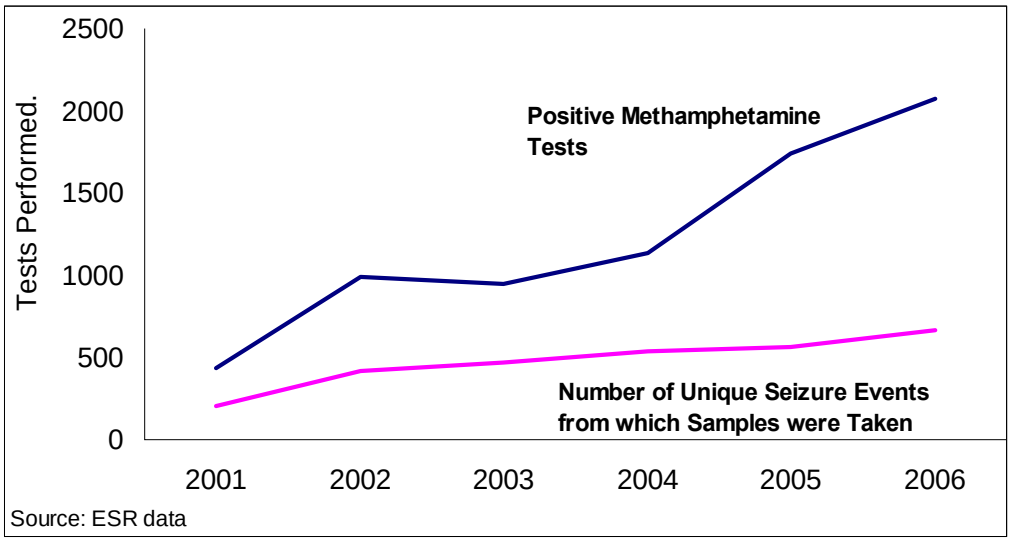

Figure 10. ESR Tests Performed and Number of Events From Which Samples Were Obtained

Changes in Methamphetamine Market Purity

Of the more than 7,600 tests ESR have performed since 2001, 171 were purity tests with an overall purity of 64%. To lend perspective to the methamphetamine purity discussion it is important to understand that the chemical structure of "pure" methamphetamine-hydrochloride is about 80% methamphetamine and 20% hydrochloride salt.

Based on the year the drugs were seized, methamphetamine purity increased considerably at first but has remained flat over the last few years (Figure 11). In 2001, methamphetamine purity was roughly 30% pure, rapidly increasing more than twofold at a peak of 75% pure in 2003. Since that time, overall market purity has remained stable in the low 70% range.[79] Decreases in market availability due to precursor chemical controls never materialized. Preliminary purity data from an ESR testing in mid-2007 suggests current overall market purity levels are similar to 2006.[80]

[79] A similar pattern based on smaller snapshot sample was noted in a previous ESR study; see Winchester (2004).

[80] At the time of the analysis (April 2007) only one test case was found for samples seized in 2007. An additional 32 samples were tested for purity in late May 2007. While these likely reflect seizures made in 2007, the supporting data were incomplete at the time of this report; see Nice (2007b).

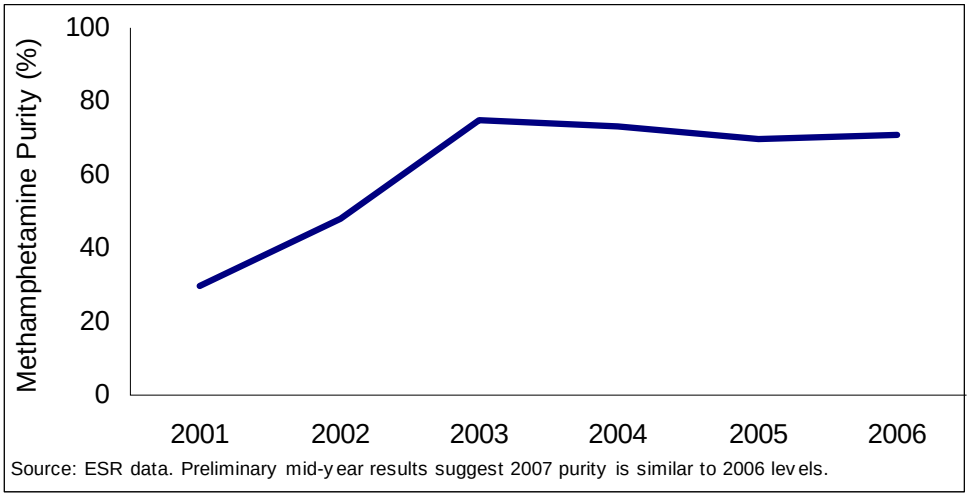

Figure 11. New Zealand Methamphetamine Market Purity

Based on research relating market purity and market price in the United States, it is likely that prices per pure gram in New Zealand declined initially - coinciding with increased purity - and have since remained reasonably stable since about 2003 (c.f., Figure 11).[81] This conclusion is supported by other recent research findings. For example, results from the most recent reports on the national household drug survey found little perceived change in the availability of amphetamines (Figure 12).[82] Additionally, the results of New Zealand's Illicit Drug Monitoring System (IDMS) found that in 2006 methamphetamine was readily available, there was little change in availability in the last six months, and the price was generally stable.[83]

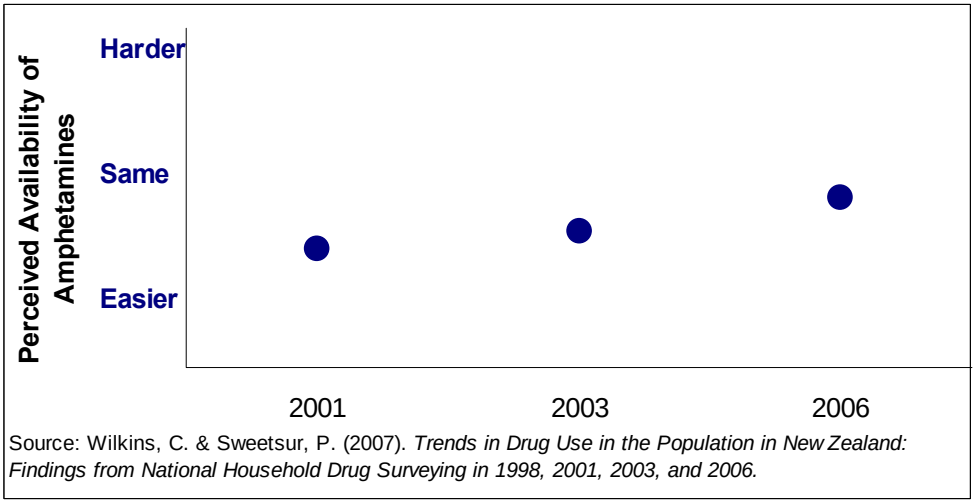

Figure 12. Perceptions of Amphetamine Availability

[81] Nice, (2007b), p.10; UNODC (2007c), p.158
[82] Wilkins & Sweetsur (2007). Amphetamine is a broad category that includes methamphetamines.
[83] Wilkins, Girling, & Sweetsur (2007). Researchers suggest that that crystal methamphetamine may have been somewhat more difficult to obtain after the large Customs interdiction (Operation Major) in May 2006 (p.4). Anecdotal reports from officers suggest that any change in price or availability due to this operation was very short lived.

Efficacy of Precursor Chemical Controls

The stability of the market since 2003 suggests a mature market with easy availability of methamphetamine, a conclusion that is supported by recent IDMS results.[84] The fact that, unlike the United States, no changes were noted in purity levels after various precursor chemical schemes were enacted suggests that those schemes did not effectively reduce the domestic drug production in New Zealand. For example, a recent report found that 65% of clandestine laboratories detected and dismantled in 2006 - where precursor chemicals could be identified - used domestically diverted pharmacy precursor chemicals (e.g., pills) for methamphetamine production.[85]

Some experts have questioned the efficacy of the country's current precursor chemical controls. Scepticism remains over implementation of the signed 2001 Memorandum of Understanding (MoU) with the New Zealand Chemical Industry Council, and the success of efforts with the pharmacy groups.[86] For example, not all of the bulk chemical companies were covered under the voluntary MoU. There were no monitoring requirements in the MoU language. Additionally, no national pharmacy group MoU was ever developed or signed by any parties. Instead, police in some districts had various discussions and informal agreements with some individual pharmacies to provide information on suspicious persons, as well as limiting stock containing pseudo-ephedrine.[87]

Recent research from the University of Auckland supports this conclusion. According to researchers, pharmacies assisted police by providing information about suspicious customers and logs of purchasers. Unfortunately, the data provided was not integrated or automated. Those familiar with this process found it impossible to monitor effectively due to inconsistent implementation (i.e., some pharmacies provided information, others did not); lack of infrastructure (i.e., paper systems that were not standardised); and restricted resources (i.e., too few staff to compile paper records, monitor and analyse, not enough police staff to respond to calls). There was a sense of growing frustration from both pharmacies and police about how this information was to be collected and used. Ultimately, those pharmacies that were reporting, quit regularly reporting.[88] These problems undermined the efficacy of a significant proportion of the overall precursor control strategy.

Many illicit drug manufacturers and trafficking organisations are sophisticated resourceful businesses. Responding to changes in the market, they continuously look for loopholes in precursor chemical regulations, alter production methods, and delivery systems in order to continue their illegal activities.[89] There continues to be a need and an opportunity for a mandated, comprehensive, and monitored precursor chemical control scheme within New Zealand.

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[84] Wilkins, Girling, & Sweetsur (2007). This is likely more true of the northern most part of the country. Nice (2007b).
[85] Newton (2007b), p.16
[86] A MoU was also developed for the pharmacy groups but never implemented nationally. Instead each Police District 'discussed' controls with various local pharmacy groups. These discussions were not uniformly approached or executed.
[87] Butler, Sheridan, & Kairuz (2007), p.491
[88] ibid., pp.493-494
[89] UNDCP (1996), p.37; Cunningham & Lui, (2004), p.1235; UNODC (2007c), p.126

4 ADDITIONAL SYSTEMS OBSERVATIONS

Examining the impacts of supply-side interventions must be done as a part of a greater system review. Drug purity is an important outcome indicator for the markets, but there are other underlying processes whose outcomes are as important. The following three opportunities for improvement have been identified: increasing successful drug prosecutions; providing legally mandated drug treatment sanctions for offenders; and investing in infrastructure and staff.

Drug Prosecutions

As was noted earlier, the number of drug apprehensions for hard drug offences has doubled since 2001 (c.f., Figure 6). However, an examination of the outcomes of those apprehensions suggests that the percentage of successful drug prosecutions have been in decline. It should be noted however, that the absolute number of convictions for hard drugs has been increasing since 2000, for example there were 617 case convictions in 2000 compared with 1,128 in 2005. Much of this increase can be attributed to the increased number of offences related to possession of non-cannabis drug manufacturing utensils and precursors.[90] According to a recent government report, prosecutions resulting in convictions in general have been declining somewhat over the last decade.[91] However, the report provided no suggestions as to the cause(s).

A close examination of cases shows that in 2000 hard drug prosecutions were successful 66% of the time.[92] By 2005 that rate dropped to 58% (Figure 13). This decline is more disturbing when examining the long-term hard drug prosecution trends. For example in 1990, 80% of hard drug cases resulted in a conviction.[93] Thus, even though recent investments designed to increase the likelihood of identifying and holding offenders accountable have been implemented (e.g., increased search and seizure powers, increased enforcement personnel, increased drug category offences, etc.) the outcomes of that work in terms of percentages have decreased for reasons currently unknown. It may be related to strained justice system capacity due to the increases in case volume, or related to the increased sanctions related to methamphetamine being rescheduled as a more serious offence, a combination thereof, or some other reasons.

[90] Soboleva, Kazakova, & Chong (2006), p.43
[91] ibid., p.15
[92] Hard drug includes the drugs other than cannabis and new drug categories. Methamphetamine as a specific drug category was not uniquely identified in the data until the 2003/ 2004 year. Hard drug includes all controlled substances other than cannabis and alcohol. This includes all amphetamine-type substances, heroin, cocaine, etc.
[93] This decline appears for all specific case types (e.g., distribution, possession, etc.).

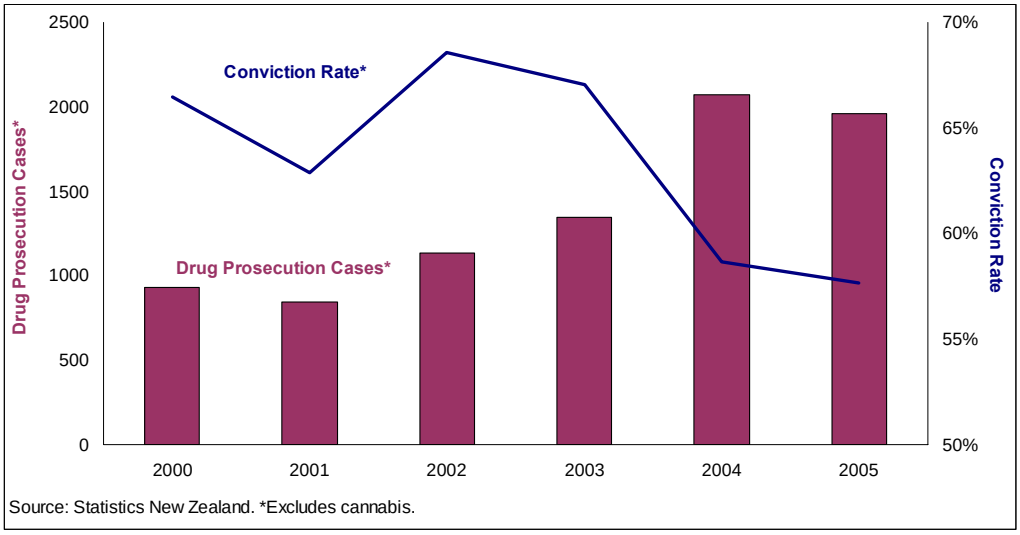

Figure 13. Hard Drug Cases and Conviction Rate

Mandated Drug Treatment

Although drug conviction rates are down, the number of offenders incarcerated for drugs offences has increased dramatically, as has the amount of time being served for a sentence.[94] Nearly all offenders will at some point return to their communities from which they were apprehended. For a drug using offender - whether it is a criminal who uses drugs or an addict who commits crimes to support their habit - incarceration alone is not an effective treatment option.[95]

At last count there were more than 1,620 drug courts in the United States; Oregon operates 28.[96] Currently New Zealand's criminal justice system provides for substance abuse treatment only when an offender is willing to participate. Because drug users often deny the extent of their drug addiction many, including those using methamphetamine, do not voluntarily enter drug treatment. For those whose addiction has risen to the level of involvement with the criminal justice system, legally mandated treatment is an untapped avenue, especially for high-risk or hard-to-reach offenders.[97]

Research has also shown that methamphetamine addiction is a treatable chronic and reoccurring illness with outcomes similar to cocaine addiction.[98] While some perceptions may exist that legally mandated drug treatment is not effective, research has found that mandated treatment appropriate to offender needs has been shown to be as effective as or better than voluntary treatment enrolment.[99] It has also been found to be cost-beneficial in a variety of different formats.

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[94] Soboleva, Kazakova, & Chong (2006), pp.80-85
[95] National Institute on Drug Abuse (2006), pp.13-15. Note many users are also dealers, selling drugs to supply their own addiction.
[96] Huddleston (2005), pp.3-5
[97] Canadian Centre on Substance Abuse (ND), p.1
[98] California Department of Alcohol and Drug Programs (2007), p.13; Wu & Nice (2005), p.18
[99] Caulkins (2000), p.91; National Institute on Drug Abuse (2006), pp.19-26; Reuter & Pollack (2006), p.10

For example, one Oregon drug diversion program for offenders found that each dollar invested in treatment provided savings from $2.50 to $10. Another study examining drug court outcomes found cost savings between $2,300 to $5,100 per participant for treating offenders instead of doing "business as usual." Most of the cost benefits are realised through reduced healthcare costs and reduced criminal activity (i.e., incarceration and victims costs) after drug treatment.[100]

Typical formats for mandated treatment are as a condition of pre-trial/bail release; diversionary treatment for lower-level or first time offenders; formally mandated drug treatment courts for a full range of offenders; or programmes based in prison with community transitions links.[101] Programmes need to be staffed by qualified professionals, culturally appropriate, include cognitive-behavioural treatment that addresses criminal thinking, and regular drug testing and supervision.[102] These programmes could initially be targeted and evaluated in areas of the country associated with the greatest need.[103]

Some researchers have identified that strong supply-side enforcement is most effective during the pre-emergent and initial epidemic stages of drug market growth.[104] This is the time when fledgling markets are most vulnerable because there are fewer users and suppliers. However, once endemic, supply-side interventions appear to be less effective in disrupting established markets than reducing the demand-side of the drug equation. Data from northern New Zealand suggests an established endemic market for methamphetamine since 2003, while most areas of the South Island might be better described as pre-emergent markets.[105]

Evidence has shown that effective supply-side interventions will often be short lived or geographically isolated unless action is also taken to reduce market demand.[106] While demand-side interventions are beyond the scope of this report, it is important to briefly note the enforcement supply-side and demand-side interventions nexus.

In endemic phases of drug markets, where the market is mature and resistant to traditional enforcement strategies, adapting the role of law enforcement personnel can improve demand reduction strategies. Front-line law enforcement personnel are often able to identify those offenders with drug problems. This identification can be leveraged to reduce demand. Examples successfully linking enforcement personnel to community-based treatment providers, as active participants in drug court programmes, and partnering with community supervision officers exist.[107] These are just three ways that enforcement officers can provide treatment leverage for drug using offenders. Adapting and expanding the role of existing law enforcement is an additional way to improve overall mandated drug treatment outcomes.

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[100] Finigan (1998), p.36; Carey & Finigan (2003), p.57
[101] A limited number of voluntary in-prison drug treatment programmes are currently available to inmates.
[102] Questions as to the training and qualifications of New Zealand's alcohol and drug treatment staff exist, see Webb (1999), p.439
[103] Nice (2007b), pp.7-8
[104] Tragler, Caulkins, & Feichtinger (1997), pp.41-56; Caulkins (2002), p.5; Caulkins (2003), p.20
[105] Nice (2007b), p.11. This is especially so in the far south.
[106] Roberts, Trace, & Klein (ND), p.10; Cunningham & Lui (2003), p.1235
[107] Caulkins (2000), pp.418-419; Caulkins (2002), pp.3-5; Reuter & Pollack (2006), p.12

Expanding Internal Capacity

The lack of a measurable drug monitoring infrastructure, readily available data, and actionable information for decision-makers contributed to the delay in identifying the depth, breadth and speed of the methamphetamine problem in New Zealand. Some of this was due to the lack of a drug monitoring system to detect emerging drug markets, and the necessary analytical staff across key agencies.

For example, while the first drug lab was discovered in 1996, the first joint agency action plan to respond to methamphetamines was not developed until 2003. Some have suggested that the lack of a monitoring system and of drug-specific performance measures delayed overall response. Quick detection and control of emerging drug markets is important to a cost-effective policy approach.[108]

The development of an early warning supply-side drug monitoring signature programme similar to that used in the United States, with a regular reporting mechanism, would help protect against future emerging drug problems.[109] Proper staffing would be an essential component to its success.

Emerging drug markets are intricate and rapidly evolving and interpretation would rely on recruiting and retaining consistent knowledgeable staff. Permanent internal analytical capacity with specific expertise would be best, versus temporarily contracted staff. Temporary contract staff, by their nature, represent higher turnover rates with a subsequent loss of specialised institutional knowledge. The investment in a drug signature monitoring system would only be as beneficial as the analysts with specific institutional knowledge who support its operation.

[108] Caulkins (2000), pp.430-431
[109] Nice (2007b), p.13

CONCLUSIONS

New Zealand's methamphetamine problem grew rapidly in part due to the lack of monitoring infrastructure, capacity to detect and respond to emerging drug threats, and the speed of the drug market development into the country. The delay in identifying and responding to the methamphetamine problem allowed the establishment of a now robust and thriving drug market with a high prevalence rate among its population.

Once recognised, the government responded with, among other strategies, heavy investments in supply-side interventions that were intended to diminish market availability. Investments in Police and Customs staffing and powers directly resulted in increased drug interdiction activities such as record methamphetamine seizures, increased clandestine drug laboratory detection and dismantling, record precursor chemical seizures, and a doubling of methamphetamine related apprehensions.

However, the examination of historical methamphetamine market outcome data suggests that, contrary to expectations, the supply-side intervention activities had no measurable impact upon the purity levels of the methamphetamine market. Thus, market availability of methamphetamine remained strong. It is still on-going as to how this relates to the number of users, the amount used or some combination thereof. Fortunately, New Zealand has several opportunities to respond.

> **Recommendation 1**
> Develop and adopt shared (e.g., Police, Customs, NDIB, etc.) national supply-side outcome measures such as the purity of drugs and the price per pure gram. Develop a mechanism to closely monitor and regularly report on the results.

Purity trend results - contrary to the experiences in the United States - suggest that the past precursor chemical controls activities have been last than effective at stemming domestic methamphetamine production.

> **Recommendation 2**
> Legislate strong universal precursor controls for the chemical and pharmaceutical industries similar to those enacted by the most highly methamphetamine impacted States in the United States. Include the ability of enforcement agencies to monitor those controls. Develop a mechanism to closely monitor and regularly report on the results.

Although officers are now better able to identify and apprehend those involved in the drug market through increased staffing and powers, drug offence categories, and staffing, the short-term outcomes - successful prosecutions as a percentage - have not kept pace. Conviction rates for drug related cases have declined to some of the lowest recorded levels although it is unclear as to its cause(s).

> **Recommendation 3**
> Analyse prosecution processes to determine the cause(s) of decreased conviction rates for hard drug cases. Provide necessary resources to address the cause(s) and develop a mechanism to closely monitor the results.

Once convicted of a crime, the government lacks the ability to legally mandate offenders into appropriate drug treatment. Convicted offenders only enter drug treatment if they are willing, even though many who are addicted deny the extent of their abuse.

> **Recommendation 4**
> Provide legally mandated drug treatment based on international best practices that addresses criminal thinking, is culturally specific, and is appropriate to offenders at various stages of their criminal careers. Consider a variety of options such as treatment as a condition of pre-trial/bail release, diversionary treatment, drug treatment courts, and in-prison drug treatment with aftercare links to the community. Assure compliance with ongoing supervision and regular drug testing. Develop a mechanism to closely monitor and regularly report on the results.

Finally, an outcome-based nationwide drug monitoring system staffed with professionals with institutional knowledge can provide the ability to respond quickly to emerging issues. Existing programmes give detailed information for specific user groups in certain areas of the country, however, they are unable to inform upon other parts of the country with emerging markets where pre-emptive law enforcement is most effective.

> **Recommendation 5**
> Integrate current drug activities and processes (i.e., ESR drug purity tests, Police controlled undercover purchases, and NDIB trend monitoring) to develop a formal and flexible drug signature monitoring programme for all illicit drugs (including analogues and isomers), in order to track market outcomes such as market stability, availability, purity, and price per pure gram across the country. Expand the number of purity tests performed and improve the methodology of those tests.[110] Develop these measures in concert with Recommendation 1. Develop a mechanism to closely monitor and regularly report on the results.

> **Recommendation 6**
> To increase reporting responsiveness and data utilisation consider staffing the monitoring system with permanent professionals, and develop their institutional knowledge.

The conclusions and recommendations herein will not be surprising to those intimately familiar with the drug market landscape of New Zealand. Some of the recommendations have been discussed in the past.[111] Much has already been done and many opportunities remain.

[110] For limitations regarding the current methodology and improvement recommendations see Nice (2007b), p.13
[111] Bellamy & McNab (2003), p12; Inter-Agency Committee on Drugs (1999), pp.81-82; Newton (2007a)

New Zealand has the opportunity to significantly diminish methamphetamine markets in the country. It has done so before with heroin in the past.[112] This is because the country enjoys several comparative advantages over the United States and Oregon. For example, because of its size it is better able to quickly respond to emerging issues when actionable information is available. The country is united under a "whole of government" approach with a single harm reduction framework that eliminates cross-purposes stemming from multiple jurisdictions and government entities. Because of its relative isolation it has a better chance to control border incursions and disrupt the limited number of transnational drug trafficking networks. And, because the people are not afraid of challenging convention through honest and open dialogue, New Zealand is better situated to experiment with new and pragmatic interventions.

Local synthetic drug production unconstrained by isolated source geography will continue to be the emerging drug threat globally. A most recent example of this is in the United States, where the government has now identified the re-emergence of fentanyl, a synthetic opiate more powerful than heroin and now associated with hundreds of overdoses.[113] Early identification and effective supply-side interventions are critical to prevent the establishment of an emerging market. Both policy-makers and enforcement officials must have the capability to quickly identify, respond to, and quantify their results before the next emerging drug market has a chance to take hold.

[112] Newbold (2004), p.58; Degenhardt, Reuter, Collins, & Hall (2005); Inter-Agency Committee on Drugs (1999), pp.81-82
[113] ONDCP (2007), p.32

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APPENDIX A: METHAMPHETAMINE ACTION PLAN 2003

PROPOSED ACTIONS AND RECOMMENDATIONS (pages 2-4)

Controlling supply

- Changes to the Misuse of Drugs Act 1975 to allow increased powers for Police and Customs in relation to precursor supply control, particularly powers for Customs to seize unlicensed imports of precursors and extend warrantless search and seizure powers to Police for precursor substances.

- Improved drug monitoring and surveillance systems, including more specific Police offence codes for methamphetamine offences, the establishment of a comprehensive illicit drug monitoring system, and exploring the potential to add New Zealand sites to the Drug Use Monitoring Australia (DUMA) programme of drug-testing people detained in police cells.

- Improved resourcing of Police and Customs drug enforcement services to provide greater intelligence and investigative capacity to respond to the current and future methamphetamine situation.

STOCKTAKE OF CURRENT ACTIVITY (pages 5-6)

Currently agencies are developing several methamphetamine related initiatives. This action plan is designed to integrate these initiatives and develop further initiatives on top of them.

Supply control

- The re-classification of methamphetamine as a Class A controlled drug will provide police with powers to search and seize without a warrant. Police will be able to be more responsive to methamphetamine related crimes.

- Police Drug Squads and Organised Crime Units, together with Customs' Drug Investigation Units; provide the main counter drug supply control capability. They have recognised methamphetamine as the major 'hard drug' problem facing New Zealand and have focussed attention on it as the key drug priority.

- A key capability has been the training of specialist investigators to deal with the potentially dangerous task of assisting ESR scientists in the investigation and dismantling of clandestine drug laboratories (clan labs), used to illicitly manufacture methamphetamine. These have been drawn from existing drug squad staff but the increase in the number of clan labs and suspected clan labs requires a greater capability than can be provided currently. A small number of staff to provide two dedicated clan lab teams (one based in Auckland, one in Wellington) has recently been agreed to.

- The National Drug Intelligence Bureau (NDIB) provides international liaison on all drugs law enforcement matters as well as information, strategic intelligence and operational support to Police and Customs in New Zealand.

- The NDIB has agreed a Memorandum of Understanding (MOU) with the New Zealand Chemical Industry Council in regard to monitoring the sale of precursor chemicals that can be used in the manufacture of methamphetamine.

- Police has also been involved in a number of initiatives at a District level with pharmacies with regard to the sale of methamphetamine precursor substances, such as cold and flu medicines containing psuedoephedrine. Protocols have been developed whereby pharmacy staff will contact Police about suspicious customers, and refusal to sell multiple packets of psuedoephedrine-bearing products to customers. Many pharmacists now refuse to sell multiple packets of these medicines to customers. Such protocols with pharmacies have been particularly successful, and it is planned that a national-level MOU with the representative bodies of the pharmacy sector will be developed.

- Police and Health are also currently assessing possible enhancement of Police search and seizure powers in relation to methamphetamine precursor substances, which are not subject to search and seizure by police officers without a warrant.

- Justice is currently reviewing the Proceeds of Crime Act 1991. This review is aimed at improving the effectiveness of this Act to confiscate proceeds of crime from convicted offenders. This will reduce the incentive for producing methamphetamine.

- Customs has upgraded the status of investigations into precursor chemicals to move them into their highest priority investigation case. This is intended to address the increasing problem of psuedoephedrine imports for domestic methamphetamine production.

- Customs is continually improving its procedures for dealing with psuedoephedrine and other prescription medicines, focussing on personal importations rather than commercial quantities. Following the completion of an Intelligence Assessment on the importation of psuedoephedrine in early 2003 procedures and policies for the handling of border detections of prescription medicines are being prepared by Customs.

- Customs is currently reviewing its overall approach to precursor control, and in particular the way in which New Zealand's obligations under Article 12 of the United Nations Convention against Illicit Traffic in Narcotic Drugs and Psychotropic Substances of 1988.

- Customs is a member of the Oceania Customs Organisation. This allows Customs to address the threat posed by precursors in a co-operative regional context. The Oceania Customs Organisation's current action plan includes a focus on enhanced precursor control.

- Customs will also be allocated additional funds in the next financial year with which to enhance its investigative abilities. This will provide 12 additional

investigators and 4 additional intelligence analysts to target higher echelon drug trafficking syndicates.

APPENDIX B: KEY DATES IN NEW ZEALAND DRUG POLICY

- 1975 Misuse of Drugs Act enacted
- 1996 New Zealand's first "official" methamphetamine laboratory detected
- 1998 National Drug Policy 1998-2003 launched
- 1998 New Zealand ratifies the Vienna Convention on drugs
- 2001 New Zealand Chemical Industry Council (NZCIC) sign Memorandum of Understanding; Pharmacy groups did not formally adopt
- 2003 New Zealand Methamphetamine Action Plan launched
- 2003 Misuse of Drugs (Order 2003)
    - Rescheduling of methamphetamine from Class B to Class A.
    - Formation of National Clandestine Laboratory Response Team (NCLRT)
    - National Manager position established
    - Two drug teams created - Auckland and Wellington
    - Diversion desks and coordinator positions created
    - Classification of ephedrine and pseudo-ephedrine as Class C Controlled drugs (effective 2004)
- 2004 New Zealand Police Response to Amphetamine Type Substances Plan
- 2005 Misuse of Drugs Amendment Act 2005
    - New offence provisions (importing/ exporting precursors)
    - Enhanced investigative powers (Police and Customs search and seizure expanded)
- 2006 New Zealand Police Illicit Drug Supply Reduction Strategy to 2010
- 2007 National Drug Policy 2007-2012 launched