

**Advice for Purchasing Strategy
on Public Health Issues:**

Reducing Drug Related Harm

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1. Summary

- The use of illicit drugs is not high in New Zealand and has not shown marked increases over the last decade.
- Illicit drug use is highest among those aged 18 to 24, predominantly males - the same group who consume the highest levels of alcohol and report multiple drug use.
- Cannabis is the main illicit drug used but is used infrequently by most of the population, with only a small percentage reporting current or regular use and associated drug-related problems.
- Cannabis is used disproportionately by young males, Maori and some rural communities, particularly in Northland and on the East Coast where cannabis is widely grown for economic purposes. It is these demographic areas which report most cannabis-related harm.
- Early onset of frequent/regular drug use is related to an increase in educational, mental health, employment and offending problems for young people.
- The most harm is related to multiple drug use. The most common combination of drugs involving an illicit drug is alcohol, tobacco and cannabis.
- Internationally, strategies to reduce drug-related harm range along a continuum of prohibition policies to harm minimisation tactics and include universal (whole population based), selective (targeting specific sub-groups) and indicated prevention (intervention for individuals and families) strategies.
- Prevention efforts over the last decade have indicated that no one programme can address all aspects of substance abuse, and that promising or effective approaches appear to be those which are collaborative, drawing on the experience and skills of different sectors of the community, are tailored to the needs of each group of people experiencing risk factors, and are designed with input from those groups.
- Despite a strong focus on school drug education programmes, there is little evidence to demonstrate their effectiveness in delaying the onset of drug use or reduction of use by young people.
- School prevention programmes that are holistic, realistic, targeted and linked to community prevention strategies appear to offer the most value.
- There is a diverse range of promising family programmes which could be dovetailed into public health programmes as part of an overall strategy.
- The use of appropriate media and targeted media strategies can raise awareness and increase communication, as a supplement to other community prevention strategies.
- Community action research suggests that programmes are most effective where there is strong support from a community to develop and implement its own programmes and appropriate strategies to meet its specific needs. This is particularly appropriate to Maori communities that wish to adopt a kaupapa Maori approach, consistent with Treaty of Waitangi principles.
- Community action programmes that include formative evaluation as a key component offer the most potential for sustainable initiatives to address drug-related problems, through ensuring critical feedback, documentation, provision of information and research findings

and networking opportunities, that together optimise programme development and transferability.

- The health sector is able to offer a number of significant interventions at primary, secondary and tertiary prevention levels through providing comprehensive range of programmes. These include community action programmes and specific harm reduction strategies such as working with clubs and dance events, working with pregnant drug users, the families of drug users and the provision of co-ordinated needle exchange programmes.
- There are a number of sectors involved in the illicit drugs area besides health, but intersectoral strategies at a national level have not been widely explored in the research literature. Several opportunities for collaboration in New Zealand have been identified in the development of overall drugs policy and drug policy work programme initiatives such as safe club, party and safe environmental practices. Further exploration of joint initiatives between agencies such as health, welfare, education, employment, police, justice, customs, and Maori, as part of a coordinated intersectoral approach to drug issues is warranted.

2. Recommendations

- That the HFA fund community programmes that address all substance use/abuse (tobacco, alcohol, cannabis and other drugs) in an integrated approach to reduce drug-related harm. These would focus on addressing drug norms, reducing access to drugs, and promoting alternative recreation and activities for young people.
- That the HFA fund long-term (at least 3-5 years duration) community action programmes that are designed, developed and delivered by communities to meet their own needs, but include formative evaluation components because of the cutting edge and complex nature of this work.
- That the HFA fund Maori controlled initiatives as consistent with Treaty of Waitangi obligations for self-determination.
- That the HFA extend, as well as continue, to fund Health-Promoting Schools approaches to enhance the new Health Education curriculum, and to cover other complementary strategies such as student assistance programmes and to ensure these are linked up with community initiatives.
- That the HFA ensure that there is a co-ordinated approach through local health promotion workers (who already work with licensees on alcohol host responsibility issues) to focus on clubs and events where dance parties are being held and to work with promoters on adopting Codes of Practice developed from the Ministry of Health's National Guidelines.
- That the HFA promote co-ordination of and fund coordinated drug-related resources where there are gaps or needs identified in appropriate information, such as Dance Party harm reduction information for consumers, or Te Reo Maori material and delivery mediums for Maori, such as murals and billboards and radio clips.
- That the HFA promote the national co-ordination of needle-exchange programmes and practices, with integration with treatment programmes into a one-stop-shop approach.
- That the HFA review the spread and scope of drug services (prevention and treatment) in line with the National Drug Policy Work Programme's identified needs, especially in the areas of youth, Maori and identified localities such as Northland and the East Coast. It is then recommended that the HFA funds the co-ordination, development and training required for services to meet these needs.
- That the HFA promote and support intersectoral collaboration on comprehensive initiatives at national and regional levels to reduce drug related harm.

3. Overview of Broad Health Determinants

Overview of Drug Use

Prior to the 1960s, there was minimal illicit drug use in New Zealand (Abel *et al.* 1992). The rise in drug use in the United States during the 1960s and 1970s flowed on to Australia and New Zealand, and there has been a further increase in illicit drug use in New Zealand in the last ten years. The level of illicit drug use in New Zealand is generally similar to that of Britain and the United States, with some differences in drug type, such as more LSD in New Zealand and less cocaine, amphetamines and heroin compared to the US, UK and Australia respectively (Field and Casswell 1999b). A 1998 household survey in Australia (Australian Institute of Health & Welfare, unpublished data) reported higher levels of drug use overall than New Zealand, while the Netherlands reported much lower use levels across all age groups (Alcohol & Public Health Research Unit, unpublished data).

Alcohol and tobacco are the most commonly used drugs in New Zealand. A 1998 survey of 5,475 New Zealanders aged between 15 and 45 found that cannabis (marijuana) was the third most popular drug. The survey found that there had been an increase from 43% of respondents who had 'ever tried marijuana' in 1990 to 52% in 1998. Use of cannabis in the last year increased from 18% to 21% of the sample, and current users increased from 13% to 17% of the metropolitan sample. There were slightly more heavier users in 1998 than in 1990, and more people had used it for the first time by age 16 (Field and Casswell 1999a).

Use of other illicit drugs had also increased. In 1990 only 4% of the sample had tried any other illicit drug, but this had doubled to 8% by 1998. More respondents reported increases in use of LSD, mushrooms, ecstasy, amphetamines, cocaine, opium poppies and solvents. The increase was spread across the age groups from 15 to 34 years and in both men and women (Field and Casswell 1999a).

Community concerns about drug use have changed little during the 1990s. In both 1990 and 1998 the drugs of most concern were alcohol, solvents and illegal drugs other than cannabis. Tobacco was the fourth most serious issue, followed by cannabis. However, while concern about other illegal drugs and solvents fell during the decade, cannabis had come to be perceived as a more serious problem (Field and Casswell 1999a).

Drug use is associated with the broad range of health concerns, outlined below for the illicit drugs which are of key significance in New Zealand.

Cannabis

Cannabis is mainly used in New Zealand in the form of marijuana (dried plant), hash oil and more recently, skunk, a type of cannabis often hydroponically grown (Ministry of Health 1996, Field and Casswell 1999b). The potency of the drug taken has a strong effect on people's experiences, with levels of the active ingredient, delta-9-tetrahydrocannabinol (THC) ranging from 0.5 percent to about 20 percent. Most of the cannabis that has been analysed in New Zealand over the last 20 years has ranged from 3.5 - 5%. The hydroponic samples of cannabis, which comprise a very small amount of the cannabis analysed, have recorded THC at levels of 5 - 9% (Ministry of Health 1996; Poulson pers. comm.). Effects can include relaxation, mood elevation, a sense of tranquillity, hilarity and mood swings (Kuhn *et al.* 1998). The health risks of cannabis were summarised by the Cannabis Working Party (Drugs Advisory Committee *et al.* 1995). Lethal overdose is almost impossible, but harmful health effects are associated with both the acute and chronic effects of cannabis use and (more likely) with frequent and heavy use (Kuhn *et al.* 1998).

In 1998, half of Field and Casswell's sample had tried marijuana, 20% had used it in the last year and 15% described themselves as current users. More men than women, and more 18-19 year olds were last year users and current users. Almost half of those who had tried it did

so by age 16. Although a large proportion of the survey sample had tried cannabis, only 3% could be considered heavy users (ten or more times in the last 30 days) (Field and Casswell 1999b).

Frequent marijuana users were also more likely to be heavy drinkers, and reported adverse effects related to their use of both, such as decreased energy and vitality, financial impact of use, and health effects (Field and Casswell 1999b). A recent Australian study of long-term cannabis users in a rural area found that the majority of regular cannabis users were also regular tobacco smokers and a substantial minority drank alcohol in hazardous and harmful amounts (Reilly *et al.* 1998).

In both the 1990 and 1998 surveys most people reported obtaining cannabis free, with less than 10% growing their own supply. Only 14% of current users reported keeping a supply on hand. Prices for cannabis were reported to be lower in 1998 than 1990. The prevalence of cannabis in New Zealand is similar to its prevalence in both Australia and the United States (Field and Casswell 1999b). Field and Casswell found that cannabis use was slightly more common in larger urban areas, particularly Auckland, than in the smaller urban or rural areas (Field and Casswell 1999a).

Respondents to Field and Casswell's survey saw regular cigarette smoking as more risky than regular cannabis smoking. Cannabis had a high rating of concern with 15-17 year olds, but was seen as less serious in older age groups (Field and Casswell 1999b). Australian studies have found that very few children see the use of cannabis as dangerous, except in the case of car accidents (Commonwealth Department of Human Services and Health 1994, Makkai and McAllister 1997).

Other drugs

In the 1998 survey, Field and Casswell (1999b) found that use of other illicit drugs was considerably lower than cannabis use, with 22% of the sample reporting that they had ever tried any other illicit drugs, and 9% having used them in the last 12 months. Again, use was higher in men and in 18-19 year olds.

The survey found that the most commonly used illicit drugs, other than cannabis, were hallucinogens, tried by 13% of the sample, and stimulants, tried by 9% of the sample. LSD, mushrooms and ecstasy were the most commonly used hallucinogenic drugs. They were used in the last 12 months by 4%, 2% and 1% of the sample respectively. Cocaine had been tried by 4% of respondents. Opiate use was relatively low, with just 1% using heroin, homebake, morphine or poppies in the last year. Only 1% had ever used a needle to inject drugs for recreational use. Kava, which is not illegal, had been tried by 8% of respondents and used in the last year by 3%. Use of solvents and non-prescription tranquillisers in the past year were reported by less than 1% of respondents (Field and Casswell 1999b).

LSD was the most commonly used hallucinogen in the 1998 survey, having been tried by 11% of men and 6% of women. The drug had been used in the previous year by 4% of respondents, and was currently used by 3%. Use in the last year was highest among men aged 18-24 years. The northern North Island region and large urban areas tended to show higher use of other drugs (Field and Casswell 1999a).

MDMA (methylenedioxyamphetamine) and MDA (methylenedioxyamphetamine), commonly known as Ecstasy, are enantiomers. They are popularly used at all-night dance parties (raves) and night clubs. They increase the heart rate, blood pressure and body temperature and produce a sense of energy and alertness and a warm feeling of empathy for other people (Kuhn *et al.* 1998).

The 1998 survey found that only 3% of the sample had tried Ecstasy and 1% had used in the last year and were currently using. The age groups with the highest level of use in the last year were men aged 18-19 and 20-24, at 5% and 4% respectively. Virtually no one over the age of 35 reported using ecstasy in the last year (Field and Casswell 1998b).

Multiple drug use

Multiple use of drugs, particularly in association with alcohol, can often cause the most serious harms (Kuhn *et al.* 1998). Respondents in the 1998 survey were more likely to have tried all three of alcohol, tobacco and cannabis, than any drug alone or combination of any other substances. Nine percent of the sample had tried three or more illicit drugs, and 3% had done so in the last year. Eight percent reported using alcohol, tobacco and cannabis in the past 12 months with a further 5% using alcohol, tobacco, cannabis and other drugs as well (Field and Casswell 1999b). This gives support to the comprehensive approach to drug use which has been adopted in New Zealand, rather than an exclusive focus on illicit drugs.

The extent of harm related specifically to illicit drug use on a population level is difficult to gauge because of lack of data about the extent and consequences of use, and because their use is often accompanied by alcohol and/or tobacco use (Black and Casswell 1993). In the 1998 national drug survey, more people overall reported problems with alcohol but this reflected the higher prevalence of alcohol use in the sample. Frequent users of cannabis were more likely to report high levels of alcohol consumption and to identify harmful effects related to their use of both alcohol and cannabis than infrequent consumers of alcohol and cannabis. Men were heavier users of cannabis and reported more harmful effects than women. Of the frequent cannabis users, 50% reported problems with energy and vitality, 34% with financial position, 28% with health, 21% with friendships and social life and 20% with outlook on life. One in four cannabis users felt they were smoking more cannabis than they were happy with and a small proportion felt they required help to cut down (Field and Casswell 1999b).

The lower prevalence of regular users of cannabis suggests that it does not pose the same level of public health problem as tobacco or alcohol. However, evidence of high prevalence in certain population subgroups, together with the associated health effects of cannabis use and other illicit drugs, indicates that cannabis is of public health significance (Ministry of Health 1998). Current data from the Clinical Information and Research Unit of the Auckland regional alcohol and drug service indicates that approximately one third of clients present with problems associated with frequent cannabis use, many recording high indices of severity on dependence scales. Sixty one percent of this group are males under 20 (Paton-Simpson 1999).

Population Issues

Young people

Use of cannabis and other illicit drugs is highest among those aged 18 to 24, predominantly males - the same group who consume the highest levels of alcohol.

During the next ten years there will be considerable increase in numbers in the under-25 age group, particularly Maori and Pacific Islands people. Those under 25 will also increase as a proportion of the total population. Profiles of population growth and distribution indicate that growth in youth populations is uneven between regions (Statistics NZ 1998a&b; Auckland City 1999). Although problems associated with young people's drinking and other drug use in public and private environments are of increasing concern, local planning and development frequently does not specifically address important issues impacting on youth drug use such as employment, socialising and recreational opportunities and appropriate youth amenities and health services. Harm associated with drug use can be expected to increase with youth population growth, unemployment and the increasing availability and 'normalisation' of popular recreational drugs.

The most popular illicit drug amongst young people is cannabis. The 1998 survey indicated that most people had tried or begun regular use of cannabis in their adolescent years, with males under 20 most likely to report that they were current cannabis users. This age group was also more likely than others to be heavier users of alcohol and to report much higher levels of alcohol and cannabis-related problems (Field and Casswell 1999b).

Adolescence is an important time for establishing life skills through social relationships and behaviours and educational achievement (Hall *et al.*, 1994). The socio-emotional transition from adolescence to adulthood is also characterised by experimentation, risk-taking, and lack of emotional stability (Labouvie, 1990).

There is a considerable body of research to suggest that if drugs such as tobacco, alcohol and cannabis are regularly used from an early age, they are associated with psycho-social developmental problems where young people move from experimental to frequent or heavy use (National Institute on Drug Abuse, 1997). An American study examining the impact of adolescent cigarette smoking on the occurrence of substance abuse disorders during young adulthood replicated earlier findings by Kandel *et al.* (1992) in reporting that early onset and daily smoking among adolescents significantly increased the probability of future substance use disorders during young adulthood. However, if adolescents had achieved smoking cessation for a one year period or more, they were at no more risk of developing substance abuse disorders than those who had never smoked (Lewinsohn *et al.* 1999). Heavy use of alcohol and drugs amongst adolescents has been noted as a marker for suicide, conduct disorder and other significant mental health problems (Drugs Advisory Committee, 1995).

Two major longitudinal studies of young people in New Zealand (Fergusson and Horwood, 1997; Poulton *et al.*, 1997) found that early onset of cannabis use often occurred in tandem with a train of social processes, including negative peer affiliations, reduced parental supervision and contact, and early school-leaving, which increased the chances of later substance abuse and/or mental health problems, offending and unemployment. These problems are thought to occur through two routes which are not mutually exclusive. Firstly, young people with pre-existing problems from disadvantaged or dysfunctional families are particularly vulnerable to drug-related harm. Secondly, a causal chain of events linking the context and environment of drug-using with a marginalised sub-culture leads some young people to be caught up in and encouraged to adopt other deviant and antisocial behaviours (Hall *et al.*, 1994; Fergusson and Horwood, 1997; WHO, 1997).

The Ministry of Health (1996), in a literature review entitled *Cannabis: The Public Health Issues*, identified young people, and in particular Maori young people, as a high risk group in New Zealand with regard to frequent cannabis use and cannabis-related harm. They cited numerous reports and studies listing poor school attendance and performance, mental health issues and a pattern of multiple substance abuse from adolescence to young adulthood (Ministry of Health, 1996).

Maori

There is little data available on patterns of drug use by ethnicity. Analysis of data from a Maori sample collected in 1998 for the national drug survey will be published in September 1999 (Dacey and Moewaka Barnes 1999). Te Runanga o te Rarawa (1995) studied cannabis use in Te Rarawa Rohe (Far North) and found a high level of cannabis use, with general acceptance and tolerance by most people. Users ranged from children to kaumatua and usage rates ranged widely from occasional to heavy, with awareness of the health effects of cannabis use reported as very limited and sometimes incorrect. They alluded to the particular drug sub-culture which has grown up in rural areas around the sharing of 'grow your own' cannabis which is freely available and in some areas has taken on spiritual significance aligned with the adoption of facets of the Rastafarian culture (Mataira 1993; Rameka 1998).

Considerable concern has been expressed about the perceived levels of use and detrimental impact of cannabis on Maori, including the social and cultural impacts of drug-related harm (Ngata 1993; Drugs Advisory Committee 1995; Rameka 1998). The dependence on a 'green economy' with cannabis grown as a cash crop to provide a primary or supplementary income for Maori in areas of high unemployment and low income has been well documented (Te Runanga o Te Rarawa 1995; Walker *et al.* 1998).

These findings are consistent with other international work which has sought to analyse the complex broader contextual environment of drug-related harm in poor communities. They

report on the corrosiveness of drug-related underground economies and the drug-related activities which paradoxically both alleviate and support the poverty of growing under-classes, often locking them into criminal lifestyles (Burgess 1997; Pearson 1995; White 1998).

The Health Select Committee Report on the Mental Health effects of Cannabis (1998) recognised the significance and impact of socio-economic issues on community drug use in its conclusions. It supported initiatives to reduce unemployment, improve standards of living and provide greater opportunities, particularly for those living in low socio-economic areas such as Northland and the East Coast.

4. Goals and Priorities

There is some variance in the international literature about the goal of drug abuse prevention. This has been polarised as abstinence versus harm minimisation approaches. Burgess (1997) suggests that although there is no moral or value consensus on which to base drug abuse prevention approaches, the potential for or degree of drug-related harm to society, as well as to individuals, needs to be evaluated, including the social and financial deprivation impact on poorer communities. The goal of prevention from an abstinence framework tends to adopt an overall 'zero drug use' approach 'to offer communities an opportunity to stop drug problems before they start, and provide hope for effecting community change to support healthy behaviours' (Center for Substance Abuse Prevention 1993).

The goals of harm minimisation/harm reduction range along a continuum, as illustrated by the goal and priorities of the New Zealand National Drug Policy (Ministry of Health 1998). Their goal is to 'minimise harm caused by illicit and other drug use to both individuals and the community'.

The Ministry of Health's priorities for action include:

- To enable New Zealanders to increase control over and improve their health by limiting the harms and hazards of drug use;
- To reduce the prevalence of cannabis use and use of other illicit drugs; and
- To reduce the health risks, crime and social disruption associated with the use of illicit drugs and other drugs which are used inappropriately.

There is a lack of consensus in the international literature about when illicit drug use becomes harmful or 'drug abuse'. The majority of people who try using a drug do not become chronic users (Field and Casswell 1999b). Because there is a lack of data on both use and use-related problems, these are often seen as identical. Thus strategies to prevent illicit drug related problems are often strategies to prevent illicit drug use (Morgan *et al.* 1988). Australian researchers, Midford *et al.* 1998, argue that, within a harm reduction framework, abstinence may be an appropriate strategy, but it is not an end in itself (Midford *et al.* 1998).

The Ministry of Health's 1996 Report on Cannabis claims that abstinence is a reasonable approach to employ with regard to those who have not used drugs, and to delay the onset of potential use, but it may not be so effective for those already using. Evidence that early initiation of drug use can lead to higher rates of later use and mental health and social problems (Fergusson and Horwood 1997) gives support to the promotion of abstinence to children and young people.

Advocates of harm reduction or harm minimisation approaches claim that the perspective of prevention is too narrow, ineffective, and does little to ensure safety if a person does choose to use drugs. They also acknowledged that a harm minimisation approach is more challenging, politically difficult and socially complex (Cachemaille 1998, Ali *et al.* 1992).

The National Drug Policy Work Programme (New Zealand) has been developed as a 'fiscally neutral' range of initiatives to 'confront the harm caused by illicit drug use' (Ministry of Health 1999). It has been particularly charged by the Ministerial Committee on Drug Policy, which oversees the National Drug Policy, to:

- address the cannabis problem in the Far North and on the East Coast of the North Island,
- prevent the formation of a hard drugs market in New Zealand (Ministry of Health 1999).

Its work programme initiatives include strategies in each of the five major future directions outlined in the National Drug Policy :

- information, research and evaluation

- health promotion
- assessment, advice and treatment services
- law enforcement
- policy and legislative development.

The public health/health promotion strategies are somewhat limited and so far have been confined to reviewing school drug education programmes, developing drug education guidelines for schools, guidelines for safe dance parties and a broad intention to tie in with other intersectoral initiatives, such as Strengthening Families and the Youth Suicide Strategy.

5. Literature Review on Programme Effectiveness

Three major schools of thinking and associated research about drug prevention have evolved, largely in the United States. These include the risk factor approach, which considers the primary risk and protective factors for the populations targeted by programmes and develops prevention approaches that will have the greatest effect on the most important risk and protective factors. It considers individual, peer group, family, school and community risk factors for substance abuse, methods for assessing risk and protective factors, knowledge of potential prevention strategies and the ability to make those strategies most effective for prevention programme participants (Kumpfer 1997). The approach tends to focus on strategies to target individuals who are at high risk.

Risk factors for harm which have been identified include:

- Individual and interpersonal factors, such as low self esteem, genetic susceptibility, sensation seeking, aggressiveness, conduct problems, shyness, rebelliousness, alienation, academic failure, and low commitment to school;
- Peer group factors, such as associating with others who use illegal drugs, rejection, friendship with other rejected children, and peer pressure to use substances (Kumpfer and Turner 1990,1991, Oetting and Beauvais 1986, Bailey *et al.* 1992);
- Family risk factors, such as alcoholic or drug using parents, perceived parent permissiveness, lack of consistent discipline, negative communication patterns, conflict, low bonding, stress and dysfunction, lack of extended family or support systems, emotionally disturbed parents, parental rejection, lack of adult supervision, lack of family rituals, physical and/or sexual abuse (Kumpfer and Alvarado 1995);
- School risk factors, such as lack of support for positive school values and attitudes, school dysfunction, high rates of substance abuse and pro-substance norms, low teacher and student morale, and academic failure (Downs and Rose 1991);
- Community risk factors, such as high crime rate, high population density, physical deterioration, norms supporting drug abuse, transient populations, lack of community activities or institutions, poverty and lack of employment opportunities, the youth culture, and easy availability of drugs (Hawkins *et al.* 1992).

The second major approach is the developmental approach. This emphasises the character and dynamics of interaction over time within the family during early childhood and within environments such as the school in the early years. It focuses on dimensions of lifestyle and behaviour as the loci for long term environmental and institutional change (Gerstein and Green, 1993).

The third major school of thought about prevention involves research on social influence. It is the most tightly based theoretically and is population based (Gerstein and Green, 1993). It is based on

- providing information on the negative social and short-term physiological consequences of drug use,
- providing information on the social influences to use drugs – peers, parents and mass media,
- correcting inflated perceptions of drug use prevalence,
- training, modelling, rehearsal and reinforcement of methods to resist the social influences to use drugs.

A fourth perspective attempts to encompass all the other three approaches. This is the community-specific prevention approach (Gerstein and Green, 1993).

Universal prevention strategies address the entire population with messages and programmes aimed at delaying the onset of substance abuse by providing the information and skills necessary to prevent the problem, without any prior screening for substance abuse risk. As they are designed to reach a very large audience, media and public awareness strategies can

be important. However, universal strategies can also be based in schools, such as the life skills training programme described by Botvin and colleagues (Botvin *et al.* 1990), in families, such as 'preparing for the drug free years' programme (Hawkins *et al.* 1987), or in communities, such as Midwestern Prevention Project (Pentz *et al.* 1990). Risk and resilience factors addressed by such programmes primarily reflect environmental influences such as community values, school support, economic and employment stability (Kumpfer 1997).

Selective prevention strategies also target specific subgroups that are believed to be at greater risk. The entire subgroup is targeted, regardless of the degree of risk of any individual within the group. Examples are skills training programmes for children of alcoholics, rites of passage programmes for at-risk males (Kumpfer 1997).

Indicated prevention strategies identify individuals who are exhibiting early signs of substance abuse and other problem behaviours, and targets them with special programmes. An example is a student assistance programme where teachers and counsellors refer students showing academic, behavioural and emotional problems to counselling groups and family focused programmes for the prevention of substance abuse (Szapocznik *et al.* 1989; Eggert *et al.* 1990; Gleason Milgram 1998).

Effectiveness of Strategies

Prevention efforts of the 1990s have demonstrated that no one programme will eliminate all substance abuse, and that effective approaches are tailored to the needs of each group of people experiencing risk factors and are designed with input from those groups (Kumpfer 1997). Decisions about how best to spend funding on drug education are complex, since much of the research evidence for the effectiveness of interventions has been grounded in an abstinence framework, so any drug use constitutes a programme failure. This framework is common in the USA, and in a review of evaluated prevention/education programmes for young people, 76% were American (Foxcroft *et al.* 1997). This approach may mean that significant programme effects are overlooked (Dielman 1994). Important cultural issues may also be missed or not accounted for.

Evidence on the cost-effectiveness or cost-benefit of specific drug-abuse prevention programmes have proven to be elusive. Only a handful of studies have been conducted over the past 20 years, providing suggestive evidence that exposure to drug abuse programmes could be justified based on cost-benefit or cost-effectiveness studies (Bukoski and Evans, 1998).

Strategies for School Education and Allied Programmes

Schools have been the main focus for youth drug education programmes, and are the major focus of the available literature. In the US and Australia, initiation into illicit drug use usually occurs after the age of 12 years and the number who have ever tried drugs then rises rapidly up to the age of 15 years and stabilises (White and Pitts 1998; Angelis 1998). New Zealand drug surveys have only collected data from people aged 15 and over. Schools offer an opportunity to reach the majority of young people, are places of learning, and have an obligation to create an environment that supports healthy growth and development. Furthermore, schools are affected by drug problems through truancy, absenteeism, classroom misconduct, vandalism, low academic performance and dropout rates (Manahi 1998).

Approaches taken in the United States, Britain, Australia and New Zealand have included information and education programmes, skills training, school management and policy changes, tutoring and mentoring programmes, and parent-peer groups.

The first generation of drug education programmes from the 1960s focused on information or education programmes. These relied on mass dissemination of information about the health consequences of substance abuse and included media campaigns, health education curricula and school assemblies. They increased students' knowledge of drugs, but may be most effective at deterring young people who are a low risk of substance initiation, and for providing information and referral resources to those young people living with substance abusers (Moskowitz 1983).

They have been criticised because:

- Knowledge alone may not change behaviour;
- Young people most at risk of substance abuse are school drop outs so will be missed by school-based programmes;
- The information source may not be credible;
- Most programmes are too short to affect behaviour change;
- Information may not match the local cultural and ethnic traditions; and
- Scare tactics have been demonstrated to be ineffective or counterproductive. Students learn better with a low fear appeal message and a credible communicator.

In the second wave, skills training programmes were designed to help students learn the appropriate skills to resist pressures to use drugs. These programmes are more intensive than information-only programmes. Examples include life skills training, peer and media-resistance training, peer leadership/helper programmes, children of substance abuse groups and parenting and family skills training classes (Kumpfer 1997). Peer resistance training programmes have been shown to delay the initiation of substance abuse (Dielman *et al.* 1989, Pentz *et al.* 1989).

Tutoring and mentoring programmes have also demonstrated some promise, if the mentoring relationship is sustained and non-prescriptive, and if the mentors/tutors and youths are carefully matched. Training and support of the mentors is a critical element to the success of a programme (Tierney *et al.* 1995). The SMARTmoves programme, for example, is a programme based on a peer resistance skills training model which has been used with some success in US public housing communities by Boys and Girls Clubs (Schinke *et al.* 1992).

Probably the best known American skills training programme is Project DARE (Drug Abuse Resistance Education), developed in 1983 by the Los Angeles Police Department and Los Angeles Unified School District and adopted by 50% of local school districts in America (Ennett *et al.* 1994). The DARE programme aims to achieve abstinence, with students reciting at the start of a class, 'I pledge to lead a drug-free life'. A review of 47 US drug education programmes by Dusenbury *et al.* (1997) found that DARE produced no long-term change in drug using behaviour. These findings have been questioned on the basis of small sample size, and some methodological issues (Gorman 1996) but were confirmed by Rosenbaum *et al.* (1994) who reported that students from suburban communities who were exposed to DARE had significantly higher drug use than comparable students who did not receive the DARE programme. The DARE programme operating in New Zealand has been developed independently of the US model and a version in te reo Maori is currently in production. However, it does share some similarities with its American counterparts, including a strong abstinence focus and delivery by police education officers.

Aggressive marketing of drug prevention programmes has led to a situation where well known 'branded' programmes are commonly used in schools despite evidence of effectiveness or proper evaluation. Meanwhile other lower profile drug prevention programmes that have been shown to be more effective are not widely used (Hansen *et al.* 1993). In Australia, the high profile, early intervention Life Education programme continues to receive extensive public funding, despite research evidence indicating no preventative effect, and an association with higher tobacco, alcohol and analgesic use at both the school and population levels in areas where Life Education is extensively used (Hawthorne 1996).

The third wave of programmes in the 1980s emphasised more comprehensive social competency programmes. These involve resistance training to media and peer persuasion, encourage the adoption of anti-drug use norms, correct misperceptions about the number of peers who use drugs, and teach communication skills, stress, anger and anxiety management skills, and skills to select non-drug-using friends (Pentz *et al.* 1989, Hansen and Graham 1991, Botvin *et al.* 1992).

A 1997 study by the California Department of Education collected data from 10,000 students over four years about their self-reported use of alcohol and other drugs, and their attitudes and beliefs towards drugs. This study did identify increased benefits for some students, including significantly lower lifetime use of drugs, more anti-drug attitudes, and better recognition of the consequences of drug use. They found that student outcomes were more positive in districts where comprehensive prevention programmes had been in place for some time with larger more extensive highly visible programme components. Those programmes targeted both the general student population and high-risk students and included student support services.

This study showed the most common barrier to achieving full implementation of prevention programmes to be lack of a full-time programme coordinator. A full time coordinator was associated with greater programme stability, more district-wide teacher training and a comprehensive programme. Fewer than half of all school districts formally evaluated their programmes (California Dept of Education 1998). Lack of time, support, training or motivation by teachers or counsellors led to variable and inconsistent programme delivery, and may have contributed to the lack of effect shown by many programmes (California Department of Education 1998, Silvia and Thorne 1997). It was concluded that the most effective approaches teach students how to resist and deal with powerful social influences for using drugs and alter the misperceptions of peer drug use, commonly called the social influence model. These approaches rely on interactive teaching methods, but teachers are frequently not trained or supported to use these methods (Ellickson 1997, Silvia and Thorne 1997).

'Student Assistance Programmes' (SAP), which have been steadily introduced into USA schools over the last decade, are regarded as an 'umbrella covering any and all activities that help schools deal with students presenting problems and particularly those issues which are related to the misuse and abuse of alcohol and/or other drugs' (Manahi 1998). The school has ownership of the programme and a representative school committee takes responsibility for implementation, operation and maintenance of school policies, staff training and the introduction of a range of appropriate skills based courses for referred students. An evaluation of 'Student Assistance Programmes' in three USA states indicated that SAPs play a significant role in helping students who are experiencing problems (alcohol, drug, family and school behaviour) and also positively impact on the school and community (Gleason Milgram 1998). The 'Student Assistance Programme' concept is currently being introduced into New Zealand by public health units and health promotion organisations in Palmerston North, Nelson and the Hokianga to provide a proactive and constructive alternative to present punitive disciplinary practices that are commonly used by many New Zealand schools to deal with alcohol and drug problems that arise. It is regarded as complimenting the Health Promoting Schools programme approach.

The Health Promoting School Programme which utilises schools as settings for health promotion (World Health Organisation, 1992) has now been adopted by many schools in Australia and New Zealand. While it does not directly address drug issues, it provides a framework for integrating positive health initiatives into the school environment and increasing community interaction (Williams *et al.*, 1996).

Consistent results over two decades of evaluation and review of school-based drug education indicate that drug education is largely ineffective in delaying or reducing drug use, with small effects produced by some drug prevention programmes (Gerstein and Green 1993, Hawthorne 1995, Erickson 1997, Samarasinghe 1997, Sloboda and David 1997). In 1986, Tobler published a meta-analysis of 143 US drug prevention programmes conducted between 1973 and 1984, concluding that programmes that consisted of information alone or of

personal development skills alone did not impact on subsequent drug use, and recommending that they be discontinued.

Peer-led programmes appeared to be most likely to lower drug use (Tobler 1986). Selected peer education and alternative programmes for high risk youth were singled out as having achieved some success in a literature review of school strategies, but concluded overall that the best opportunity for gains was through comprehensive community programmes (Board of Trustees 1991). A review of peer-led programmes by Bangert-Downs later found that peer education improved knowledge and attitudes but did not necessarily alter drug use (Bangert-Downs 1988 cited in Coggans *et al.* 1995). In 1991 Coggans (1995) analysed the reports of social skills programmes, with similar results. Gorman (1996) reviewed reports of social skills programmes and also found that these did not significantly reduce alcohol use or modify alcohol-related behaviours.

A meta-analysis of methodologically sound evaluations of US programmes directed at school-aged children, targeting primarily cannabis use, calculated that only 3.7% of young people who would use drugs delay their onset of use or are persuaded never to use drugs by these programmes. The evidence suggests that the best that can be achieved using currently evaluated school-based intervention strategies is a short-term delay in the onset of substance abuse by non-users, and a short-term reduction in the amount of use by some current users (White and Pitts 1998).

As noted earlier, much of the research evidence for the effectiveness of interventions is grounded in an abstinence framework, with any drug use constituting a programme failure. This may mean that important programme effects are overlooked (Dielman 1994). Studies which ask young people what they want from drug education programmes commonly show that they want more detailed and accurate information for informed choice (O'Connor *et al.* 1997). In particular, they want more information about the effects of legal and illegal drugs on the body, about the appearances of illegal drugs, and they want the information to be non-judgemental (Mundy 1997). Munro (1997) suggests that schools cannot be expected to reduce drug use, but rather they should attempt to ensure that young people understand the nature of psychoactive drugs and their effects, how drugs affect individuals and society, how problems can be avoided, and how drugs impact on the domain of public policy.

Australian prevalence data indicates that around a third of 15 year olds used cannabis in the past week (AGB McNair 1996). Midford *et al.* (1998) argue that as abstinence approaches have not been effective, a harm reduction approach should apply to cannabis education in schools to help students identify and reduce harmful effects of their cannabis use. However, they note that the low use of other illicit drugs by Australian adolescents, and the faddish and transitory nature of use of particular drugs, make it difficult to justify universal school-based programmes to address all drugs. The best use of funds and expertise, they suggest, would be in the development of interventions aimed at high-risk groups. There is very little direct research in this area to guide practice, but programmes should take into consideration prevalence data, the experience of students and the nature of local drug harms. They conclude that an informed debate about the nature and detail of implementing a harm reduction approach to illicit drugs in schools is needed within schools and throughout the community. This would need explicit support from the National Drug Policy, from education and health managers, and from skilled central and regionally based experts providing schools with critical assistance (Midford *et al.* 1998). Well-evaluated drug education programmes, which are grounded in the experiences of students and have a harm reduction basis need to be identified and disseminated, if effective. This literature search has been unable to locate such studies.

Munro (1997) contends that, just as we do not expect schools to reduce the road toll single handed, we should not expect the single strategy of school-based drug education to reduce drug use. A recent New Zealand study of strategies used by some schools to deal with students caught with cannabis pointed to the need for community and agency support for schools in dealing with what are essentially societal issues (Abel 1997). School education needs to be part of a complete strategy, that includes community-based interventions such as

interventions at sites where drugs are available. The experience of two decades demonstrates that experimentation with popular drugs is an entrenched behaviour in young people, not easily changed by school programmes. Research evidence suggests that community-plus-school programmes are likely to yield greater effects on the more serious levels of drug use, effects on parents as well as youth, and perhaps more durable effects than are currently obtainable from most school programmes alone (Pentz 1996; Kumpfer 1997).

The new Health and Physical Education curriculum (Ministry of Education 1999) recognises that health education programmes in schools need to be more than just a composite of information, values, skills, training and social competency training. There is considerable emphasis placed on strengthening links with the community both to address the consistency of messages with those received from the media and other community sources, and to provide support for school-based strategies.

Prevention Strategies with Families

As the primary socialising agent of the child, the family is an important context for prevention of drug abuse, and a focus for prevention programmes from infancy to adolescent years (Ashery *et al.* 1998). The risks associated with trying drugs and involvement with peers who use drugs has been demonstrated to be offset by protective family factors such as parent conventionality, strong parent-child attachment (Brook *et al.* 1990) and parental disapproval (Coombs *et al.* 1991).

The majority of family-focused prevention work in the literature is clinical. Kumpfer *et al.* (1996) suggests that family-focused programmes have been found to significantly reduce all the major risk domains and increase protective processes and benefit even 'hard core' problems in the family. Structured family therapy programmes have been shown to be effective and some researchers support their use as necessary components of any comprehensive prevention plan for substance abuse (Kaufman and Borders 1988, Kazdin 1993). Family skills training programmes have demonstrated efficacy in preventing initiation or escalation of drug use in the early and later teenage years (Etz *et al.* 1998). In these programmes the child and other family members participate in structured activities designed to modify interaction patterns. They have been shown to be effective in reducing individual and family risk factors for substance abuse (Kumpfer 1990, Kumpfer 1993, Kumpfer *et al.* 1996). These factors include depression, aggression, conduct disorders, poor family management, intentions to use tobacco and alcohol (DeMarsh and Kumpfer 1986), and school achievement and delinquency in pre-adolescents (Patterson *et al.* 1992). However, little evidence is available on universal programmes such as parent education programmes, parent involvement programmes, parent support groups and parent peer groups. One such programme available in New Zealand is the Gain family programme which has shown promising findings on uptake and usefulness so far (Winslade 1998).

One challenge that faces family-based prevention programmes is determining how to make contact with and engage hard-to-reach families. A number of new approaches have proved helpful. These include programmes that make contact with families through schools and then channel those families in need to more specific programmes (Dishion *et al.* 1998). Other programmes involve engaging methadone maintenance programme participants through their treatment centre, and designing specific engagement techniques appropriate to the families' needs (Santisteban *et al.* 1996; *et al.* 1990; Szapocznik 1996).

Recognition that the family is also embedded within a larger social context consisting of neighbourhood, school and communities of identity has also led to suggestions for programmes that would integrate these elements, such as supplementing parental monitoring and supervision through supervised recreation, mentoring and family-friendly policy changes (Biglan and Metzler 1998). The most consistently identified parenting practice influencing youth problem behaviour is monitoring (Biglan *et al.*; 1994, 1995, Dishion *et al.* 1996).

Media and communication strategies

Since the major determinants of health are in the social and physical environment, the power of the media can be used to address drug issues in the context of a forum for discussion and debate. The media can play an important role in creating awareness, increasing knowledge, stimulating interpersonal communication and recruiting individuals to participate in campaign activities

Media advocacy is an effective means of using local and national media to help shape public debates and to support the development of healthy public policies. Advocacy focuses on change in public opinion and policy, rather than directly on change in the behaviour of individuals. Examples include the tobacco control movement's actions to promote non-smoking in public places, and the provision of media awards to journalists who report public health issues effectively (Wallack *et al.* 1993).

Research on the effects of media campaigns on drug use and abuse indicates that media alone are much less effective than media messages employed in the context of a broad campaign that includes the use of interpersonal channels. When combined with other community prevention strategies, use of local community-based media campaigns, films, pamphlets, resource centres, radio and television public service announcements, health fairs, advertisements, hot lines and speakers' bureaus provide needed information and positively affect a community's social norms (Gerstein and Green 1993).

Mass media campaigns to prevent illicit drug use that have simplistic anti-drug messages ('Just Say NO') or use scare tactics or too much information (often inaccurate) have been found to be ineffective and possibly counterproductive (Miller and Ware 1989). At best, stand-alone mass media campaigns appear to reinforce the views of those already opposed to drug use, and at worst, to stimulate the interest in drugs of those who are at risk. There is a need for targeting or audience segmentation, and a strong need for formative research in message and campaign design (Gerstein and Green 1993).

The Internet also offers an opportunity to provide authoritative accurate information about drugs, drug use and drug issues. The information it provides can be useful, from fact finding to communicating with others across the country (Rivera and Erlich 1998). Electronic networking and websites can also be a valuable tool for community action on alcohol and drug issues (Conway *et al.* 1999; Stewart *et al.* 1993; Milio 1996).

Rogers and Storey (1987) have identified nine features of effective mass media campaigns against drug abuse:

- Widespread exposure to campaign messages is necessary,
- Interpersonal communication through peer networks is very important in leading to and maintaining behaviour changes,
- The perceived credibility of a communication source or channel enhances the effectiveness of a communication campaign,
- Formative evaluation can improve the effectiveness of campaigns by producing messages that are specific to the desired behaviour change,
- Campaign appeals that are socially distant from the audience member are not effective,
- Campaigns promoting prevention are less likely to be successful than those with immediate positive consequences,
- Audience segmentation strategies can improve campaign effectiveness by targeting specific messages to particular audiences
- Timelines and accessibility of media and interpersonal messages can contribute to a campaign's success.

Strategies for Community Action

Community can be defined by geographical area, racial/ethnic lines, religious affiliation, functional similarities or by self-selected reference group (Willmott 1989). Drug use programmes have focused primarily on shared geography as a primary distinguishing characteristic of a community. However, to deal effectively with complex long-term social issues such as drug abuse prevention, sustained involvement by broad segments of a geographic community appears to be necessary (Klitzner 1993, Wandersman and Goodman 1993). Community action aims to build community capacity to initiate, mobilise and sustain initiatives for long-term social and structural change (Bush 1997).

Community action approaches using a comprehensive range of health promoting strategies are becoming increasingly acknowledged and utilised as key public health initiatives to deal with alcohol and drug-related problems (Gerstein and Green 1993; Substance Abuse and Mental Health Services Administration 1997; Winick and Larson 1997; Casswell 1998). Two international reviews of drug prevention and health promotion programmes (Samarasinghe 1997; Gillies 1997) concluded that successful community action seems to be effective simply because the community mobilises itself to address a felt need. Ownership and planning by the community itself, wide participation, democratic decision-making and sustained action are important factors.

Research studies have reported this approach as particularly useful for addressing youth substance abuse through comprehensive programme strategies that included school education, parent and peer education and support initiatives, developing drug-free activities, environmental improvements, alcohol regulatory policies and increased law enforcement (Harachi et al, 1996; Wagenaar & Perry 1992). There is no clear evidence that any one of these strategies by itself has a lasting impact, but there is increasing evidence that combinations of action, reflecting local need and perceptions, and which the community feels it owns or can influence, do achieve significant gains for substance misuse prevention (Samarasinghe 1997).

A New Hampshire community study which compared a drug prevention school curriculum with the same curriculum plus comprehensive community activities involving parent and other adults, and a control community, found that the comprehensive approach reduced regular cannabis use in a sample of 9-14 year old students by over 50%. Findings also indicated that strategies to prevent cannabis use needed to take into account the profile of the cannabis-using child, the adult community's attitudes and beliefs about drugs, and the access of drug sellers and users to children (Stevens *et al.* 1996).

Some American drug prevention programmes such as 'Fighting Back' have harnessed neighbourhood action groups, developing community action and self reliance skills in reclaiming their neighbourhood streets as drug-free zones (Chavis 1993). Labonte (1998) suggests that substance abuse prevention programmes based on community development dynamics are successful in receiving broad support from many communities and have particularly good uptake by poorer communities because they increase understanding of socio-economic issues and mobilise action across a wide range of community concerns and issues. The practical, power-sharing approach offered through community action is particularly useful and attractive to marginalised communities who frequently experience limited access to resources and decision-making processes (Labonte 1998; Israel *et al.* 1998).

Rigorous outcome evaluation on community mobilisation effectiveness to reduce drug problems is scant. There have been some large demonstration projects in the alcohol field, such as the Community Alcohol Project (Duignan and Casswell 1992) Surfers Paradise Project (McIlwain 1996) and Community Prevention Trial to Reduce Alcohol-Involved Trauma (Holder *et al.* 1997), indicating effectiveness on measures to reduce harm. These projects all worked collaboratively across sectors, focusing on a range of environmental factors, and reported changes in increasing appropriate alcohol-related behaviour, more emphasis on alcohol management policy issues and increased awareness of moderation issues through media advocacy. Some rigorous multi-year, multimillion dollar evaluations of community drug prevention programmes Some American drug prevention programmes such as 'Fighting Back' have harnessed neighbourhood action groups, developing community action and self reliance skills in reclaiming their neighbourhood streets as drug-free zones (Chavis 1993). Labonte (1998) suggests that substance abuse prevention programmes based on community development dynamics are successful in receiving broad support from many communities and have particularly good uptake by poorer communities because they increase understanding of socio-economic issues and mobilise action across a wide range of community concerns and issues. The practical, power-sharing approach offered through community action is particularly useful and attractive to marginalised communities who frequently experience limited access to resources and decision-making processes (Labonte 1998; Israel *et al.* 1998).

are currently being conducted in the United States. The complex nature of the issues and short-term contractual nature of most community action projects attempting to address drug-related harm does not lend itself to results in the short term. Most projects are oriented towards sustainability of processes, describing factors which keep community mobilisation programmes functioning smoothly, rather than describing outcomes (Substance Abuse and Mental Health Services Administration 1997).

The available literature on community action approaches does, however, suggest that there are general public health gains to be made by increasing community potential to address alcohol and drug issues in a sustained collaborative way through alliances and coalition building using multiple strategies. Community action programmes can increase knowledge, share information and develop skills and experience to address local risk factors and improve the school, family and community environments overall (Bush 1997, Giesbrecht *et al.* 1990, Greenfield and Zimmerman 1993, Winick and Larson 1997, Holder *et al.* 1997).

One review of successful community initiatives (Substance Abuse and Mental Health Services Administration 1997) described three interrelated processes as necessary for effective community mobilisation projects:

- A heightened sense of community. This entails a sense of membership or belonging, mutual importance to and concern for each other, common beliefs, shared values and emotional ties, periodic meetings and mutual responsibility for sustaining or enhancing the quality of interrelationships.
- Effective mobilisation. This requires sustained leadership, clear guidelines, procedures, ground rules and role definitions for participation, rewards and incentives, internal and external communication (including media coverage), community organisational know how, and behind-the-scenes support.

- Readiness for moving the community to action and desired outcomes. This requires clarity of goals, a practical and flexible action plan, capability and resources, community participation and control, passion for immediate action and a high-performance team.

Formative evaluation

Formative evaluation to improve the nexus between research and public health practice and to develop effective health promotion practice has been demonstrated as playing an important role in many community action projects on alcohol and drugs (Stewart *et al.* 1993b, Duignan *et al.* 1993; Duignan and Casswell 1992; Conway *et al.* 1999). Community-based researchers such as formative evaluators can also play a role in integrating research and practice, to aid community and social change by brokering resources and advocacy opportunities that communities may not otherwise have access to (Israel 1998).

Community action research is based on building partnerships with communities characterised by mutual respect of the different resource the community and the research partners bring to public health enhancement. Objectives are grounded in research based knowledge, and the strategies and activities used to achieve these objectives are grounded in the community's local knowledge and experience (Conway *et al.* 1999). Formative evaluation is designed to constructively modify and improve a programme, project or activity during its planning and implementation stages, so that it has a better chance of achieving its objectives (Rossi and Freeman 1989; McClintock, 1986). The role of the formative evaluator encompasses that of educator, consultant, change agent and critical friend, requiring the evaluator to work closely with project workers (McClintock, 1986; Fitzpatrick, 1988). It involves collecting and feeding back relevant information to assist programme planning, implementation and ongoing development, ensuring that strategies and activities are culturally viable and well grounded in evidence-based practice as well as documenting and assessing project activities for impact.

New Zealand community action projects

In New Zealand, there has been a developing research base of community action research programmes addressing alcohol and drug issues, since the original ground-breaking Community Action Project (Duignan and Casswell 1992). Projects such as the Liquor Liaison Project, the Maori Drink-Drive Project, the Rural Drink-Drive Project, the Youth and Alcohol Project (YAP) and the Community Action on Youth and Drugs (CAYAD) have all developed successful strategies in addressing their respective issues and documented positive impacts within their communities.

These four projects focused exclusively on alcohol issues and worked intersectorally on structural, environmental and climate-setting change with key groups such as health, local Council, police and community stakeholders.

The Liquor Licensing Project initiated and helped implement intersectoral co-operation on liquor licence reporting procedures through the establishment of liquor liaison groups and the monitoring (last drink surveys) of licensed premises, that now occurs in most licensing districts (Stewart *et al.* 1997, 1993).

The Maori Drink-Drive Project developed a media strategy, which included culturally appropriate messages in strategic locations on billboards and buses and successfully challenged the liquor and advertising industries on the use of the term 'Mana' in liquor advertising. It also promoted Manaaki tangata (host responsibility), social events including marae-focused awareness and support programmes (Stanley and Casswell 1996; Moewaka Barnes *et al.* 1999).

The Rural Drink-Drive Project developed a rapid response drink-drive data collection, analysis and feedback to those involved in the liquor licensing process, and media as well as the hospitality industry. Another important initiative arising from this was the Waka Taua programme which addressed Maori drink-drive issues through a series of waka training hui at Tainui marae, using the waka as a vehicle to symbolise kawa for preparation of safety on the

water and on the road (Stewart and Conway 1998). This project was initiated because of a high alcohol related road toll in this region. Over the duration of the project the alcohol related road toll dropped significantly.

The Youth and Alcohol Project addressed alcohol-related harm among young people through identifying opportunities for local action, such as working with youth organising after-ball parties, running Host Responsibility Roadshows, encouraging enforcement of the minimum drinking age law and the adoption of policy on alcohol management by schools, tertiary education institutions, clubs and sports teams (Stewart 1999). A feature of this project and the CAYAD project has been the development of a closed forum website, managed by the formative evaluators, to facilitate contact and feedback between project workers in different parts of the country. This has been an important communication tool for sharing ideas, news, reporting and developing strategies (Stewart 1999; Conway *et al.*, 1999).

The CAYAD project, currently in progress, is a two-and-a-half year community action approach project with a focus on addressing drug-related harm to youth. It operates in six rural, urban and provincial localities, most of which have high youth and Maori populations and high unemployment. Five of the six community organisations involved are being funded by a Ministry of Education/ALAC joint venture, with the sixth funded by the Health Funding Authority. The project involves both schools, local organisations and young people in planning, priority-setting and developing a range of culturally appropriate activities and resources to address drug-related harm in their locality (Conway *et al.* 1999; Tunks and Conway 1998).

The CAYAD objectives and strategies aim to:

- Increase informed discussion and debate (through community consultation hui, development of local media advocacy, as well as advocacy on national alcohol and drug issues such as the national drug policy work programme)
- Promote, implement and support policies and safe behaviours (through encouraging clubs and marae to formulate manaaki tangata policies and practices, support for youth organised recreational events)
- Identify 'best practice' for addressing the needs of schools, young people and whanau. (through developing proactive policies and practices that build on the new school health education curriculum using teacher training, student assistance programmes, peer support/youth leadership approaches and whanau and hapu education and support programmes)
- Build alliances between organisations and agencies, (through collaboration on health, recreation and employment initiatives)
- Develop appropriate local resources and support young people's voices and messages on reducing alcohol and other drug related harm (through murals, poster competitions, waiata, safe party pamphlets) (Conway *et al.* 1999).

Maori community action approaches

There is little documentation of Maori community based drug prevention strategies. Te Runanga o Te Rarawa and other researchers have argued the need for New Zealand drug education programmes to be well-coordinated and community driven, bicultural, based on the principles of community development, tikanga Maori and Treaty of Waitangi principles such as tino rangatiratanga (Hannafin 1989, Mataira 1993, Ngata 1993, Drugs Advisory Committee 1995, Te Runanga o Te Rarawa 1995, Ministry of Health 1996). Programmes which are based on Maori social structures, delivery systems, cultural context and controlled and delivered by Maori are more likely to contribute to Maori development goals (Durie, 1993; Forster and Ratima 1997; Moewaka Barnes and Tunks, 1998).

Both the Maori Drink Drive Project and the CAYAD project have had a strong kaupapa Maori focus, with local Maori health providers providing community project bases and reflecting strongly, the Maori paradigm in which they operate. Many project activities have been grounded in tikanga and te reo, enabling the communities acknowledgement of Maori world views. In both projects these strategies were shown to have successfully reached

communities, groups and individuals who were at risk and were not responsive to mainstream programmes (Moewaka Barnes *et al.* 1996; Stanley *et al.* 1996; Conway *et al.* 1999). The strategies developed reflect a grounding in local Maori communities.

Additional community action activities

Other innovative community activities that might be included as part of a community action programme are suggested by Samrasinge's (1997) international review.

Community organisations or schools may sponsor recreational, cultural and educational activities to provide young people at risk for drug abuse with alternatives that are incompatible with substance abuse. Because research supports a link between thrill seeking and substance abuse (Hawkins *et al.*, 1992), many alternative programmes involve experiential educational activities such as wilderness experiences, rope course, mountain climbing, rappelling and rafting. The Northland Wilderness Experience is a New Zealand community youth project which has adopted this model (O'Brien 1998).

Rites of passage programmes focus on skills development through strategies designed to build resiliency. They include group discussions or skills training to encourage the development of responsibility in young people as members of the adult community.

A community based intervention can mobilise people, especially young people, against the availability of drugs in their community. Communities may be guided to recognise how easily drugs can be found in their locality and to examine whether they are happy with this situation. The local community can then devise what steps they wish to take about the situation.

Programmes may also focus on community service, such as removing graffiti from public buildings and developing community murals, building homes and volunteering.

Interventions to combat normative beliefs about the extent of drug use may include group discussions and other community efforts that revise exaggerated estimates of numbers using a given drug. This can include using printed and other media to question other beliefs about drug use.

Programmes may aim to reduce the attractiveness and the symbolic values attached to drug use. People can become engaged in a process whereby they realise the glamorised image of drug use and how this is fostered through the media and personal conversations. Young people are challenged to overturn existing social perception. This is a new approach, but early indicators are promising (Fekjaer 1992).

Interventions may challenge perceptions of pleasure from drug use. People are engaged in discussion on what they think the effects of a drug are, and encouraged to examine the validity of their reasons. Over a period of time, they then re-examine the original assertion and recognise that their own experience is often coloured by expectation and social teaching. The goals of the programme are to help people recognise how they contribute to creating a picture of drug effects far more wonderful than the actual experience (even if they have never used the substance in question) and, secondly, to help those who do not particularly enjoy a drug to recognise that their experience is valid and need not be suppressed. Samarasinghe (1997) believes this approach offers scope for an important contribution of fundamental to drug prevention since it is challenging and engaging to participants, and can be evaluated. She reports that it is yielding some promising early results.

Strategies for the health sector

The goal of primary prevention is to protect individuals who have not begun to use substances, thereby decreasing the incidence of new users. The goal of secondary prevention is to intervene with people in the early stages of use to reduce and/or eliminate substance abuse. Tertiary prevention aims to end substance dependency and addiction and/or ameliorate the negative effects of substance abuse through treatment and rehabilitation (National Institute of Drug Abuse 1997).

As well as involvement in primary prevention strategies, described above, the health sector plays a major role in secondary and tertiary prevention strategies. Early intervention and treatment may be carried out by GPs, health centres, drug agencies, residential programmes in hospitals or therapeutic communities. Self help groups of peers of users or ex-users offer mutual support. Treatments range from detoxification, counselling, psychotherapies, behavioural therapies, stress management, hypnosis, meditation, relaxation training. Some treatments provide for a phased reduction of dose until cessation, or the provision of substitute drugs until the person is ready or able to cease. It is usual for a person trying to stop using a drug to relapse on a number of occasions before succeeding permanently (Australian Drug Foundation 1998).

In Australia there has been a proliferation of 'quitting cannabis' treatment programmes for long term cannabis users. Hall (1995) estimated that about 9% of all cannabis users and about 33% to 50% of daily users had criteria for dependence at some point. After treatment using either brief intervention or psychotherapy models, with a goal of abstinence and improved psychological functioning, the brief intervention abstinence level was 20%. Clients continued to have mild to moderate depression at 12 months. The psychotherapy abstinence level was 40% with clients being asymptomatic for depression at 12 months.

Other studies of training in relapse prevention skills for dependent users of cannabis, cocaine, amphetamines and opiates have also showed initial benefits, but these dissipated over the course of a year (Hawkins *et al.* 1989).

Harm reduction health programmes offered to pregnant drug users show some degree of promise. In one US self-paced programme, young, black, pregnant women worked through self-help packages, including activity based work at their own pace. The evaluation claimed a high degree of effectiveness in reducing cannabis use (Sarvela 1993). Another intervention directed towards pregnant injecting drug users was effective in reducing self-reported sharing of injecting equipment at nine month follow up, although it had no impact on opiate use, use of other drugs or frequency of injecting (O'Neill *et al.* 1996).

Co-ordinated needle and syringe programmes and methadone treatment services have also been effective in reducing the spread of hepatitis C, HIV, and other blood-borne diseases through the community (Ali *et al.* 1992). Wodak (1994) attributes the low prevalence of HIV infection among injecting drug users in Australia (less than 5%) to the early and vigorous introduction of these services.

A large number of written and oral submissions were made in the Ministry of Health's National Drug Policy Work Programme consultation process in 1998. Community services, drug prevention and treatment services in New Zealand all argued for the need to address specific gaps in services and provide community-driven programmes in key localities affected by drug problems. They also supported additional resources for drug prevention and treatment services specifically for young people and Maori, improved training for staff in the health sector, and better co-ordination between mental health services and drug and alcohol services (Ministry of Health 1999).

Strategies for other sectors

Demand reduction strategies are designed to reduce the demand for illegal drugs and include prevention and treatment (Kumpfer 1997). Supply reduction strategies to reduce the availability of drugs focus on structural measures, such as legislation and its enforcement. Examples include destruction of drug crops, confiscation of drug shipments, and criminal penalties for drug use and dealing (Kumpfer 1997). Key organisations in the enforcement of legislation governing illicit drugs, particularly the Misuse of Drugs Act, 1975 and subsequent amendments, are the Health, Police, Customs and Justice Ministries. Also involved are the Ministry of Foreign Affairs and Trade and national drugs intelligence services.

Cook (1991) advocates for increased co-operation among Pacific regions to address the issues of hard drug trafficking. She comments on the ignorance of Pacific Islanders of the difference between various drugs, and the lack of centralised bodies responsible for drug education.

There is no unequivocal evidence to show whether or not the restriction in supply through prohibition legislation prevents the initiation of drug use or encourages users to reduce their intake or hinders their seeking assistance for drug-related problems. Patterns of drug use and problems, along with drug laws and application of regulatory policies, are often peculiar to the particular context of different countries. Prohibition legislation in New Zealand has not prevented cannabis use and cultivation; on the other hand, prohibition legislation combined with the geographic isolation of and an effective customs service appears to be responsible for low importation of other illicit drugs. Maintenance of customs services and close co-operation between enforcement agencies is vital to ensure this continues.

However, supply strategies have been supported by alcohol research findings which have shown that by decreasing availability, a reduction in consumption has occurred which has in turn resulted in fewer alcohol-related problems (Edwards *et al.* 1994). In Sweden, there is evidence to suggest that easier access to amphetamines has resulted in increased use-related problems (Saunders 1990). Overseas studies have found that increased consumption has not occurred in those countries where cannabis use has been decriminalised (Abel 1992, Christie 1991, Cohen 1990).

The Health Select Committee Report (1998) on the Inquiry into the Mental Health effects of Cannabis supported strengthening links between key health, welfare, employment and crime prevention sectors with intersectoral initiatives such as the Community Employment Group, Strengthening Families Strategy, Youth Suicide Prevention Strategy and Safer Community Councils (Ministry of Health: National Drug Policy Work Programme 1999).

An example from Australia of an intersectoral intervention is the recent release of national protocols and an action plan for conducting safer dance parties by Police and state Health Ministers. (This has similarities with New Zealand's 'host responsibility' strategies with regard to alcohol.) It arose from concern about the range of potential harms and problems associated in the running of dance parties (*Herald Sun* 20.11.1998). The plan includes patrolling carparks, toilets and streets; ensuring adequate water supplies and cold running water in toilets to prevent dehydration, providing entertainment other than dancing (such as virtual reality games, the Internet, arcade games and areas set aside for socialising), setting up a Rave Right hotline, health promotion messages on postcards, posters and any pre-event publicity, hiring accredited first aid workers, discouraging high risk behaviour such as dancing in fire exits, controlling sound, strobe and smoke machines so they operate within statutory levels, and setting up 'chill out' rooms.

Guidelines for dance parties and events have recently been undertaken as part of the Drug Policy Work Programme (MoH 1998) which identified a gap in this area. They aim to focus on Codes of Practice for clubs and promoters and co-ordinated production of safe partying and harm reduction resources.

Sports clubs also provide a context for harm reduction programmes. Studies in New Zealand and Australia report widespread use of cannabis and other drugs through sports groups such as surfing, rugby, league, netball, and golf (Te Runanga o te Rarawa 1995, NSW Health Department 1993).

US studies have reported effective wellness programmes, including exercise and other health-related lifestyle modification training among prisoners with substance use disorders. Self-reports from prisoners exiting the programme described improved psychological well-being, including self-esteem, health awareness and concerns, healthy lifestyle adoption and relapse prevention skills (Peterson and Johnstone 1995).

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