New Zealand Drug Statistics

New Zealand Health Information Service – 2001

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Foreword

The Government is committed to an evidence-based approach to tackling drug-related harm in New Zealand under the framework of the New Zealand Health Strategy and the National Drug Policy. The overall goal is to improve the health and welfare of New Zealanders.

Central to this goal is the need for a monitoring regime to chart progress towards key outcome targets. This publication pulls together information from a myriad of data sources into one volume, providing a snapshot of drug use, abuse and harm in New Zealand. Readers should not be surprised to find that this report does not include all data sources, nor indeed to find that there are some gaps in information. The simple fact remains that we are unable to fully answer all the questions we have relating to drugs. Work needs to be done to establish data sources in some areas, in particular drug use during pregnancy and the role of drug use in workplace accidents. However, this is the first published report in this country for many years to try and provide a broad view of the drug situation.

The Editorial Committee for this publication was made up of representatives from the Ministries of Health and Justice, the New Zealand Health Information Service, the Alcohol and Public Health Research Unit, the Alcohol Advisory Council of New Zealand and the New Zealand Police. Their efforts are to be commended.

Jim Fraser
Chief Analyst
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Introduction

The purpose of this publication is to gather in one place a diverse range of statistics relating to drugs and drug use in New Zealand. The primary focus is on those drugs that are used recreationally or due to dependence.

This publication does not contain information on policy nor does it contain any overriding analysis of the drug situation in New Zealand. This was outside the scope of this publication, which was to present various statistics for the reader to reach their own conclusions.

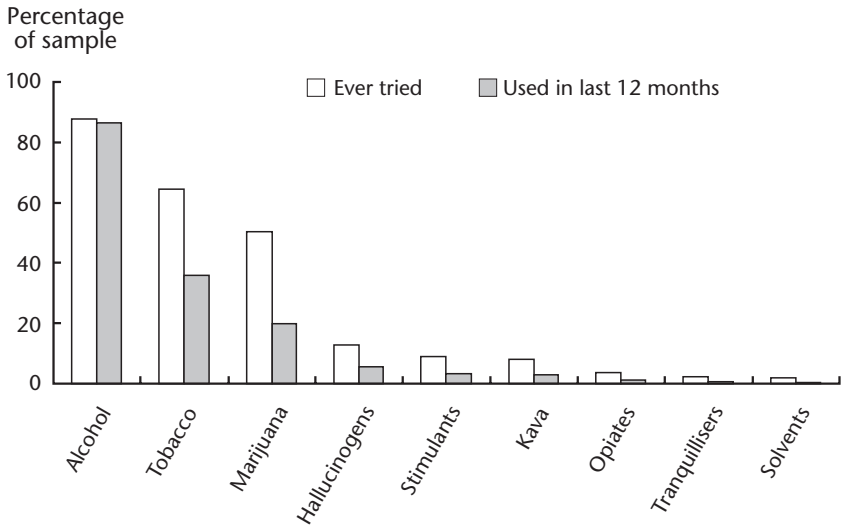

Figure 1: *Proportions who have ever tried, or have used in the last 12 months, various drugs, 1998*
Source: Alcohol and Public Health Research Unit, 1998 National Drug Survey[1]

The most commonly used drug in New Zealand is alcohol, followed by tobacco and marijuana. Other drugs such as opiates (heroin, morphine, etc), stimulants (cocaine, amphetamines) and hallucinogens are used to a lesser degree (Figure 1).

The information for each type of drug has been broken down into four main areas where there was sufficient information to do so. These areas are: production/amounts available, prevalence of drug use, consequences of drug use (eg, crime), and health effects of drug use. Cost has not been included, because there is a general paucity of information of this nature in New Zealand.

COMPARABILITY

Two kinds of information are presented in this report: survey data and event-based statistics.

Survey data comes from sources such as the various alcohol and drug surveys carried out by the Alcohol and Public Health Research Unit, census information from the five-yearly national census carried out by Statistics New Zealand, and the household health surveys carried out by Statistics New Zealand and the Ministry of Health.

[1] Field A, Casswell S. 1999. *Drugs in New Zealand: National Survey, 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 6.1.

Event-based statistics come from information collected and stored by various organisations, and are based on discrete events. Some examples of these are people hospitalised with drug-related diagnoses, people apprehended by the police, and convictions for drug-related crimes.

All of these sources of information differ in the reasons for capturing the information, and differ in the methods they use to record, analyse, and disseminate the information. This means that many of the different types of information contained in this report cannot be compared with each other.

In the case of surveys that are performed on a regular basis (eg, census, household health surveys) changes in the wording of the questions can result in the statistics not being comparable. This is because although people are talking about the same general subject (eg, tobacco smoking) the actual question asked may be talking about different specifics (eg, just cigarettes or all tobacco products) and the available answers may also be providing quite different options to those available in previous surveys.

Event-based statistics also change over time as technology changes, as definitions change, and as new kinds of information are captured.

One key area where information differs across most of the information sources is in the area of ethnicity.

ETHNICITY

Comparison of ethnicity statistics between the different sources in this publication is not possible, because of variations in definition and collection practices.

Ethnicity seems, at first glance, to be a relatively simple concept. However, both survey and event-based systems for information collection need each and every variable to be defined so that consistent results are obtained. This applies to ethnicity as much as any other variable, and the various possible definitions and collection practices ensure that it is not a simple concept.

Two methods of defining ancestry that have been used in the past are ethnicity based upon ancestry, and ethnicity based upon self-identity.

Ancestry implies that ethnicity is hereditary and that a child's ethnicity is dependent upon the ethnicity of the parents. The self-identity method asks for people to identify the ethnic groups that they feel they belong to or identify with. These two definitions are fundamentally different and are not comparable.

Further complications are added by the number of ethnic groups that can be recorded. Recording only one ethnic group requires people to decide which ethnic group is most significant for them if they belong to more than one. Being able to record multiple ethnic groups allows for truer recording of ethnicity for each person. However, multiple ethnicities add significant complications for any analysis using ethnicity as a variable. This is because it is not usually possible or useful to allow for every possible combination of ethnicities when doing an analysis.

Multiple ethnic groups

Two common methods to get around the problems posed by multiple ethnic groups are to use a "sole ethnicity" basis and a "prioritised ethnicity" basis.

"Sole ethnicity" is essentially based upon a person recording only one ethnicity when given the option of recording more then one. For example, if a person has answered only Māori as their ethnicity then they will be tabulated under the Māori category. A person

answering both Māori and Pākehā would be tabulated under an "other" category, or possibly a "mixed" ethnicity category. This has the effect of presenting Māori statistics as lower than for the actual number of people who identified Māori as an ethnic group they belonged to.

"Prioritised ethnicity" ranks the different ethnic groups in a predetermined order. For example, Māori is the highest ranked ethnic group. This means that if a person claimed both Māori and European as their ethnic groups then analysis of the results would determine this person to be Māori. The effect of this is to maximise the statistics for the highest-ranked group, and minimise them for the lowest-ranked group.

PROCESS

A number of governmental and non-governmental organisations that might have collected drug-related statistics were asked if they were able to contribute to this publication. An editorial committee was then formed, with members from the Ministry of Health, New Zealand Drug Foundation, Alcohol Advisory Council, Alcohol and Public Health Research Unit, New Zealand Police, and Ministry of Justice. This committee oversaw the concept scoping and design, and the collection and evaluation of contributions.

Not all the material received by the editorial committee has been included in the final form of this publication. Some was deemed to be outside the scope, some was deemed to be statistically insignificant, and other information was excluded through lack of space.

ALCOHOL

KEY FACTS

Use

- The total volume of alcoholic beverages available for consumption decreased over the 1990–2000 period by 3 percent to 418.5 million litres in the year ending June 2000. However, the total volume of absolute alcohol available for consumption increased by 1 percent, to 26.3 million litres, during this 10-year period.
- Alcoholic drinks have increased steadily in price over the 1990–2000 period, with annual increases ranging between 1 and 3 percent, and prices rising by a total of 22 percent from June 1990 to June 2000. Over the same 10 years, there was 11 percent less absolute alcohol available per person aged 15 years and over. Overall, as alcohol increased in price, alcohol available for consumption decreased.
- According to the 1995 National Alcohol Survey, 87 percent of people aged 14 to 65 years had consumed alcohol in the previous 12 months. The survey also found that 80 percent of Māori (83 percent of men and 78 percent of women) had consumed alcohol in the previous 12 months. The annual Auckland Alcohol Survey showed that in the 1990s, 59 percent of Pacific peoples had consumed alcohol in the past year.
- The most commonly reported consequence of one's own drinking in the past 12 months was a hangover (51 percent of men, 33 percent of women). Ten percent of males reported physical assault as a problem experienced due to other people's drinking. Eleven percent of women reported sexual harassment as a problem experienced as the result of someone else's drinking.

Crime

- In 1998 there were 1876 prosecutions for offences under the Sale of Liquor Act. Approximately 64 percent (1201) of these prosecutions resulted in a conviction.
- In 1998 there were 26 512 prosecutions for traffic offences involving alcohol. Approximately 91 percent (24 059) of these prosecutions resulted in a conviction.

Mortality

- There were 142 deaths in 1997 where the underlying cause of death was an alcohol-related condition. The age-standardised mortality rate due to alcohol-related conditions was 3.3 per 100 000 population.
- Ten percent of deaths due to external causes (eg, falls, motor vehicle accidents, suicide) involved a positive blood alcohol concentration in the deceased.
- Eleven percent of female drivers and 21 percent of male drivers involved in fatal car crashes over the 1996–98 period had alcohol involvement. Overall, drinking drivers contributed to 23 percent of all fatal motor vehicle accidents and 14 percent of all injury motor vehicle accidents in the year ended December 1999.
- Alcohol was involved in 19 percent of all drownings over the period 1980–99.

Hospitalisations

- There were 8551 publicly funded hospitalisations in 1998 where a diagnosis of an alcohol-related condition or alcohol involvement was made. The age-standardised hospitalisation rate was 198.1 per 100 000 population.

ALCOHOL PRODUCTION / QUANTITIES

Alcohol available for consumption may be measured in terms of the volume of alcoholic beverages available for consumption, or the volume of the alcohol content of alcoholic beverages available for consumption (that is, absolute alcohol). For example, the volume of table wine is multiplied by 0.11 in order to obtain the volume of absolute alcohol available for consumption in this particular type of beverage.

The total volume of alcoholic beverages available for consumption decreased over the 1990–2000 period by 3 percent to 418.5 million litres in the year ending June 2000, as shown in Figure 2. This decrease was slowed by small increases in 1990–91 (3 percent), 1993–94 (1 percent), 1997–98 (4 percent) and 1999–2000 (4 percent).

The total volume of absolute alcohol available for consumption increased by 1 percent to 26.3 million litres over the 10 years from June 1990 to June 2000. There were four increases during this period, as shown in Figure 2: 1990–91 (3 percent), 1995–96 (1 percent), 1997–98 (5 percent) and 1999–2000 (5 percent).

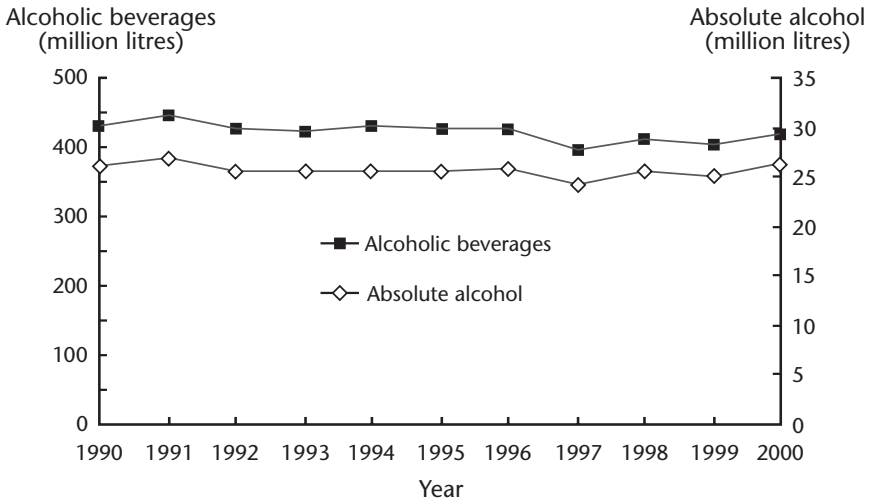

Figure 2: *Volume of alcoholic beverages and absolute alcohol available annually, 1990–2000*

Source: Statistics New Zealand

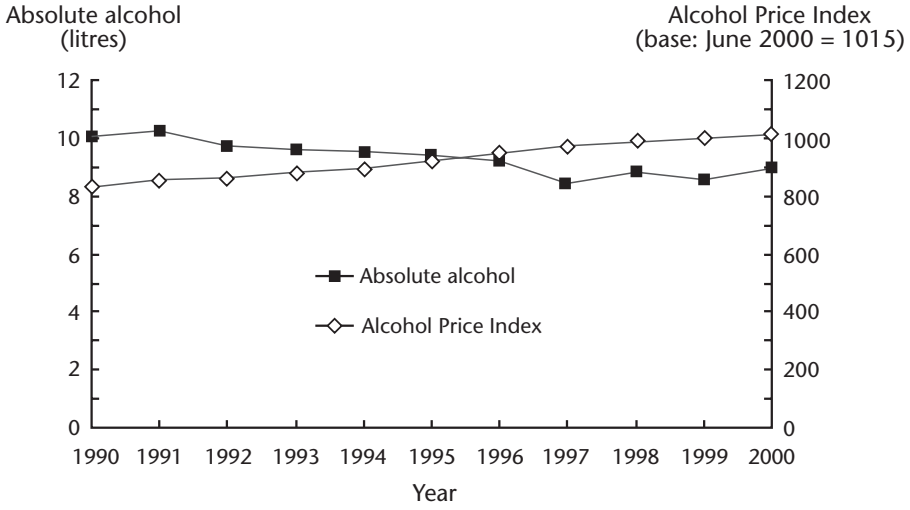

Figure 3: *Absolute alcohol available annually for consumption per person aged 15 years and over (year end June) and Alcohol Price Index, 1990–2000*

Source: Statistics New Zealand

There was 11 percent less absolute alcohol available per person aged 15 years and over in the year ending June 2000 than in the year ending June 1990. The largest decrease, of 8 percent, was in the period from the year ending June 1996 to the year ending June 1997. There were slight increases in absolute alcohol available annually per person in the periods from June 1990 to June 1991 (2 percent), June 1997 to June 1998 (4 percent), and June 1999 to June 2000 (4 percent), as shown in Figure 3.

Alcoholic drinks have increased steadily in price over the 1990–2000 period by a total of 22 percent. Alcoholic drink prices rose during every one of the 10 years from June 1990 to June 2000, with year-on-year increases ranging between 1 and 3 percent, as shown in Figure 3. Although no precise correlation appears to exist, overall as alcohol increased in price, the alcohol available for consumption decreased.

Consumption, price, and the Sale of Liquor Act 1989

Recent research has specified the impact of changes in the real price of alcoholic beverages, and changes in the availability of wine on the consumption of alcohol in New Zealand.[1]

Amendments to the Sale of Liquor Act 1989 permitted the sale of wine by supermarkets (defined by size) and large grocery stores, but not smaller corner stores. This resulted in a sharp permanent increase in wine consumption in New Zealand. After controlling for the effects of price changes and normal seasonal fluctuations in consumption, there was an estimated 16 percent increase in the per capita volume of wine consumed in the three months after the legislative changes came into force.

The increased availability and consumption of wine did not affect the consumption of beer, but it may have affected the consumption of spirits. There was an estimated 16.5 percent decrease in the volume of spirits consumed per capita in the three months after the changes to the Sale of Liquor Act came into effect. This estimate again controls for the effects of price changes and normal seasonal variations in consumption.

The effect of price on alcohol consumption has also been estimated. The following figures are estimates of the relationship between prices and consumption (elasticities) over the period 1984 to 1997, controlling for the impact of the amendments to the Sale of Liquor Act. Note that the estimation took into account seasonal changes and Sale of Liquor Act changes as well as price.

- When the price of wine decreased 10 percent in real terms, wine consumption increased by 7 percent.
- When the price of beer increased 10 percent in real terms, beer consumption decreased by 10.2 percent.
- There was no clear trend in the real price of spirits, and spirits consumption in any case appeared to be price inelastic.
- When the price of absolute alcohol increased by 10 percent in real terms, consumption decreased by 21 percent.[2] This response is principally attributable to beer, since beer is the largest component in New Zealand's alcohol consumption.

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[1] Zhang J F, Casswell S. 1999. The effects of real price and a change in the distribution system on alcohol consumption. *Drug and Alcohol Review* 18: 371-378.

[2] This elasticity is larger than the cited elasticities for wine and beer, because it is based on absolute alcohol, whereas the elasticities of wine and beer are based on the whole beverage.

ALCOHOL USE

Prevalence of use

According to the 1995 National Alcohol Survey, 87 percent of people aged 14 to 65 years had consumed alcohol in the previous 12 months.[1] There was little difference between the sexes; the figure for men was 89 percent and for women it was 85 percent. The average frequency of drinking was about every second day for men and about every third day for women.

There was a lower proportion of drinkers in the Northern region (excluding Auckland urban area) than in the rest of the country (80 percent of men and women). Large cities, with the exception of Auckland, tended to have more drinkers than elsewhere (93 percent of men and 89 percent of women).

Data on changes in drinking behaviour in the 1990s can be obtained from the annual Auckland Alcohol Survey.[2] Among 20-to-65-year-olds, the proportion of drinkers remained fairly steady during the 1990s at between 85 and 88 percent. The proportion among 14-to-19-year-olds, however, declined from 1990 to 1996, from 82 percent to 66 percent. However, from 1996 to 1999, the proportion of 14-to-19-year-olds who were drinkers rose again to 77 percent (Figure 4).

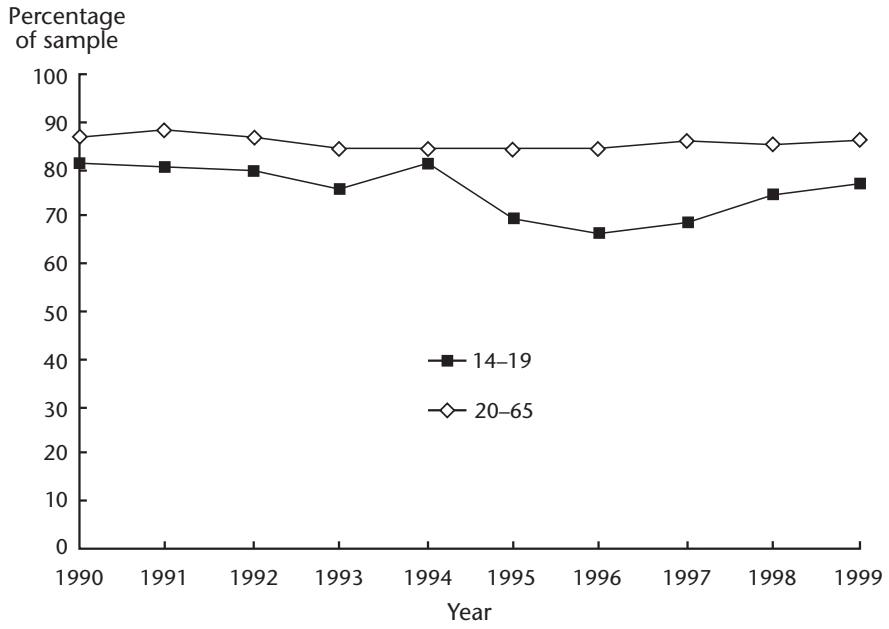

Figure 4: *Proportion of drinkers by age group, 1990–99*

Source: Alcohol and Public Health Research Unit

Typical quantity consumed

According to the 1995 National Alcohol Survey, the average quantity of alcohol consumed on a typical drinking occasion was 51 mL of absolute alcohol (equivalent to

[1] Wyllie A, Millard M, Zhang J F. 1996. *Drinking in New Zealand: A National Survey, 1995*. Auckland: Alcohol and Public Health Research Unit.

[2] Casswell S, Bhatta K. 2001. *A Decade of Drinking: Ten Year Trends in Drinking Patterns.* Auckland: Alcohol and Public Health Research Unit. *See also*: Casswell S. 1999. *Trends in Patterns of Youth Drinking and Implications for Policy*. Paper presented at the 38th International Congress on Alcohol, Drugs and Other Dependencies, Vienna, August 1999.

three cans of full-strength beer[1]). The average amount drunk per typical occasion was 64 mL of absolute alcohol for men, and 39 mL of absolute alcohol for women.

Men accounted for about three-quarters of total alcohol consumption.

Frequency of drinking

According to the 1995 National Alcohol Survey, the average frequency of drinking was four times a week for men, and between two and three times a week for women. Frequency of drinking was greater at ages over 20 years than at ages younger than 20.

The annual Auckland Alcohol Survey shows change in drinking frequency by age in the 1990s. The average frequency of drinking declined for 20-to-65-year-olds between 1990 and 1992, then rose between 1992 and 1995, and has fluctuated around the 1995 level up to 1999.[2] The average frequency of drinking among 14-to-19-year-olds similarly declined between 1990 and 1992. After 1992, the frequency of drinking among 14-to-19-year-olds rose, surpassing the level attained in 1990. The frequency of drinking of 14-to-19-year-olds then declined between 1996 and 1999 (Figure 5).

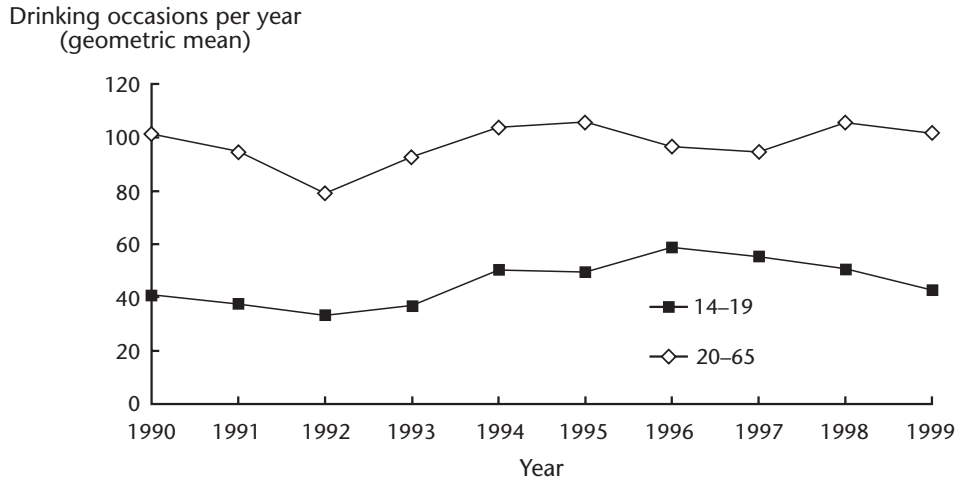

Figure 5: *Average number of drinking occasions per year, by year and age, 1990–99*
Source: Alcohol and Public Health Research Unit

Figure 6 shows change in frequency of drinking in association with change in consumer confidence over the period 1990 to 1999. This is based on data from the annual Auckland Alcohol Survey and the WestpacTrust McDermott Miller Consumer Confidence Survey. The two trends corresponded closely in the period 1990 to 1996, which suggests that economic conditions influence drinking. (Figure 5 shows trends in Auckland only; year-by-year data on frequency of drinking across the whole country is not available.) However, the two trends show some divergence between 1996 and 1998.

The 1995 National Alcohol Survey also asked about frequency of drinking a larger amount, which is defined as six or more drinks per occasion for men and four or more

[1] The Alcohol Advisory Council of New Zealand defines a "standard drink" as any drink containing 10 grams of alcohol. Using this definition, one can of beer which contains 5 percent alcohol by volume is roughly equivalent to 1.5 standard drinks. (*See*: Working Party on Upper Limits for Responsible Drinking. 1995. *Upper Limits for Responsible Drinking*. Wellington: Alcohol Advisory Council.) However, APHRU's studies of alcohol have defined a drink as approximately 15 mL of absolute alcohol. This quantity for a standard drink is larger than is often used by other agencies in New Zealand, but it equates well with commonly used drink containers.

[2] Casswell S, Bhatta K. 2001. *A Decade of Drinking: Ten Year Trends in Drinking Patterns.* Auckland: Alcohol and Public Health Research Unit.

drinks per occasion for women. Twenty-one percent of all male drinkers stated that they consumed a larger amount at least once a week. This contrasted with women, of whom only 8 percent consumed a larger amount at least once a week. Over 38 percent of men at ages 18 to 24 years consumed a larger amount on a weekly basis (Figure 7). Twenty percent of women of ages 16 to 24 years also drank these larger amounts on a weekly basis. Thirteen percent of men and 4 percent of women also stated that they drank enough to feel drunk at least once a week.

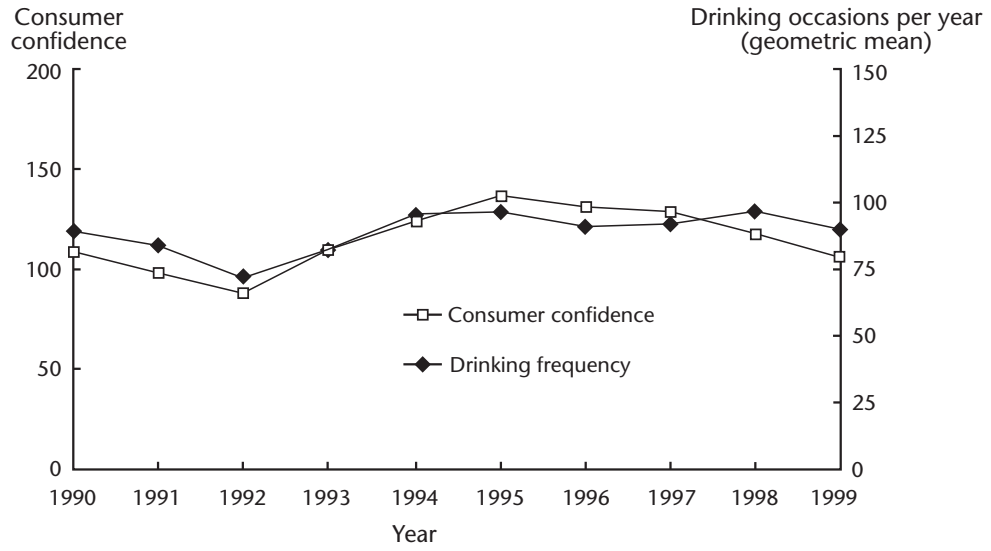

Figure 6: *Auckland consumer confidence and frequency of drinking, 1990–99*

Source: Economic Dept, WestpacTrust; Alcohol and Public Health Research Unit

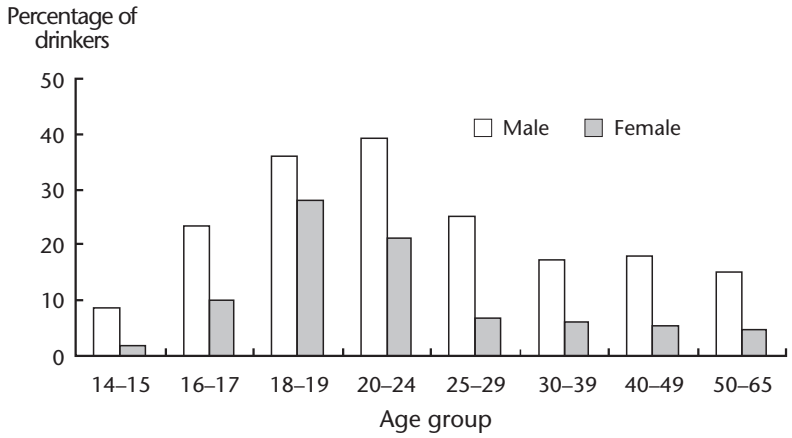

Figure 7: *Percentage drinking larger amounts at least weekly, by age group, 1995*

Source: Alcohol and Public Health Research Unit

Change in typical quantity consumed

The typical quantity consumed by young people rose in the 1990s. Figure 8 shows change in the quantities of absolute alcohol consumed on typical drinking occasions by 14-to-19-year-olds and 20-to-65-year-olds, during the period 1990 to 1999.

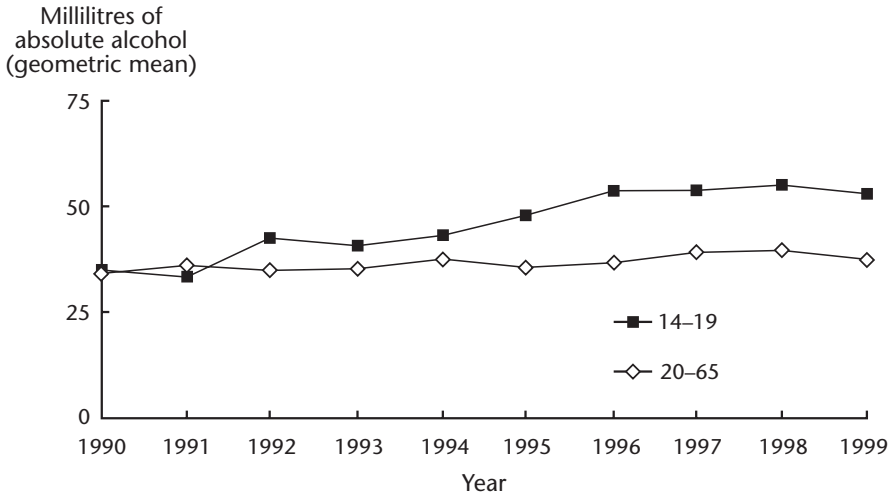

Figure 8: *Typical quantities consumed, by age, 1990–99*

Source: Alcohol and Public Health Research Unit

The typical amount consumed by 20-to-65-year-olds increased only slightly between 1990 and 1999. The typical quantity consumed by 14-to-19-year-olds, however, rose markedly over the 1990–99 period, by about two drinks per typical occasion. Further disaggregation of the younger age group reveals that most of this increase is attributable to 14-to-17-year-olds. People in this age group were drinking about three drinks per typical occasion in 1990, and five drinks per typical occasion in 1998.

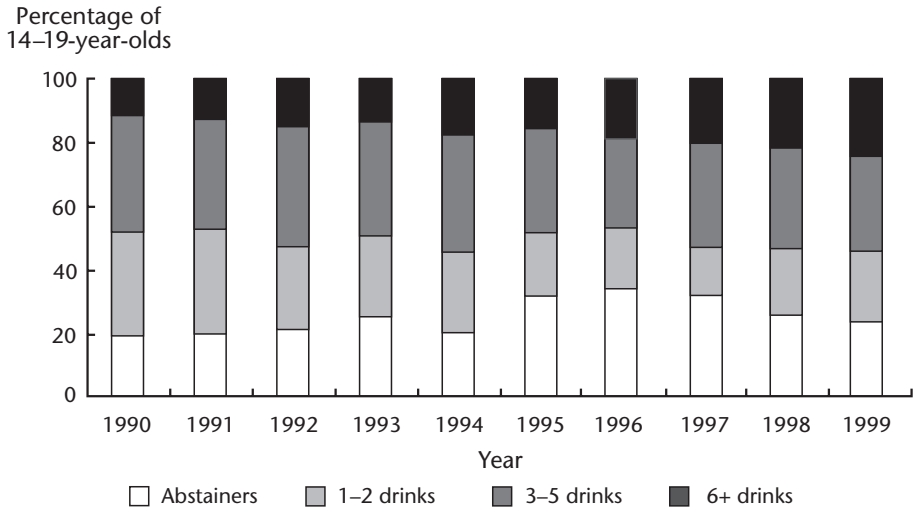

Figure 9: *Change in distribution of 14-to-19-year-olds, by number of drinks (including abstention) per typical occasion, 1990–99*

Source: Alcohol and Public Health Research Unit

Figure 9 shows the change between 1990 and 1999 in the distribution of 14-to-19-year-olds by typical quantities consumed. At the beginning of the decade, 12 percent of this age group consumed six or more drinks on a typical occasion. In 1999, the proportion who drank six or more drinks was 25 percent. The proportion in this group steadily increased through the decade, although the proportion of abstainers has also increased.

Drinking and location

Auckland Alcohol Surveys show that the increase in alcohol consumption by 14-to-19-year-olds is associated with several locations, including other people's homes and nightclubs. Figure 10 shows that the average quantity drunk on a typical occasion by a 14-to-19-year-old at someone else's home rose between 1990 and 1999. There was no corresponding increase in the amount drunk by older people in someone else's home.

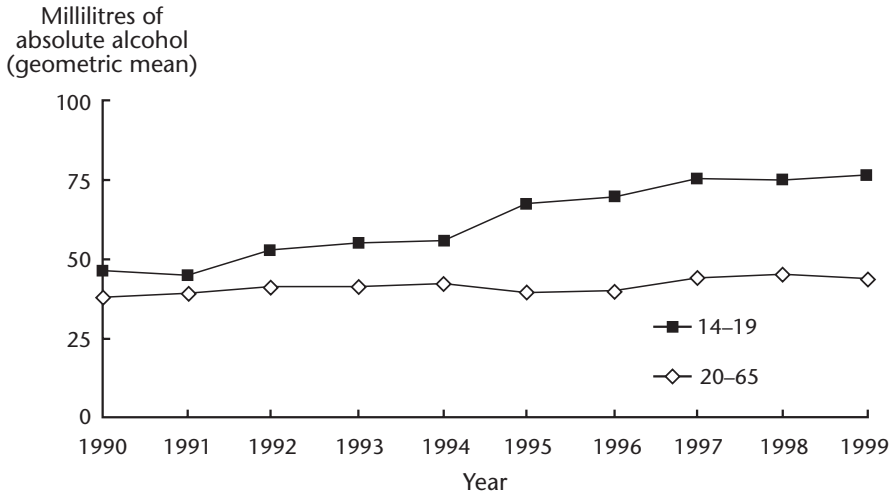

Figure 10: *Typical quantity drunk at someone else's home, by age, 1990–99*
Source: Alcohol and Public Health Research Unit

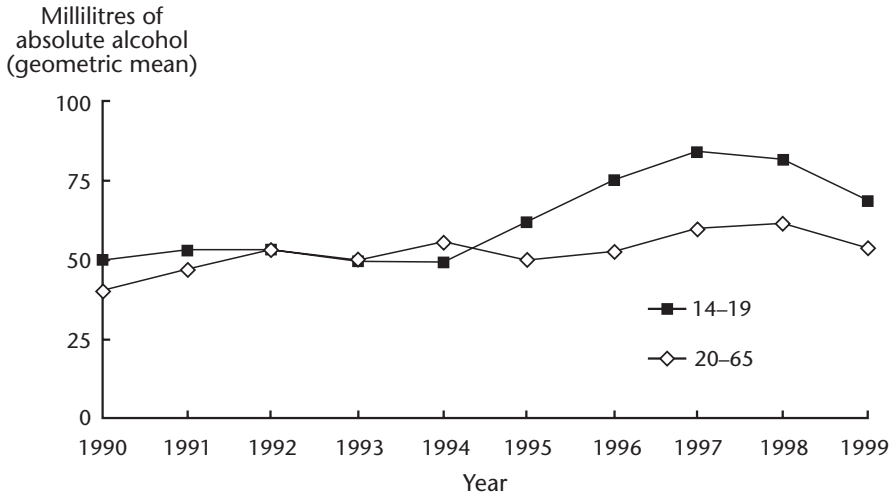

Figure 11: *Typical quantity drunk at nightclubs, by age, 1990–99*
Source: Alcohol and Public Health Research Unit

Similarly, the amount consumed by 14-to-19-year-olds in nightclubs increased markedly during the 1990s. Figure 11 shows that the increase started between 1994 and 1995. The date of the increased consumption coincides with the introduction of spirit-based "ready to drink" beverages or "alcopops" in New Zealand, and implementation of changes under the Sale of Liquor Act 1989.

MĀORI USE OF ALCOHOL

Prevalence of use

Māori use of alcohol was also surveyed in 1995, and published as *Te Ao Waipiro*.[1] The prevalence of drinking is slightly lower among Māori than among the general population. The survey found that 80 percent of Māori (83 percent of men and 78 percent of women) consumed alcohol in the previous 12 months. Figure 12 shows the prevalence of drinking by sex and by two age groups. The difference between the general population and the Māori population with respect to drinking is at older ages. The proportion of Māori at older ages who drink was slightly lower than among the general population, but this is not the case for those below 30 years of age.

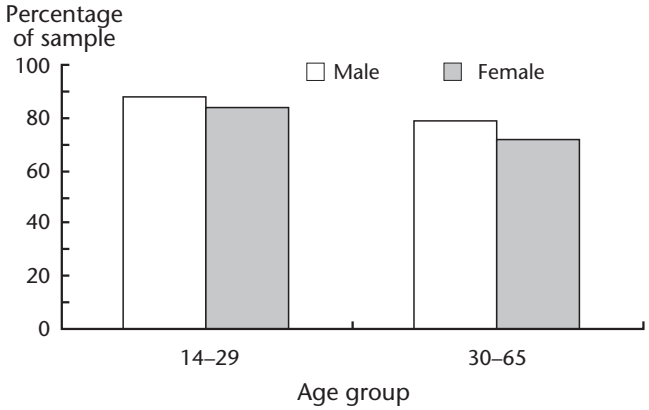

Figure 12: *Percentage of Māori who drank in the last 12 months, 1995*
Source: Whariki Research Unit (unpublished data)

Typical quantity consumed

For Māori men, the average quantity consumed on a typical occasion was 113 mL of absolute alcohol (equivalent to seven to eight drinks) while for women it was 65 mL (four to five drinks). There were also marked age and sex differences. For Māori males aged 14 to 29 years, the average quantity for a typical occasion was 135 mL (nine drinks), while at older ages, the average quantity was six drinks. Younger Māori women drank less on a typical occasion (five drinks), as did older Māori women (three to four drinks), as shown in Figure 13.

Frequency of drinking

For those who do drink, the average frequency of drinking was a little under three times a week for Māori men and once to twice a week for Māori women. Among those aged 14 to 29 years, the average frequency was three times a week for Māori males, and between once and twice a week for Māori females. For those aged 30 to 65 years, the average frequency is between two and three times a week for Māori males and once to twice a week for Māori females (Figure 14).

Thirty percent of male Māori drinkers and 14 percent of female Māori drinkers stated that they drink a larger amount at least once weekly. More than 50 percent of young Māori men (aged 14 to 29 years) consumed in excess of six drinks per typical occasion.

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[1] Dacey B. 1997. *Te Ao Waipiro: Māori and Alcohol in 1995*. Auckland: Whariki Research Group, Alcohol and Public Health Research Unit.

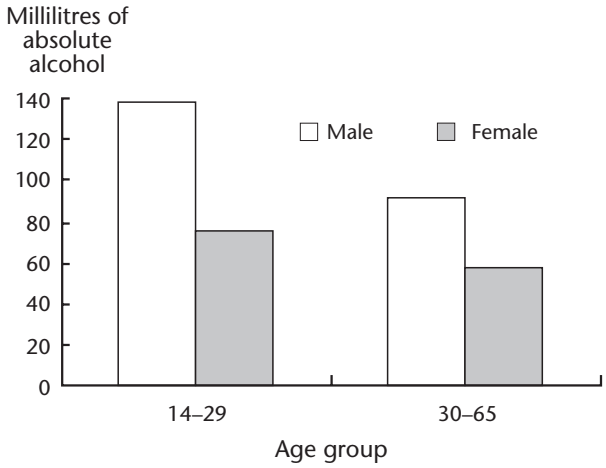

Figure 13: *Amount consumed on a typical occasion by Māori, by age and sex, 1995*
Source: Whariki Research Unit (unpublished data)

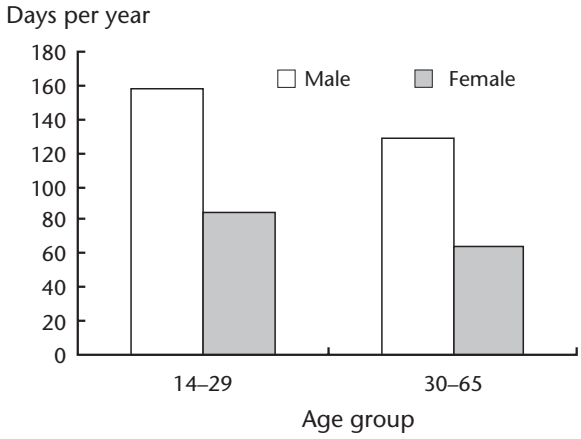

Figure 14: *Frequency of drinking by Māori, by age and sex, 1995*
Source: Whariki Research Unit (unpublished data)

The survey also asked respondents how often they felt drunk. Seventy-nine percent of men and 59 percent of women drank enough to feel drunk at least once a year, and 43 percent of men and 22 percent of women consumed this much at least once a month.

PACIFIC PEOPLES' USE OF ALCOHOL

Prevalence of use

The annual Auckland Alcohol Survey showed that during the 1990s, 59 percent of Pacific peoples consumed alcohol. This makes the proportion of abstainers in Pacific peoples communities high in comparison with the general population or the Māori population.

Figure 15 shows the percentage of Pacific peoples who drank alcohol in the 12 months prior to interview, by sex and age. Seventy percent of young men and 51 percent of young women had consumed alcohol. The proportions of older Pacific men and women who had consumed alcohol were 66 and 46 percent respectively.

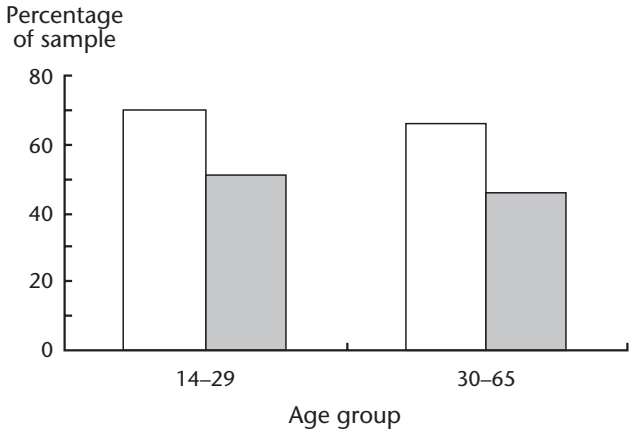

Figure 15: *Percentage of Pacific peoples who consumed alcohol in the previous 12 months, 1990–98 combined*

Source: Alcohol and Public Health Research Unit (unpublished data)

Typical quantity consumed

The average quantity consumed by Pacific males on a typical occasion was 135 mL of absolute alcohol (nine drinks) for 14-to-29-year-olds and 87 mL (five to six drinks) for 30-to-65-year-olds. Pacific females consumed 82 mL of absolute alcohol (five to six drinks) at 14 to 29 years of age, but 68 mL at 30 to 65 years (four to five drinks).

Thirty percent of Pacific males drank a larger amount per occasion at least weekly (six or more drinks). Fourteen percent of Pacific females consumed four or more drinks per occasion at least weekly. Pacific males aged 14 to 29 were more likely to consume larger amounts at least weekly (34 percent) than those aged 30 to 65 (25 percent). Twenty-one percent of younger Pacific females consumed larger amounts at least weekly, compared with 8 percent of older females.

ALCOHOL-RELATED PROBLEMS

Own drinking

The 1995 National Alcohol Survey also asked about consequences of drinking. Over half of male respondents (57 percent) and a third of female respondents (37 percent) suffered at least one of 14 identified consequences of drinking once in the preceding 12 months. The most commonly reported consequence was a hangover (51 percent of men, 33 percent of women). Twenty-three percent of men and 12 percent of women experienced the effects of alcohol whilst performing work, study or household duties. Twenty-one percent of men and 11 percent of women could not remember the next day things done while drinking. Based on these survey results, 390 000 New Zealanders could be expected to forget the next day things done while drinking at least once a year.

The heavier the alcohol consumption, the greater the number of problems reported. When individuals with self-reported problems are ranked by consumption, it is found that the top 10 percent of drinkers contributed 50 percent of all self-reported problems, and the top 5 percent of drinkers contributed 36 percent of the problems. Men aged 20 to 24 years accounted for 24 percent of drink-related problems.

The younger ages have a higher average number of problems resulting from drinking than the older ages. At age 18 to 24 years, over half of males were reporting three or more problems, compared to less than 20 percent at ages above 30 years. Roughly a third of females between ages 16 and 24 years also reported at least three problems.

Drinking by others

Respondents in the 1995 National Alcohol Survey were asked about four specific problems caused by the drinking of others. Table 1 lists these four problems and shows that the most frequently reported of these were physical assault and sexual harassment (about 7 percent for each problem after combining the two sexes).

Table 1: Problems experienced in the last 12 months as the result of someone else's drinking, percentages by sex and ethnicity, 1995

Type of problem	Males	Females
Motor vehicle accident	3	1
Other type of accident causing injury or major damage	3	2
Physical assault	10	5
Sexual harassment	3	11
Sample size (*n*)	1969	2263

Source: Alcohol and Public Health Research Unit

ALCOHOL-RELATED PROBLEMS FOR MĀORI

Own drinking

Māori men and women were asked whether they have experienced one or more of a range of specified consequences of their drinking. Almost two-thirds of Māori men (65 percent) and a little under half of Māori women (45 percent) confirmed that they had experienced at least one of the listed drinking-related problems.

The most common consequence reported was a hangover: 56 percent of Māori men and 39 percent of Māori women reported that this had occurred to them at least once in the past year. Twenty-five percent of Māori men and 12 percent of Māori women also reported that they had had a hangover at least five times in the previous 12 months.

One-third of Māori men (32 percent) and one in six Māori women (17 percent) had at least once in the previous 12 months awakened the next day unable to remember actions while drinking. One-quarter of Māori men (24 percent) and one in eight Māori women (13 percent) had got into a serious argument while drinking.

Drinking by others

Māori respondents in the 1995 National Alcohol Survey were asked about four specific problems caused by the drinking of others.

The most prevalent problem reported by Māori was physical assault; 15 percent of Māori men and 12 percent of Māori women in the survey reported that they had been assaulted in the preceding 12 months by someone who had been drinking. On a pro rata basis this means that about 44 000 Māori men and women aged 14 to 65 years had been assaulted in 1995. Similarly, the 14 percent of Māori women who were sexually harassed equates to some 23 000 women in absolute terms.

Table 2: Problems experienced by Māori in the last 12 months as the result of someone else's drinking, percentages by sex, 1995

Type of problem	Males	Females
Motor vehicle accident	6	2
Other type of accident causing injury or major damage	5	3
Physical assault	15	12
Sexual harassment	7	14
Sample size (*n*)	217	299

Source: Whariki Māori Health Research Group

ALCOHOL-RELATED PROBLEMS FOR PACIFIC PEOPLES

Own drinking

In the annual Auckland Alcohol Survey, Pacific peoples who drink alcohol were asked about a list of 14 problems associated with drinking.

Thirty-six percent of all Pacific males and females stated that they had had at least one problem in the previous 12 months. This frequency was higher among Pacific males (46 percent) than among Pacific females (27 percent).

Forty-two percent of Pacific males have reported that they had suffered a hangover from alcohol the day after drinking, while 22 percent of Pacific females reported that this had happened to them. Twenty-two percent of Pacific males and 9 percent of Pacific females could not, the day after drinking, remember things that happened during the drinking episode. Eighteen percent of Pacific males and 10 percent of Pacific females had also been drunk when there was an important reason to stay sober.

Drinking by others

Respondents in the annual Auckland Alcohol Survey were asked about four specific problems caused by the drinking of others. The largest effect of other people's drinking for Pacific peoples was physical assault: 15 percent of Pacific males and females report having been assaulted by someone who had been drinking (Table 3). Eleven percent of Pacific females reported having been sexually harassed.

Table 3: Problems experienced by Pacific peoples in the previous year as a result of someone else's drinking, percentages by sex, 1990–98 combined

Type of problem	Males	Females
Motor vehicle accident	6	5
Other type of accident causing injury or major damage	6	2
Physical assault	16	13
Sexual harassment	6	11
Sample size (*n*)	348	412

Source: Alcohol and Public Health Research Unit (unpublished data)

COMMUNITY CONCERNS ABOUT ALCOHOL USE

How the community ranks alcohol use as a problem is shown in Figure 16. The data was obtained from surveys of the greater Auckland area and the Bay of Plenty region in 1990 and 1998.[1] A scale from one for "not a problem" to 10 for "a serious problem" was used. While all respondents differentiated between alcohol and other drugs in their level of concern, some respondents rated all of these substances towards the low end of the scale, while others rated all drugs towards the high end of the scale. For this reason, the level of response was standardised. Alcohol was shown to be of relatively high concern (that is to say, higher than concern about marijuana and tobacco) and of about as much concern as were solvents and illegal drugs other than marijuana.

Age groups differ in their perception of alcohol use as a community problem. Alcohol is a relatively low concern at 18 to 19 years of age, but concern rises steadily with age, at least up to 35 to 39 years of age. Concern increased at all ages between 1990 and 1998.

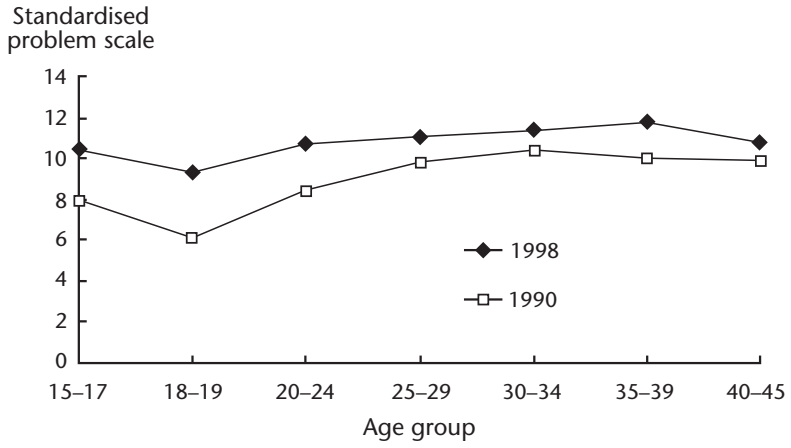

Figure 16: *Perceived seriousness of alcohol use as a community problem, by age, 1990 and 1998*

Source: Alcohol and Public Health Research Unit

[1] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit.

ALCOHOL AND OFFENDING

Information is not recorded for all crime on whether the offender was under the influence of alcohol when he or she committed the offence. However, some offences can be identified as involving alcohol because they were either committed against the Sale of Liquor Act 1989, or they involved a specific offence where alcohol levels over a certain limit are illegal in specified circumstances — such as driving a motor vehicle.

Sale of Liquor Act 1989

The Sale of Liquor Act 1989 is the main legislation dealing with issues surrounding the sale, purchase and consumption of alcohol. The primary objective of the Act is:

> "To establish a reasonable system of control over the sale and supply of liquor to the public with the aim of contributing to the reduction of liquor abuse, so far as that can be achieved by legislative means."

Following recent amendments, the Sale of Liquor Act restricts the sale of alcohol to those under the age of 18, as well as to certain premises that are specially licensed to be able to sell alcohol products on certain days and times. It is an offence to sell alcohol to under-age purchasers or in breach of any other licence conditions or requirements.

Apprehensions under the Sale of Liquor Act

Apprehensions under the Sale of Liquor Act fluctuated between 1994 and 1999[1], with a low of 4421 in the year ended 31 December 1995 and a high of 5378 in the year ended 1998 (Table 4). There were consistently over twice as many males apprehended as females.

Table 5 presents the age of those apprehended under the Sale of Liquor Act for the six-year period between 1994 and 1999. The majority (at least 79 percent) of those apprehended were under 20 years; this was the minimum legal drinking age up until 1 December 1999, when major amendments to the Sale of Liquor Act came into force.

Table 4: Apprehensions under Sale of Liquor Act 1989, by sex and year of apprehension, number and percentages of total, 1994–99 (percentages in brackets)

	1994	1995	1996	1997	1998	1999
Male:	3204 (68)	3111 (70)	3545 (70)	3270 (72)	3959 (74)	3317 (73)
Female:	1525 (32)	1310 (30)	1508 (30)	1275 (28)	1419 (26)	1250 (27)
Total:	4729 (100)	4421 (100)	5053 (100)	4545 (100)	5378 (100)	4567 (100)

Source: New Zealand Police

[1] Amendments to the Sale of Liquor Act which took effect in December 1999 have resulted in a significant drop in the number of recorded "apprehensions" under the legislation in 2000, with a large number of offences now dealt with by means of infringement notices. This makes it difficult to draw meaningful direct comparisons between the pre-2000 data and post-2000 data. In future updates of this publication, data on these infringement notices will also be presented.

Table 5: Offender apprehensions under Sale of Liquor Act 1989, by age and year of apprehension, numbers and percentage of total, 1994–99 (percentages in brackets)

Age group	1994	1995	1996	1997	1998	1999
10–14	126 (3)	110 (2)	108 (2)	91 (2)	116 (2)	130 (3)
15–19	3802 (80)	3704 (84)	4137 (82)	3495 (77)	4552 (85)	3781 (83)
20–24	180 (4)	121 (3)	196 (4)	141 (3)	164 (3)	136 (3)
25–29	114 (2)	74 (2)	138 (3)	142 (3)	130 (2)	125 (3)
30–34	101 (2)	79 (2)	108 (2)	140 (3)	82 (2)	93 (2)
35–39	89 (2)	102 (2)	81 (2)	132 (3)	92 (2)	105 (2)
40+	317 (7)	229 (5)	285 (6)	404 (9)	242 (4)	197 (4)
Unknown	0 (–)	2 (–)	0 (–)	0 (–)	0 (–)	0 (–)
Total	4729 (100)	4421 (100)	5053 (100)	4545 (100)	5378 (100)	4567 (100)

Note: '–' = less than 0.5 percent.
Source: New Zealand Police

Prosecutions under the Sale of Liquor Act

There was a decrease in convictions under the Sale of Liquor Act between 1990 and 1992 (Table 6), which some analysts have suggested is due largely to a decline in police involvement in this area after the passage of the Sale of Liquor Act.[1] Convictions under the Sale of Liquor Act have been a little higher in number since 1993, but the 1998 figure was still slightly lower than the figure in 1990.

Convictions under the Sale of Liquor Act

More males than females are convicted of offences under the Sale of Liquor Act (Table 7). The proportion of females convicted of these offences increased each year from 1991 to 1994, before decreasing in 1995. In 1998 the proportion of females convicted of these offences was slightly more than the equivalent proportion in 1990.

In 1998, 86 percent of convictions under the Sale of Liquor Act related to under-20-year-olds; while in 1990, 74 percent of those convicted of such offences were under 20 (Table 8).

[1] Statistics New Zealand. 1996. *New Zealand Now: Crime*. Wellington: Statistics New Zealand.

Table 6: Outcomes of prosecutions for offences under the Sale of Liquor Act 1989, numbers and percentages, 1990-98 (percentages in brackets)

Outcome of prosecutions	1990	1991	1992	1993	1994	1995	1996	1997	1998
Convicted	1248 (74)	759 (59)	644 (57)	975 (63)	1163 (65)	940 (63)	932 (56)	960 (59)	1201 (64)
Youth Court proved	14 (1)	11 (1)	4 (–)	4 (–)	1 (–)	6 (–)	6 (–)	2 (–)	7 (–)
S19 Discharge[1]	55 (3)	70 (5)	74 (7)	124 (8)	206 (12)	127 (8)	116 (7)	129 (8)	134 (7)
Not proved	362 (22)	453 (35)	402 (36)	441 (29)	422 (24)	431 (29)	618 (37)	550 (34)	534 (29)
Total	1679 (100)	1293 (100)	1124 (100)	1544 (100)	1792 (100)	1504 (100)	1672 (100)	1641 (100)	1876 (100)

Note: '–' = less than 0.5 percent
Source: Ministry of Justice

Table 7: Convicted cases for offences under the Sale of Liquor Act 1989, numbers and percentages by sex, 1990–98 (percentages in brackets)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Male:	740 (81)	457 (79)	378 (75)	526 (66)	630 (64)	533 (72)	514 (71)	552 (70)	805 (79)
Female:	173 (19)	120 (21)	121 (24)	272 (34)	355 (36)	203 (28)	211 (29)	238 (30)	216 (21)
*Unknown:**	5 (1)	5 (1)	2 (–)	4 (1)	1 (–)	3 (–)	0 (–)	2 (–)	3 (–)
Total:	918 (100)	582 (100)	501 (100)	802 (100)	986 (100)	739 (100)	725 (100)	792 (100)	1024 (100)

Note: '–' = less than 0.5 percent.
* Includes cases where the sex is recorded as a corporation.
Source: Ministry of Justice

Most of those convicted of offences against the Sale of Liquor Act received a monetary penalty (Table 9).

[1] Section 19 of the Criminal Justice Act 1985 allows a person who is found or pleads guilty to be discharged without a conviction being recorded. Such a discharge is deemed to be an acquittal.

Table 8: Convicted cases for offences under the Sale of Liquor Act 1989, numbers and percentages by age, 1990–98 (percentages in brackets)

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998
14–16	7	2	4	13	13	10	8	16	34
	(1)	(–)	(1)	(2)	(1)	(1)	(1)	(2)	(3)
17–19	668	416	379	683	817	629	593	666	853
	(73)	(72)	(76)	(85)	(83)	(85)	(82)	(84)	(83)
20–24	67	53	36	35	59	34	49	43	45
	(7)	(9)	(7)	(4)	(6)	(5)	(7)	(5)	(4)
25–29	35	25	20	13	19	10	12	12	22
	(4)	(4)	(4)	(2)	(2)	(1)	(2)	(2)	(2)
30–39	56	48	27	17	35	17	25	14	33
	(6)	(8)	(5)	(2)	(4)	(2)	(3)	(2)	(3)
40+	81	33	33	37	41	36	37	39	34
	(9)	(6)	(7)	(5)	(4)	(5)	(5)	(5)	(3)
Unknown	4	5	2	4	2	3	1	2	3
	(–)	(1)	(–)	(1)	(–)	(–)	(–)	(–)	(–)
Total	918	582	501	802	986	739	725	792	1024
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' = less than 0.5 percent; percentages may not add to 100 owing to rounding.
Source: Ministry of Justice

Table 9: Convicted cases for offences under the Sale of Liquor Act 1989, numbers and percentages by type of sentence, 1990–98 (percentages in brackets)

Type of sentence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Custodial	0	0	0	0	0	0	0	0	3
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Periodic Detention	0	4	2	5	3	1	0	1	2
	(–)	(1)	(–)	(1)	(–)	(–)	(–)	(–)	(–)
Community Service	0	2	0	1	4	1	2	1	1
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Monetary	872	493	423	658	823	618	645	715	918
	(95)	(85)	(84)	(82)	(84)	(84)	(89)	(90)	(90)
Deferment	5	5	6	3	4	3	6	3	4
	(1)	(1)	(1)	(–)	(–)	(–)	(1)	(–)	(–)
Other or no sentence	41	78	70	135	152	116	72	72	96
	(5)	(13)	(14)	(17)	(15)	(16)	(10)	(9)	(9)
Total	918	582	501	802	986	739	725	792	1024
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' = less than 0.5 percent; percentages may not add to 100 owing to rounding.
Source: Ministry of Justice

Traffic offences involving alcohol

Another identifiable category of alcohol-related offending relates to traffic offences. These offences include driving causing death or injury where alcohol was involved, and driving with an excess blood/breath alcohol (EBA) level — that is, "drink driving".

Table 10: Prosecutions for traffic offences involving alcohol by type of offence, 1990–98

Type of offence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Cause death[1]	151	114	77	42	36	55	44	28	26
Cause injury	257	311	276	220	224	237	223	172	199
Driving with EBA	26 923	31 576	27 304	25 057	23 473	26 411	26 548	26 204	26 287
Total	27 331	32 001	27 657	25 319	23 733	26 703	26 815	26 404	26 512

Source: Ministry of Justice

Prosecutions for traffic offences involving alcohol

The number of prosecutions for traffic offences involving alcohol increased between 1990 and 1991, then decreased until 1994, before increasing again in 1995 and plateauing in recent years (Table 10). Overall, there has been a 3 percent decrease in the number of prosecutions for traffic offences involving alcohol from 1990 to 1998.

Almost all traffic prosecutions involving alcohol were for driving with EBA. Such prosecutions accounted for 99 percent of all alcohol-related traffic offences in 1998. The number of prosecutions for driving causing death where alcohol was involved has tended to fall throughout the 1990s (from 151 in 1990 to 26 in 1998), while the number of prosecutions for driving causing injury where alcohol was involved has fluctuated rather more (with 257 and 199 prosecutions in 1990 and 1998 respectively).

Aggregate information for all traffic offences involving alcohol is presented from this point onwards.

Since 1990, over 85 percent of prosecutions for traffic offences involving alcohol have resulted in a conviction (Table 11).

Convictions for traffic offences involving alcohol

The following conviction information is based on the number of cases finalised each year. Because several charges may be combined into one case, the number of convictions is more than the number of convicted cases given in Table 11.

Throughout the 1990s, conviction trends for traffic offences involving alcohol were similar to prosecution trends. The number of convictions for traffic offences involving alcohol increased between 1990 and 1991, decreased until 1994, increased in 1995, and then remained at a steady level to 1998, similar to the figure in 1990.

[1] Driving offences causing death where the offender was charged with manslaughter rather than an offence under the Land Transport Act 1998 are not included in these figures.

Table 11: Outcome of prosecutions for traffic offences involving alcohol, numbers and percentages by year, 1990–98 (percentages in brackets)

Outcome of prosecutions	1990	1991	1992	1993	1994	1995	1996	1997	1998
Convicted	24 831 (91)	29 515 (92)	23 913 (87)	22 788 (90)	21 416 (90)	23 993 (90)	24 163 (90)	23 696 (90)	24 059 (91)
Youth Court proved	164 (1)	127 (–)	82 (–)	92 (–)	92 (–)	108 (–)	112 (–)	165 (1)	147 (1)
S19 Discharge[1]	16 (–)	17 (–)	21 (–)	14 (–)	23 (–)	27 (–)	13 (–)	19 (–)	19 (–)
Not proved	2320 (9)	2342 (7)	3641 (13)	2425 (10)	2202 (9)	2575 (10)	2527 (9)	2524 (10)	2287 (9)
Total	27 331 (100)	32 001 (100)	27 657 (100)	25 319 (100)	23 733 (100)	26 703 (100)	26 815 (100)	26 404 (100)	26 512 (100)

Note: '–' = less than 0.5 percent.
Source: Ministry of Justice

At least four out of five of those convicted of traffic offences involving alcohol were males. However, the proportion of females convicted for such offences increased from 12 percent in 1990 to 19 percent in 1998 (Table 12).

The number of people between 20 and 24 years old convicted of traffic offences involving alcohol increased from 5786 in 1990 to 6681 in 1991. The number of people in this age group convicted for such offences decreased from 5655 in 1992 to 3687 in 1998 (Table 13).

Table 12: Convicted cases for traffic offences involving alcohol, by sex and year, numbers and percentages, 1990–98 (percentages in brackets)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Male:	18 326 (87)	21 321 (86)	17 258 (85)	16 361 (84)	15 423 (84)	17 241 (83)	17 149 (82)	16 419 (80)	16 614 (80)
Female:	2611 (12)	3348 (14)	2804 (14)	2963 (15)	2880 (16)	3316 (16)	3605 (17)	3884 (19)	3939 (19)
Unknown:	54 (–)	56 (–)	166 (1)	109 (1)	91 (1)	110 (1)	107 (1)	123 (1)	188 (1)
Total:	20 991 (100)	24 725 (100)	20 228 (100)	19 433 (100)	18 394 (100)	20 667 (100)	20 861 (100)	20 426 (100)	20 741 (100)

Note: '–' = less than 0.5 percent; percentages may not add to 100 owing to rounding.
Source: Ministry of Justice

[1] Section 19 of the Criminal Justice Act 1985 allows a person who is found or pleads guilty to be discharged without a conviction being recorded. Such a discharge is deemed to be an acquittal.

The number of convictions for traffic offences involving alcohol for those between 30 and 39 years old increased from 4632 in 1990 to 5731 in 1991 but then decreased in 1992 to almost the 1990 figure. Between 1995 and 1998 the number increased slightly to just less than the number in 1991.

The number of those 40 years old and older who were convicted for traffic offences involving alcohol showed a similar pattern to those between 30 and 39 years old, although the number in 1998 was greater than the number in 1991.

In 1990 and 1991 the age distribution of those convicted for traffic offences involving alcohol was similar. However, as shown in Table 13, between 1995 and 1998 the distribution changed. The proportion of those convicted for traffic offences involving alcohol who were between 20 and 24 years old decreased from 24 percent in 1995 to 18 percent in 1998. The proportion of those convicted for traffic offences involving alcohol who were 40 years old or older increased from 18 percent in 1995 to 24 percent in 1998. In 1990 and 1991 those between 20 and 24 years old were the largest proportion of those convicted for traffic offences involving alcohol. However, between 1995 and 1998 those between 30 and 39 years old were the largest proportion of those convicted for traffic offences involving alcohol.

Table 13: Convicted cases for traffic offences involving alcohol, by age and year of conviction, 1990–98

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998
14–16	19	18	14	17	17	10	11	19	18
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
17–19	2936	3189	2512	2649	2682	3051	2886	2732	2920
	(14)	(13)	(12)	(14)	(15)	(15)	(14)	(13)	(14)
20–24	5786	6681	5655	5147	4702	4872	4392	3887	3687
	(28)	(27)	(28)	(27)	(26)	(24)	(21)	(19)	(18)
25–29	4152	4692	3930	3702	3559	3888	3717	3710	3497
	(20)	(19)	(19)	(19)	(19)	(19)	(18)	(18)	(17)
30–39	4632	5731	4626	4809	4457	5139	5511	5593	5715
	(22)	(23)	(23)	(25)	(24)	(25)	(26)	(27)	(28)
40+	3423	4365	3391	3049	2960	3683	4325	4468	4896
	(16)	(18)	(17)	(16)	(16)	(18)	(21)	(22)	(24)
Unknown	43	49	100	60	17	24	19	17	8
	(–)	(–)	(1)	(–)	(–)	(–)	(–)	(–)	(–)
Total	20 991	24 725	20 228	19 433	18 394	20 667	20 861	20 426	20 741
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' = less than 0.5 percent.
Source: Ministry of Justice

Although the number of younger people convicted of traffic offences involving alcohol has been decreasing in recent years, when compared to the population, younger people convicted of such offences were still over-represented in 1998. In 1998, younger people tended to be convicted for traffic offences involving alcohol at a higher rate than other age groups. Nearly 18 per 1000 population aged between 17 and 19 years old were convicted of such offences (Table 14). However, the conviction rate for traffic offences

involving alcohol tended to decrease with age until approximately three out of 1000 of those 40 years of age and older were convicted of such offences. Note that no rate has been presented for 14-to-16-year-olds, as the majority of these cases that are processed are proven in a Youth Court setting, and so are not recorded as convictions.

Table 14: Convictions for traffic offences involving alcohol, age-specific rate per 1000 population over 17 years of age, by age group, 1998

Total	17–19	20–24	25–29	30–39	40+
5.5	17.9	13.8	12.3	9.5	3.3

Source: Ministry of Justice

Monetary penalties were most commonly imposed for traffic offences involving alcohol, accounting for 64 percent of all sentences imposed for these offences in 1998. The community-based sentences of periodic detention and community service were the next most commonly imposed sentences (Table 15).

Table 15: Convicted cases for traffic offences involving alcohol, type of sentence, numbers and percentages by year, 1990–98 (percentages in brackets)

Type of sentence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Custodial	428	468	441	519	397	453	569	626	606
	(2)	(2)	(2)	(3)	(2)	(2)	(3)	(3)	(3)
Periodic Detention	3544	4339	3626	3652	3057	3126	3023	3062	3246
	(17)	(18)	(18)	(19)	(17)	(15)	(15)	(15)	(16)
Community Programme	90	110	147	137	89	82	79	35	26
	(-)	(-)	(1)	(1)	(1)	(-)	(-)	(-)	(-)
Community Service	2042	3350	3596	3422	3078	2967	2667	2426	2697
	(10)	(14)	(18)	(18)	(17)	(14)	(13)	(12)	(13)
Supervision	315	299	289	447	451	523	575	572	531
	(2)	(1)	(1)	(2)	(3)	(3)	(3)	(3)	(3)
Monetary	14 346	15 823	11 770	10 921	11 024	13 224	13 683	13 455	13 364
	(68)	(64)	(58)	(56)	(60)	(64)	(66)	(66)	(64)
Driving Disqualification	198	296	286	301	279	259	241	231	242
	(1)	(1)	(1)	(2)	(2)	(1)	(1)	(1)	(1)
Deferment	0	7	10	5	2	0	2	1	3
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Other or no sentence	28	33	63	29	17	33	22	18	26
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Total	20 991	24 725	20 228	19 433	18 394	20 667	20 861	20 426	20 741
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' = less than 0.5 percent; percentages may not add to 100 owing to rounding.
Source: Ministry of Justice

Each year between 2 and 3 percent of traffic offences involving alcohol resulted in a custodial sentence being imposed (Table 16). The average length of the custodial sentence varied between 3.8 months in 1990 and 2.6 months in 1997.

Table 16: Convicted cases for traffic offences involving alcohol, average length of custodial sentences (months), 1990–98

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Length of sentence (months)	3.8	2.8	3.2	3.2	3.2	2.9	2.9	2.6	2.8

Source: Ministry of Justice

Information from the biennial census of prison inmates[1] shows that between 1 and 3 percent of sentenced prison inmates were in prison for traffic offences involving alcohol (Table 17).

Table 17: Number in prison for traffic offences involving alcohol, 1995, 1997 and 1999

	Nov 1995	Nov 1997	Nov 1999
Number	37	92	136
Percentage of sentenced inmates	0.9	1.9	2.7

Source: Ministry of Justice / Department of Corrections

ALCOHOL-RELATED MORTALITY

Alcohol-related conditions

The conditions that are used to define alcohol-related conditions as the underlying cause of death are alcoholic psychoses, alcohol dependence syndrome, nondependent alcohol use disorder, alcoholic cardiomyopathy, alcoholic gastritis, alcoholic liver disease and poisoning by alcoholic beverages.

As presented in Figure 17, the male age-standardised mortality rate due to alcohol-related conditions has steadily declined from 6.6 per 100 000 population in 1990 to 4.8 per 100 000 population in 1996. The female mortality rate due to alcohol-related conditions in 1990 (1.6 per 100 000 population) was less than one-quarter of the 1990 male rate. The female rate dropped to a low during this period of 1.0 per 100 000 population in 1992, before rising to 1.9 per 100 000 population in 1996.

Note that age-standardised rates presented from this point onwards are rates per 100 000 population that are age-standardised to Segi's world population.[2]

In terms of ethnicity, Māori males and females had higher age-standardised mortality rates due to alcohol-related conditions than non-Māori males and females (Table 18).

[1] Lash B. 1996. *Census of Prison Inmates 1995*. Wellington: Ministry of Justice
Lash B. 1998. *Census of Prison Inmates 1997*. Wellington: Ministry of Justice
Rich M. 2000. *Census of Prison Inmates 1999*. Wellington: Department of Corrections.

[2] Waterhouse J, Muir C, Correa P, et al. 1982. Cancer Incidence in Five Continents IV. *Scientific Publications no.42*. Lyon: IARC.

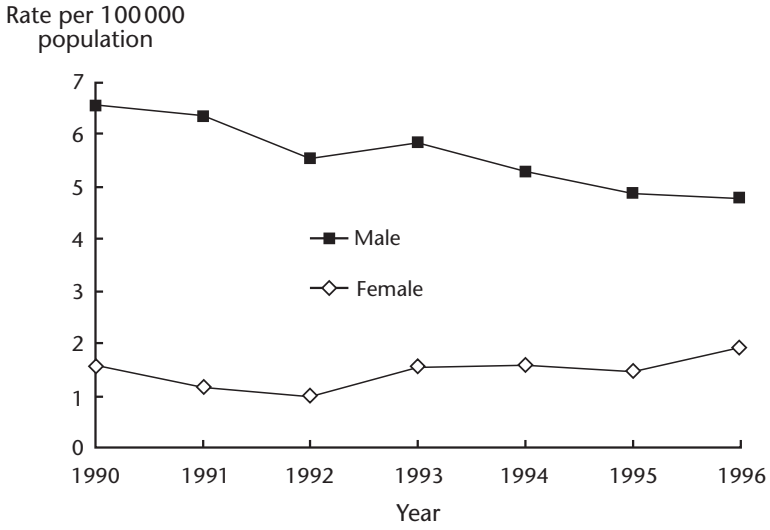

Figure 17: *Mortality rates for alcohol-related conditions, by sex, 1990–96*
Source: New Zealand Health Information Service

The Māori male death rate of 14.2 per 100 000 population was over three times greater than the non-Māori male rate of 4.1 per 100 000 population.

Māori females had a mortality rate that was twice that of non-Māori females (3.4 and 1.7 per 100 000 population respectively).

It is important to note, however, that ethnic mortality rates for 1996 cannot be compared with earlier years because there were changes in the definition of ethnicity for death registrations in 1995. The rates presented here should therefore be taken as indicative only, owing to the relatively small numbers involved.

Table 18: Deaths due to alcohol-related conditions, numbers and rates by sex and ethnicity, 1996

	Total		Māori		Non-Māori	
	No	**Rate**	**No**	**Rate**	**No**	**Rate**
Male:	102	4.8	21	14.2	81	4.1
Female:	44	1.9	7	3.4	37	1.7
Total:	146	3.3	28	8.4	118	2.9

Source: New Zealand Health Information Service

Deaths due to external causes

The following information is sourced from the New Zealand Health Information Service, which maintains the New Zealand Mortality Registry. The records of all deaths registered in 1990 to 1996 have been examined for instances where the underlying cause of death was an external cause and where the deceased was recorded as having alcohol in their blood at the time of the injury or poisoning that led to their death. The recording of presence of alcohol is sourced from post-mortems, coroners' findings, police reports and other relevant information sources.

These deaths do not include accidental poisoning by alcoholic beverages. Such poisoning deaths are a direct result of alcohol, and have been included in the preceding section, which dealt with deaths caused by alcohol-related conditions.

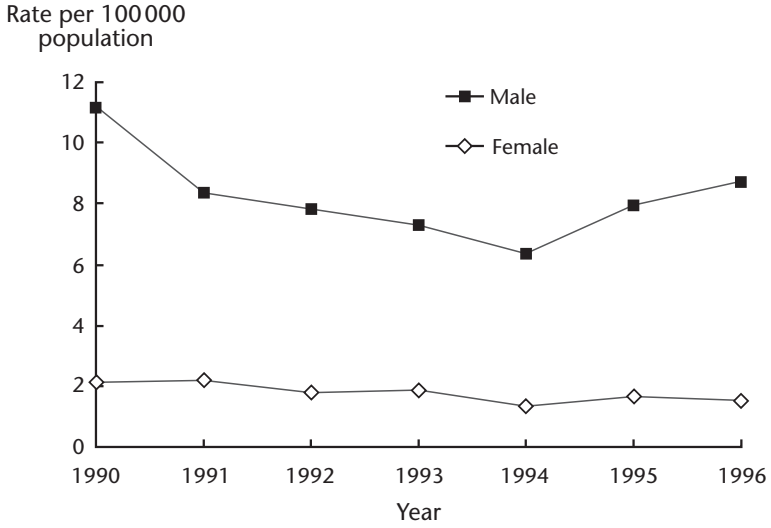

Figure 18: *Deaths due to external causes with any level of alcohol in deceased's blood, rates by sex, 1990–96*

Source: New Zealand Health Information Service

Figure 18 gives the age-standardised mortality rates for males and females where the cause of death was an external source and alcohol was in the blood of the deceased at the time of the injury or poisoning.

The lowest female rate was in 1994 (1.4 per 100 000 population). There was an overall decline from 1990 (2.1 per 100 000 population) to 1996 (1.5 per 100 000 population) in the mortality rate experienced by females due to external causes with presence of alcohol.

The male rate fluctuated over the period 1990 to 1996. After dropping from a high in 1990 of 11.2 per 100 000 population to a low in 1994 of 6.4 per 100 000 population, the male mortality rate has risen to 8.8 per 100 000 population in 1996. The male rate of deaths due to external causes where alcohol has been detected has been consistently higher than that of females.

As shown in Table 19, over the period 1990 to 1996 there were 1260 deaths due to external causes where any level of alcohol was identified as being in the blood of the deceased at the time of injury or poisoning. This represents 10 percent of all deaths (12 528) due to external causes over the 1990 to 1996 period.

Males had 8764 deaths due to external causes over the period 1990 to 1996. Alcohol was identified in 11.8 percent of these cases (1034 deaths). Females had 3764 deaths due to external causes over the 1990 to 1996 period. Alcohol was identified in 6 percent of these deaths (226 deaths).

The percentage of deaths due to external causes where alcohol was detected in the blood of the deceased was highest in the group aged 18 to 24 years (17 percent). This age group was also the highest for males (18 percent of deaths due to external causes).

Over 10 percent of all male deaths due to external causes in the period 1990 to 1996 had some level of alcohol in the blood of the deceased, at the time of the injury or poisoning, for all age groups from 14 to 54 years of age.

Table 19: Deaths due to external causes where alcohol is recorded as being in the blood of the deceased, numbers and percentage of all external cause deaths by age group at death and sex, 1990–96 combined

	Total	0–13	14–17	18–24	25–29	30–34	35–39	40–44	45–49	50–54	55+
All external deaths											
Total:	12 528	792	1024	2161	1263	1006	859	705	666	495	3 557
Male:	8764	490	744	1737	1000	787	680	524	497	355	1 950
Female:	3764	302	280	424	263	219	179	181	169	140	1 607
With alcohol detected											
Total:	1260	3	121	365	178	139	107	84	68	57	138
Male:	1034	3	93	317	147	119	89	65	56	37	108
Female:	226	0	28	48	31	20	18	19	12	20	30
Percentage with alcohol detected											
Total:	10	–	12	17	14	14	13	12	10	12	4
Male:	12	1	13	18	15	15	13	12	11	10	6
Female:	6	0	10	11	12	9	10	11	7	14	2

Note: '–' = less than 0.5 percent.
Source: New Zealand Health Information Service

Table 20: Drivers involved in fatal crashes, 1996–98 combined

Age group	Female drivers			Male drivers		
	Total	Alcohol involved	% with alcohol involved	Total	Alcohol involved	% with alcohol involved
15–19	60	9	15	189	47	25
20–24	59	10	17	241	79	33
25–29	56	11	20	211	61	29
30–34	50	9	18	170	43	25
35–39	37	4	11	156	31	20
40–44	38	4	11	148	22	15
45–49	36	0	0	104	15	14
50–54	20	0	0	75	8	11
55–59	20	0	0	63	6	10
60+	60	1	2	176	9	5
Unknown	21	4	19	85	16	19
Total	457	52	11	1618	337	21

Source: Land Transport Safety Authority

The female age group that had the highest percentage of external cause deaths in 1990–96 with any level of alcohol in the blood was the 50-to-54-year-old age group (contributing 14 percent of all external cause deaths).

Alcohol and road crashes

Table 20 shows that there were 457 female drivers involved in fatal crashes over the period 1996 to 1998. Fifty-two (11 percent) of these drivers were affected by alcohol. There were more than three times as many male drivers involved in fatal car crashes (1618) as female drivers. Twenty-one percent of these drivers (337) were affected by alcohol.

Males aged 20 to 24 years were the group with the highest number of drivers involved in fatal car crashes (241) and the highest number of alcohol-affected drivers involved in fatal car crashes (79). One-third of all drivers involved in fatal car crashes in this age group were affected by alcohol. This is the highest proportion out of all the age groups, irrespective of sex.

Table 21: Crashes and casualties from crashes where driver alcohol was a contributing factor, numbers and percentages of total fatal or injury crashes, 1980–99

Year	Crashes				Casualties			
	Fatal crashes		Injury crashes		Deaths		Injuries	
	No	%	No	%	No	%	No	%
1980	192	36	1954	19	217	36	3681	23
1981	199	34	2005	20	241	36	3687	24
1982	232	39	2049	19	267	40	3841	24
1983	205	36	2140	20	241	37	3818	23
1984	222	36	2248	19	249	37	3874	22
1985	238	36	2493	19	274	37	4418	23
1986	266	41	2575	20	328	43	4520	24
1987	271	39	2595	21	329	41	4498	24
1988	266	43	2500	21	318	44	4246	25
1989	264	41	2364	21	321	42	3969	24
1990	268	42	2716	22	318	44	4531	26
1991	225	41	2424	21	269	41	3935	24
1992	221	41	2282	21	273	42	3672	23
1993	185	36	1906	18	227	38	3042	20
1994	190	38	2044	18	225	39	3300	20
1995	162	32	2118	18	200	34	3421	20
1996	129	28	1652	16	148	29	2664	18
1997	127	27	1389	16	147	27	2317	17
1998	118	27	1347	16	142	28	2233	18
1999	100	23	1146	14	122	24	1904	16

Source: Land Transport Safety Authority

The highest proportion of female drivers involved in fatal car crashes who were affected by alcohol was the group aged 25 to 29 years (20 percent). This was also the age group with the highest number of drivers affected by alcohol of all the female age groups (11 drivers), although the age group with the highest number of drivers involved in fatal car crashes was the 15-to-19-year-old age group (60 drivers).

Table 21 contains information on the number of fatal and injury road crashes where driver alcohol was a contributing factor during the 1980s and 1990s.

The number of fatal crashes where driver alcohol was a contributing factor fell by 48 percent between 1980 (192 fatal motor vehicle accidents [MVAs]) and 1999 (100 fatal MVAs). The number of fatal MVAs where driver alcohol was a contributing factor peaked in 1987 (271 fatal MVAs). Between 1987 and 1999 there was a drop of 63 percent in fatal MVAs contributed to by driver alcohol. There was also a drop in the proportion of fatal MVAs where driver alcohol was a contributing factor, from 36 percent of all fatal MVAs in 1980 to 23 percent in 1999.

The number of actual deaths as a result of MVAs where driver alcohol was a contributing factor fell by 43 percent between 1980 and 1999. The number of deaths resulting from driver alcohol MVAs peaked in 1987 at 329, with a resultant fall of 63 percent to 1999. However, the ratio of deaths to fatal MVAs rose between 1980 (1.1 deaths per driver-alcohol MVA) and 1999 (1.2 deaths per driver-alcohol MVA).

The number of MVAs resulting in injury where driver alcohol was a contributing factor fell 41 percent between 1980 and 1999 (1954 and 1146 injury MVAs respectively). The number of injury MVAs where driver alcohol was a contributing factor peaked in 1990 (2716 injury MVAs) and there has since been a drop of 58 percent to 1999.

The actual number of injuries resulting from motor vehicle accidents where driver alcohol was a contributory factor has fallen from 3681 in 1980 to 1904 in 1999, a decline of 48 percent. The number of injuries resulting from driver alcohol MVAs peaked in 1990 at 4531. There has been a drop in injuries since 1990 of 58 percent. The ratio of injuries suffered to injury MVAs has also fallen from 1.9 injuries per driver-alcohol MVA in 1980 to 1.6 injuries per driver-alcohol MVA in 1999.

Alcohol and drowning

The Injury Prevention Research Centre of the University of Auckland has carried out a retrospective study of the role of alcohol in drownings in the Auckland region between 1988 and 1997.[1]

The study found that, of those aged 15 to 64 years who drowned and had had their blood alcohol level tested, 40 percent had a positive blood alcohol level, and 31 percent had a blood alcohol level over 80 mg/100 mL (the legal limit for adults operating a motor vehicle).

An examination of boating-related drownings yielded similar findings. Of those aged 15 to 64 years for whom blood alcohol could be reliably measured, 40 percent had positive blood alcohol levels, and 24 percent had concentrations that were over 100 mg/100 mL.

Based on these findings, although the raw numbers involved in drownings are fewer in relative terms, the role of alcohol in water-related fatalities appears to be at least as important as the role that alcohol plays in deaths on the roads.

Water Safety New Zealand maintains a database of all drownings in New Zealand.

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[1] Smith G S, et al. 1999. *The Role of Alcohol in Drowning and Boating Deaths in the Auckland Region: An Updated Report to the Alcohol Advisory Council.* Injury Prevention Research Centre Report Series, No 44. Auckland: Injury Prevention Research Centre.

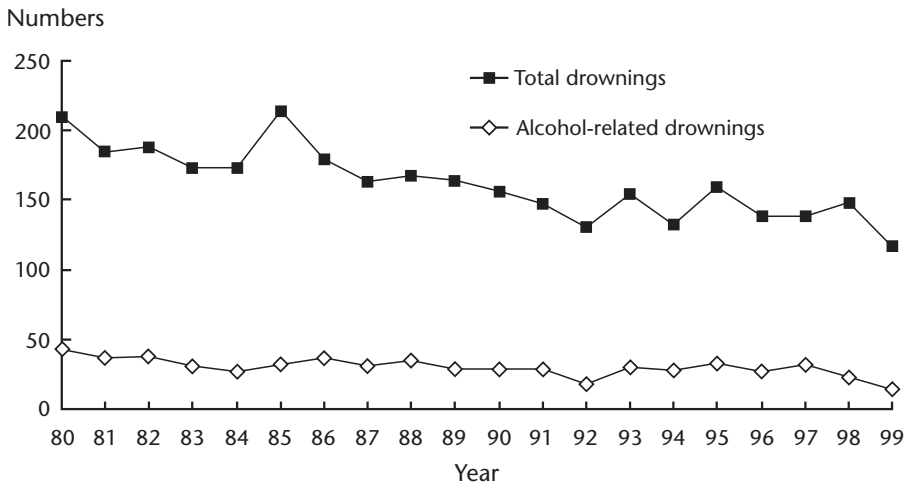

Figure 19: *Drownings, and drownings involving alcohol, by year, 1980–99*
Source: Water Safety New Zealand

Table 22: Total drownings, alcohol-related drownings, and alcohol-related drownings as a percentage of the total, 1980–99

Year	Total drownings	Alcohol-related drownings	Alcohol as % of total
1980	210	43	20
1981	184	37	20
1982	188	38	20
1983	173	31	18
1984	173	27	16
1985	214	32	15
1986	179	37	21
1987	163	31	19
1988	167	35	21
1989	164	29	18
1990	156	29	19
1991	147	29	20
1992	130	18	14
1993	154	30	19
1994	132	28	21
1995	159	33	21
1996	138	27	20
1997	138	32	23
1998	148	23	16
1999	117	14	12
Total	3234	603	19

Source: Water Safety New Zealand

This database was established in 1993, and all records before 1993 were entered retrospectively, using data from coroners' reports. Information is gathered from newspaper clippings and police notification reports that are then confirmed by coroners' reports. The statistics for alcohol-related drownings include only cases where alcohol was a known factor. Note that approximately 68 percent of all drownings are not tested for blood alcohol concentration. In these cases, a zero figure for blood alcohol is entered.

The total numbers of drownings have reduced over the past 20 years, and the same trend is evident for alcohol-related drownings (Figure 19 and Table 22). Between 1980 and 1999, alcohol was known to be involved in 603 drowning deaths in New Zealand. This represents 19 percent of the total number of drownings for that period.

As demonstrated in Table 23, males make up the largest portion (83 percent) of all

Table 23: Alcohol-related drownings by age and sex, numbers and percentages, 1980–97 combined

Age group	Male		Female		Total	
	No	%	No	%	No	%
0–13	1	33	2	67	3	100
14–17	29	81	7	19	36	100
18–24	137	85	24	15	161	100
25–29	71	87	11	13	82	100
30–34	43	91	4	9	47	100
35–39	32	86	5	14	37	100
40–44	27	79	7	21	34	100
45–49	23	79	6	21	29	100
50–54	28	80	7	20	35	100
55+	75	79	20	21	95	100
Unknown	5	71	2	29	7	100
Total	471	83	95	17	566	100

Source: Water Safety New Zealand

alcohol-related drownings. The age group with the highest proportion of male deaths is the 30–34-year age group (91 percent), followed by 25-to-29-year-olds (87 percent).

The most prominent age group is 18-to-24-year-olds (28 percent) followed by the over-55-year-olds (17 percent) and 25-to-29-year-olds (14 percent). However, care is required here because of the disproportionate number of years being compared. The oldest person in the 55-year-plus age group was 87 years of age, and the 18-to-24-year age group is two years longer than the others.

Finally, as Figure 20 shows, the most common cause of alcohol-related drowning was in road vehicle accidents which involved the vehicle running off the road and into water (31 percent), followed by immersion accidents (25 percent).

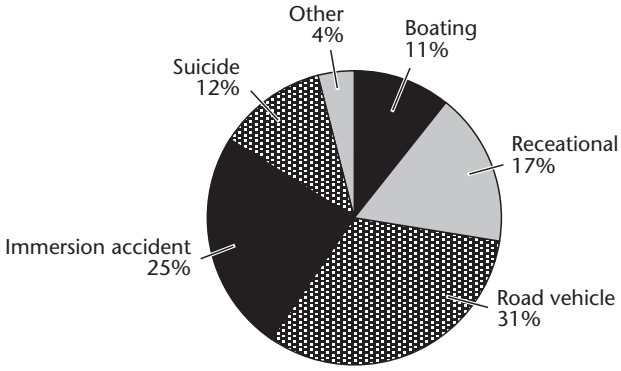

Figure 20: *Alcohol-related drownings, by activity, 1980–97 combined*
Source: Water Safety New Zealand

ALCOHOL-RELATED HOSPITALISATIONS

For the purposes of this report, "alcohol" includes methanol and methylated spirits. This section presents statistics on publicly funded hospitalisations where a diagnosis of an alcohol-related condition and/or poisoning by alcohol occurred. The figures are for inpatient and day patient hospitalisations only. (See the explanatory notes on page 109 for further information on hospitalisation statistics.)

Table 24 presents figures for all publicly funded hospitalisations where one or more alcohol-related conditions were diagnosed or where alcohol poisoning was involved.

Over the three-year period from 1996 to 1998 there were 22 180 publicly funded hospitalisations that involved alcohol-related conditions and/or alcohol poisoning as the reason for admission or as a principal or secondary diagnosis. There has been a steady rise in the total number of hospitalisations each year (6155 in 1996, 8551 in 1998),

Table 24: Publicly funded hospitalisations with an alcohol-related condition or poisoning, numbers and rates by ethnicity, sex and year, 1996–98

		1996		1997		1998	
		No.	Rate	No.	Rate	No.	Rate
Māori	*Total:*	984	207.0	1232	254.9	1517	301.0
	Male:	655	301.5	818	367.0	989	424.5
	Female:	329	119.1	414	150.9	528	186.9
Non-Māori	*Total:*	5171	139.4	6242	163.2	7034	182.4
	Male:	3675	200.0	4419	233.8	5032	263.4
	Female:	1496	81.9	1823	96.8	2002	105.6
Total	*Total:*	6155	147.7	7474	174.6	8551	198.1
	Male:	4330	211.3	5237	248.8	6021	283.3
	Female:	1825	87.3	2237	104.8	2530	117.5

Source: New Zealand Health Information Service

which is believed to be due to increased reporting of alcohol dependence and alcohol abuse as secondary diagnoses. However, the result of this is that the figures for all alcohol-related hospitalisations are not comparable over time.

Table 24 offers a breakdown of alcohol-related publicly funded hospitalisations according to ethnic background, once again using age-standardised rate that draw on Segi's world population[1].

Māori made up 17 percent of all the hospitalisations from 1996 to 1998 involving alcohol-related conditions and/or poisoning. Males accounted for 66 percent of Māori alcohol-related hospitalisations and 70 percent of all alcohol-related hospitalisations.

The 1998 age-standardised hospitalisation rate for Māori males (424.5 per 100 000 population) was 61 percent greater than the rate for non-Māori males (263.4 per 100 000 population). The Māori female hospitalisation rate in 1998 (186.9 per 100 000 population) was less than half the Māori male rate, and 77 percent higher than the non-Māori female rate (105.6 per 100 000 population).

Alcohol-related principal diagnosis

The numbers of hospitalisations where the principal diagnosis was an alcohol-related condition has remained relatively steady over the period 1996 to 1998. The hospitalisation rate in 1996 (44.5 per 100 000 population) was slightly higher than the 1998 rate (43.8 per 100 000 population).

Alcohol abuse and dependence made up more than half of the hospitalisations where the principal diagnosis was an alcohol-related condition. Overall, the hospitalisation rate for abuse/dependence has declined slightly from 1996 to 1998.

Alcohol poisoning made up approximately 5 percent of hospitalisations with a principal diagnosis of an alcohol-related discharge. The classification of alcohol poisoning is used where the ingestion of alcohol was intentional (eg, assault or attempt at self-harm), where the ingestion of alcohol was accidental, or where there was an adverse

Table 25: Publicly funded hospitalisations with an alcohol-related principal diagnosis, numbers, rates, and percentages of total, by year, 1996–98

	1996			1997			1998		
	No	Rate	%	No	Rate	%	No	Rate	%
All alcohol-related conditions	1778	44.5	100	1698	42.0	100	1793	43.8	100
Alcohol abuse or dependence, including history of	1056	26.6	59	946	23.7	56	1004	25.0	56
Alcohol poisoning	179	5.1	10	176	4.9	10	183	5.2	10
Other alcohol-related conditions	543	12.8	31	576	13.3	34	606	13.6	34

Source: New Zealand Health Information Service

[1] Waterhouse J, Muir C, Correa P, et al. 1982. Cancer Incidence in Five Continents IV. *Scientific Publications no.42*. Lyon: IARC.

effect from recreational use of alcohol. Instances of overdosing after particularly heavy drinking episodes are classified as alcohol abuse or dependence.

"Other conditions" includes alcohol-related conditions such as alcoholic psychoses, alcoholic liver disease, alcohol-induced pancreatitis, and alcoholic gastritis. There has been a rise in the hospitalisation rate for conditions such as these, and they have also increased as a proportion of hospitalisations with alcohol-related principal diagnoses.

Alcohol poisoning

Hospitals are not always able to provide clear or full descriptions of the circumstances of injury or poisoning, and alcohol involvement may not always be mentioned. The figures given here should be regarded as conservative counts and be treated as indicative only.

Table 26 shows the number of hospitalisations in 1996, 1997 and 1998 where an external cause of injury code specified that poisoning by alcohol was involved. These codes are not clinical diagnoses, but they describe the circumstances of the poisoning.

The most common circumstance was accidental poisoning by alcohol. The age-standardised hospitalisation rate of 6.0 per 100 000 population remained unchanged over the period 1996 to 1998. The second most common circumstance of alcohol poisoning was suicide and self-inflicted injury. Another drug or substance was also involved in most of these cases.

Table 26: Publicly funded hospitalisations involving alcohol poisoning, by circumstance of poisoning, numbers and rates, 1996–98

	1996		1997		1998	
	No	Rate	No	Rate	No	Rate
All external causes involving alcohol poisoning*	387	10.8	427	11.4	404	10.6
Accidental poisoning by alcohol (alcoholic beverages, other ethyl alcohol, methyl alcohol)	203	6.0	219	6.0	216	6.0
Alcohol causing adverse effects in therapeutic use	2	–	4	–	2	–
Suicide and self-inflicted poisoning by alcohol	168	4.5	202	5.1	184	4.6
Poisoning by alcohol, undetermined whether accidentally or purposefully inflicted	19	–	12	–	5	–

Note: '–' = rates less than 1 per 100 000 population.

* May not equal sum of totals by cause as more than one external cause code can be recorded per event.

Source: New Zealand Health Information Service

Tobacco

KEY FACTS

Use

- There was a 20 percent decrease in cigarette equivalents released for consumption between 1989 and 1999. Over this time loose tobacco increased as a proportion of total cigarette equivalents released for consumption, from 11 percent in 1989 to 19 percent in 1999.
- Between September 1989 and May 2000, the price of a packet of 20 cigarettes increased from $4.10 to $8.50.
- There was a 30 percent decrease in cigarette equivalents released per adult (aged 15 years and over) between 1989 and 1999.
- Approximately one in four adults (26 percent) were cigarette smokers according to the 1999 A C Nielsen survey undertaken for the Ministry of Health. Smoking by males (26 percent) and females (25 percent) was relatively similar, although smoking by women aged 15 to 24 is higher than for males of the same age.
- An Action on Smoking and Health (ASH) national survey of fourth form school students has reported regular (daily or weekly) smoking prevalence figures for 1992, 1997, 1998 and 1999 at 18, 25, 24, and 23 percent respectively for girls, and 16, 18, 19 and 19 percent respectively for boys.[1]

Mortality

- In 1990, 4500 deaths in New Zealand were attributed to tobacco smoking, accounting for 18 percent of all deaths. In 1996, approximately 4700 deaths were attributed to tobacco smoking, accounting for 17 percent of all deaths.
- There are about 388 deaths attributable to second-hand smoke ("passive smoking") in New Zealand each year according to a report prepared for the Ministry of Health in September 2000.[2] This represents an additional 8 percent over and above deaths due to direct smoking. The estimated figure of 388 deaths per year attributable to second-hand smoke represents about three-quarters of the number of people killed each year on the roads in New Zealand in recent years.

Attitudes

- A number of studies have been undertaken in New Zealand, by the National Research Bureau among others, into people's beliefs about the health effects of second-hand smoke, and their attitudes towards second-hand smoke. These studies show a generally high acceptance of the need for controls on smoking in public places and workplaces and that a large percentage of the public find exposure to second-hand smoke to be bothersome.

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[1] Scragg R, Laugesen M. Cigarette smoking by 4th form students (1992, 1997–99). In press.

[2] Woodward A, Laugeson M. 2000. *Deaths in New Zealand Attributable to Second Hand Smoke.* Unpublished report to New Zealand Ministry of Health.

NEW ZEALAND'S TOBACCO CONTROL PROGRAMME 1985–98[1]

New Zealand's tobacco control programme consists of four related strategies:

- legislation (restricting the advertising, sale and use of tobacco products)
- taxation (increasing the price of tobacco products)
- health promotion (encouraging changes in attitude and behaviour)
- cessation services (helping smokers to quit).

In 13 years, New Zealand's tobacco control programme has been successful in almost halving tobacco product consumption, particularly by lowering consumption per smoker. Between 1985 and 1998 the number of cigarette equivalents released for sale per adult (15 years and over) fell from 2493 to 1377, a reduction of 45 percent. Over the same period adult smoking prevalence (15 years and over) fell from 30 to 25 percent, while youth smoking prevalence (15–24 years) fell from 35 to 28 percent.

New Zealand had the most rapid reduction of smoking of any OECD country between 1985 and 1995. Between 1981 and 1996, consumption fell 48 percent in New Zealand as a whole, 41 percent in Canada, 40 percent in Australia, and 38 percent among Māori in New Zealand.

Table 27: New Zealand trends in tobacco and tobacco products consumption and adult and youth smoking prevalence, with OECD rankings for 1995 values and rate of change 1985–95

	1985	1990	1995	1995 OECD (1st= lowest)	1985–95 % change rank	OECD rank for rate of change 1985–95
Tobacco products/ adult consumption, cigarettes or grams roll-your-own per adult per year	2493	1959	1472	2nd of 23	–41	1st* of 23†
Cigarettes or grams roll-your-own per smoker per day	23	20	15	2nd of 21	–34	1st of 21‡
Adult smoking prevalence age 15+ years (%)	30	27	26	8th of 21	–12	9th of 21‡
Youth smoking prevalence 15–24 years (%)	35	32	29	10th of 19	–18	3rd of 17‡

* 1st = largest reduction achieved of any country in group.

† Data on tobacco products consumption per adult: 23 OECD countries compared.

‡ Data on smoking prevalences and consumption per smoker, 1995: not obtained for Switzerland; Turkey; for youth prevalence not for Belgium, Denmark, Greece, Japan, Switzerland, Turkey. Netherlands data were for ages 15–19 years. In a few years, prevalences were estimated from adjacent year values.

[1] This information in this section is from: Laugesen M, Swinburn B. 2000. New Zealand's tobacco control programme 1985–1998. *Journal of Tobacco Control* 9: 155-162.

Laugesen and Swinburn's review of New Zealand's tobacco control programme showed that, despite not attaining its original prevalence target (20 percent adult smoking prevalence by 2000), the tobacco control programme has fulfilled many of its original aims and has successfully reduced smoking since 1985. Smoking rates in adolescents, Māori, and those of low socioeconomic status, while remaining high, have also reduced over this time period. Exposure to second-hand smoke at work has also reduced. Cigarette-attributable mortality has declined significantly for males including Māori, and is declining in women under 70 years in the total population, although not for Māori.

Tobacco production

Loose tobacco is used in roll-your-own cigarettes and as pipe tobacco. Overall there was a 36 percent increase in loose tobacco available for consumption from 1989 to 1999. Over this period, the quantity of loose tobacco released for consumption increased by a third (33 percent), as shown in Figure 21. From 1993 to 1994 there was a 14 percent dip in loose tobacco available for sale, although there was no change in price. There was a further dip of 19 percent from 1995 to 1996 in loose tobacco available for consumption that coincided with a 7 percent increase in the price of loose tobacco products.

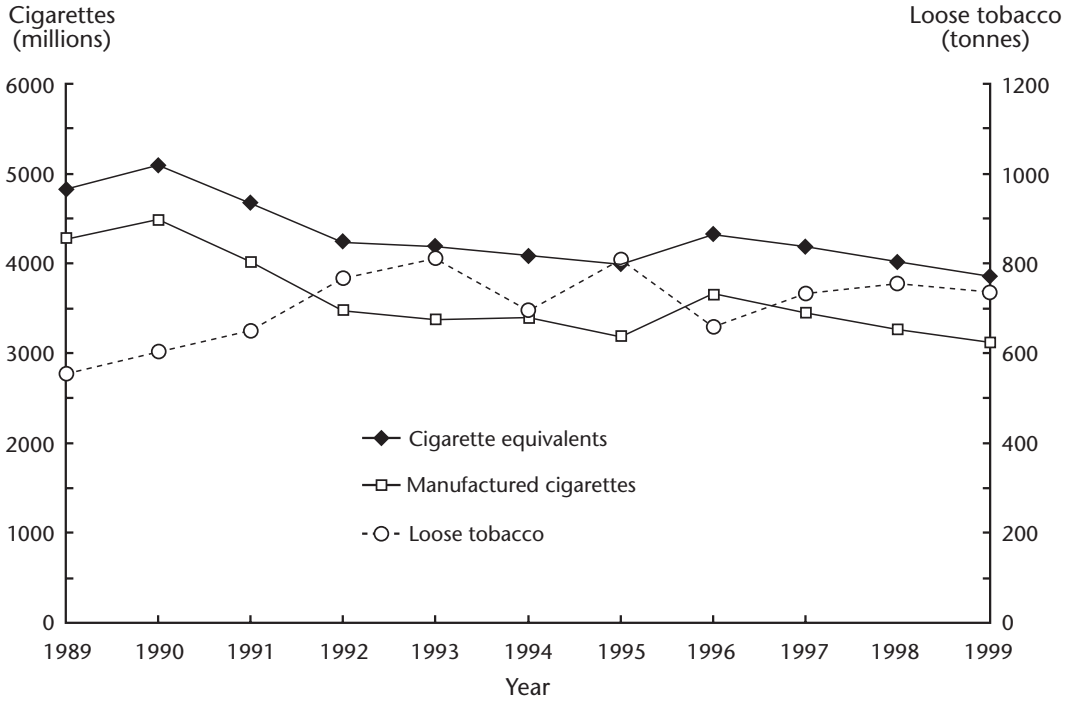

Figure 21: *Tobacco available annually for consumption, manufactured cogarettes, loose tobacco, and total cigarette equivalents*[1]*, 1989–99*

Source: Staistics New Zealand, Production Statistics

[1] Cigarette equivalents consist of the number of manufactured cigarettes plus loose tobacco. One gram of loose tobacco is counted as one cigarette equivalent, and therefore one tonne of loose tobacco counts as one million cigarettes. With the use of filters, the average manufactured cigarette contains less than one gram of tobacco. Cigars are excluded.

Table 28: Tobacco products released for consumption in New Zealand, 1970–99

Year	Tobacco products released		Number of cigarette equivalents† released per adult aged 15+ years		
	Loose tobacco (tonnes*)	Manufactured cigarettes (millions)	Loose tobacco	Manufactured cigarettes	Total
1970	1024	4952	534	2581	3114
1971	965	5118	493	2615	3108
1972	934	5405	468	2705	3173
1973	853	5526	416	2697	3113
1974	782	5769	371	2740	3112
1975	749	6229	347	2885	3232
1976	702	6230	319	2835	3154
1977	666	6346	300	2857	3157
1978	610	6268	272	2794	3066
1979	575	6130	255	2715	2970
1980	548	5991	239	2617	2856
1981	553	6168	239	2666	2905
1982	539	6112	230	2603	2832
1983	546	6089	228	2541	2769
1984	534	6236	219	2560	2779
1985	493	5654	200	2293	2493
1986	501	5223	202	2102	2304
1987	511	5361	203	2125	2327
1988	552	5355	217	2101	2317
1989	554	4270	216	1662	1877
1990	602	4489	233	1738	1971
1991	652	4014	243	1495	1738
1992	768	3466	283	1277	1560
1993	810	3381	295	1232	1527
1994	694	3396	249	1221	1470
1995	808	3338	287	1187	1474
1996	658	3660	230	1280	1511
1997	733	3449	253	1191	1444
1998	757	3263	259	1118	1377
1999	736	3119	251	1062	1312

* One tonne is 1000 kg (one million grams)

† One cigarette equivalent equals one manufactured cigarette or one gram of loose tobacco

Source: Statistics New Zealand

Notes:

1. Cigarette equivalents per adult for 1991–99 are calculated using resident population estimates and projections obtained from Statistics New Zealand in 2000. These estimates and projections include New Zealand residents temporarily overseas and are adjusted for census undercount. Projections are based on assumptions of medium fertility, mortality and migration.
2. Calculations of cigarette equivalents are based on excise data on manufactured cigarettes and loose tobacco released for sale. Loose tobacco is mainly cigarette tobacco but includes a small amount of pipe tobacco. Cigars are not included.

The trend for manufactured cigarettes available for consumption differed from that for loose tobacco. Whereas loose tobacco availability increased over the 10 years ending 1999, there was a 27 percent decrease in the number of manufactured cigarettes available for consumption.

Combining loose tobacco and manufactured cigarettes into cigarette equivalents available for consumption provides a measure of total tobacco consumption in New Zealand. There was a 30 percent drop in cigarette equivalents released per adult for consumption between 1989 and 1999.

Over this period loose tobacco increased as a proportion of total cigarette equivalents available for consumption, rising from 11 percent in 1989 to 19 percent in 1999.

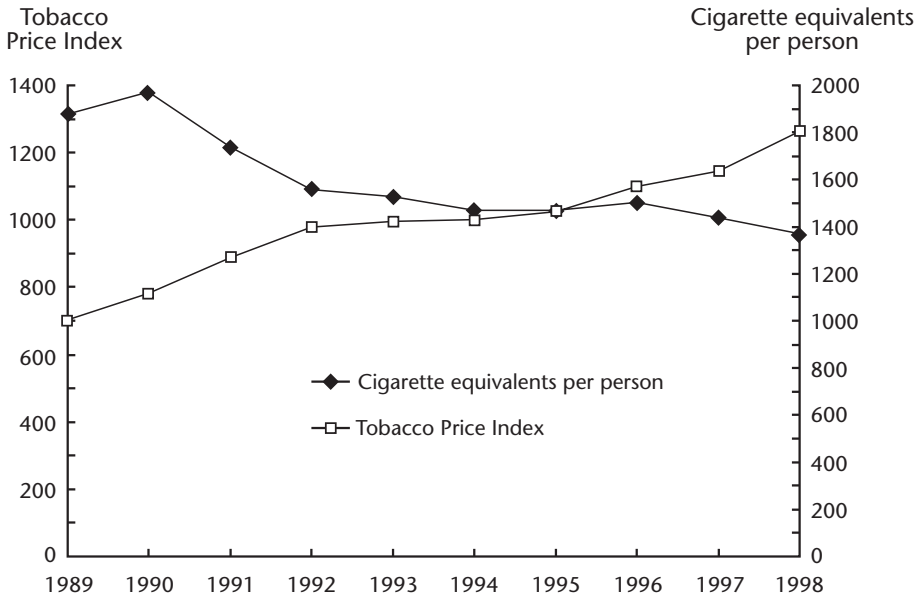

Figure 22: *Available cigarette equivalents per person[1] aged 15 years and over, and Tobacco Price Index, 1989–98*

There was an 80 percent increase in the price of tobacco products in the 10-year period 1989–98, as shown in Figure 22. The greatest increases were at the beginning and the end of the 10-year period.

The apparent consumption of tobacco products per head of population aged 15 years and over mirrored the trend of tobacco products available for consumption. Overall, there was a 30 percent decrease in cigarette equivalents released per adult (aged 15 years and over) between 1989 and 1999. From 1990 to 1991, apparent tobacco consumption per head dipped 12 percent followed by a 10 percent drop between 1991 and 1992.

TOBACCO USE

National Health Surveys run in 1992/93 and 1996/97 gathered data on tobacco and cigarette smoking. The 1992/93 Household Health Survey's smoking question was not comparable with that of the 1996/97 New Zealand Health Survey and the Census (1981, 1996). The 1992/93 Household Health Survey asked about tobacco smoking, rather than

[1] Population estimates for 1991–98 are based on the resident population concept, and are not strictly comparable with estimates for earlier years, which are based on the de facto population concept. "Usually resident" populations lead to lower rates than the corresponding "de facto" populations.

just cigarette smoking, as asked in the 1996/97 New Zealand Health Survey and Census. Furthermore, in the Census and the 1996/97 New Zealand Health Survey a smoker is defined as someone who smokes one or more cigarettes per day, whereas in the 1992/93 Household Health Survey, tobacco smokers were self-defined.

Also note that the definition of ethnicity used in the Census changed over this period of time and therefore any apparent trends in the ethnicity statistics may not accurately reflect actual changes in consumption behaviour.

The Ministry of Health contracts A C Nielsen Ltd to undertake a quarterly survey of smoking prevalence. The data from these surveys is available for the period from 1983 to the present.

Cigarette smoking information presented relates only to the adult population aged 15 years and over.

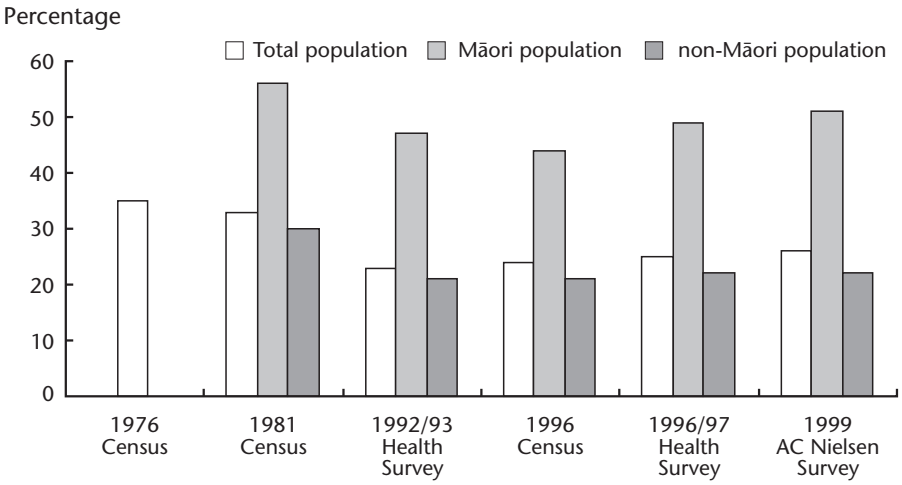

Figure 23: *Percentage of population aged 15 years and over smoking, by ethnicity, 1976–96/99*

Smoking prevalence

Cigarette smoking prevalence decreased by 31 percent between the 1976 Census and the 1996 Census, as shown in Figure 23. Māori cigarette smoking decreased by 21 percent and non-Māori cigarette smoking decreased by 30 percent between the 1981 Census and 1996 the Census.

Table 29: Percentage and status of cigarette smokers by age and sex, 1976 Census

Age group	Non-smoker		Ex-smoker		Smoker	
	Male	Female	Male	Female	Male	Female
15–24	56	58	8	8	36	34
25–44	38	51	19	12	43	36
45–64	26	54	32	14	42	31
65+	28	74	42	12	30	14
Total	38	57	22	12	40	31
Total both sexes	48		17		35	

Source: Statistics New Zealand, Census of Population and Dwellings, 1976

According to the 1976 Census, 35 percent of the population aged 15 years and over were smokers. Males were more likely to smoke than females at all ages, as shown in Table 29. Those in the 25-to-44-year-old age group were the most likely (40 percent) to smoke.

Table 30: Percentage of cigarette smokers by age, sex and ethnicity, 1981 Census

Age group	European		Māori		Pacific peoples		Other		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
15–24	30	32	55	63	35	28	17	10	33	35
25–44	36	31	57	62	46	23	29	10	38	33
45–64	35	28	47	47	46	24	30	11	36	29
65+	25	13	34	27	37	15	31	11	25	14
Total	33	28	54	58	42	35	25	10	34	30
Total both sexes	30		56		33		18		32	

Source: Statistics New Zealand, Census of Population and Dwellings, 1981

By the 1981 Census the proportion of the adult population who were smokers had dropped to 32 percent. More than half of Māori (56 percent) smoked, as shown in Table 30. Young Māori women aged 15 to 24 years were the most likely to smoke (63 percent).

Table 31: Percentage of population smoking tobacco by age, sex, and ethnicity, 1992/93 Household Health Survey

Age group	European		Māori		Pacific peoples		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
15–24	20	24	35	49	..	..	22	27
25–44	26	22	49	58	45	..	29	25
45–64	22	20	..	..	..	..	24	22
65+	14	9	..	..	..	..	14	10
Total	22	21	43	47	37	29	24	23

Note: '..' = estimate too small to be reliable (sample size <15 000)

Source: Statistics New Zealand and Ministry of Health, 1992/93 Household Health Survey

Twenty-three percent of adults reported that they were current tobacco smokers in the 1992/93 Household Health Survey, with people aged 65 years and over the least likely to smoke. Males in this age group (24 percent) were slightly more likely to smoke than females (22 percent) as shown in Table 31. This pattern was true across all age groups with the exception of the 15-to-24-year-old group, where a higher proportion of women than men were smokers. Nearly half of Māori (47 percent) were tobacco smokers in 1992/93. Māori women aged 25 to 44 years were the most likely to smoke tobacco (58 percent).

Table 32: Percentage of population smoking tobacco by age, sex and ethnicity, 1996/97 Household Health Survey

Age group	European		Māori		Pacific peoples		Total	
	Male	Female	Male	Female	Male	Female	Male	Female
15–24	25	27	38	56	19	19	25	29
25–44	31	25	53	58	34	26	33	28
45–64	21	19	34	41	47	14	22	20
65+	15	9	35	22	49	9	16	10
Total	25	21	44	53	35	21	27	23
Total both sexes	23		49		28		25	

Source: Statistics New Zealand and Ministry of Health, 1996/97 Household Health Survey

One in four adults (24 percent) were cigarette smokers according to the 1996/97 New Zealand Health Survey. As with the 1992/93 Health Survey, males (27 percent) were more likely to smoke tobacco than females (23 percent). A greater percentage of people reported that they were ex-cigarette smokers in the 1996/97 survey (25 percent) than in the 1992/93 survey (19 percent).

Cigarette smoking in 1996/97 was higher than in 1992/93 for 15-to-44-year-olds. Table 32 shows that Māori women aged 25 to 44 years continued to have the highest smoking prevalence rate (58 percent) in 1996/97.

Table 33: Percentage of cigarette smokers by age, sex and ethnicity, 1996 Census

Age group	European		Māori		Pacific peoples		Asian		Other		Total	
	M	F	M	F	M	F	M	F	M	F	M	F
15–24	24	25	37	47	27	24	13	5	18	14	26	28
25–44	27	25	45	53	40	29	23	5	30	16	30	28
45–64	21	18	36	40	37	19	18	4	23	16	23	20
65+	12	9	21	19	24	11	16	5	16	11	12	9
Total	22	20	40	47	35	25	19	5	26	15	25	23
Total both sexes	21		44		30		11		21		24	

Source: Statistics New Zealand, Census of Population and Dwellings, 1996

The 1996 Census recorded a drop from the 1981 Census in the proportion of the adult population who were smokers, to 24 percent. Māori smoking rates dropped 12 percentage points to 44 percent. Amongst Māori women aged 15 to 24 the smoking rate dropped 16 percentage points to 47 percent, as shown in Table 33. This finding differs markedly from the 1996/97 New Zealand Health Survey, which found that 56 percent of Māori women aged 15 to 24 years smoked.

Table 34: Percentage of cigarette smokers by personal income group, 1996

Income group	Smoker	Ex-smoker	Never smoked regularly	Total
Loss – $10,000	23	18	59	100
$10,001 – $20,000	26	24	50	100
$20,001 – $30,000	27	22	51	100
$30,001 – $50,000	21	25	54	100
$50,001+	14	28	58	100
Total	24	22	54	100

Source: Statistics New Zealand, Census of Population and Dwellings, 1996

The 1996 Census showed that high-income adults were less likely to smoke than those with middle and low incomes, as shown in Table 34.

Current prevalence and trends

While there was an appreciable decline in smoking prevalence during the 1980s, smoking prevalence has decreased only slightly in the 1990s (approximately 2 percentage points from 1990 to 1999). In 1999, smoking prevalence in those aged 15 years and over was 26 percent. One in two Māori, around one in three Pacific peoples, and around one in four of European and other ethnic groups were cigarette smokers in 1999.

Prevalence between 1985 and 2000

While cigarette smoking prevalence for all ages combined has declined by 5 percentage points over the last 16 years, there has been little improvement for those younger than 35 years of age. For ages 15 to 24 years, smoking prevalence initially decreased, but from 1992 the prevalence fluctuated without any clear trend. For this youngest age group, smoking is more common among females than males. In 2000, prevalence in females was 31 percent, and in males 28 percent.

For ages 25 to 34 years, smoking prevalence fluctuated without any clear trend. This age group has tended to have the highest smoking prevalence (closely followed by 15-to-24-year-olds), with 35 percent of males and 37 percent of females being smokers in 2000. Smokers now aged 25 to 34 years would probably have started to smoke in the early 1980s, when cigarettes were more affordable than at present.

Among those aged 35 to 54 years, smoking prevalence fell by 4 percentage points for both males and females. For men aged 55 years and over, smoking prevalence fell by 12 percentage points, and for women by 6 percentage points.

Prevalence between 1976 and 2000

Cigarette smoking prevalence between 1976 and 2000 has declined overall by 30 percent. However, there has been little decline in smoking prevalence for women under the age of 25 years (Table 35).

Table 35: Percentage prevalence of cigarette smoking in New Zealand, 1976–2000

	Year																			
	1976	**1981**	**1983**	**1984**	**1985**	**1986**	**1987**	**1988**	**1989**	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**	**1997**	**1998**	**1999**	**2000**
Males																				
15–24 years	35	33	34	35	31	31	32	27	28	30	28	25	28	28	25	27	27	27	30	28
25–34 years	43	38	38	39	35	32	34	38	30	32	35	34	35	36	35	33	30	34	33	35
35–54 years	44	38	37	35	31	29	34	31	28	30	27	29	30	30	29	26	28	28	27	27
55+ years	35	30	29	27	24	24	22	20	20	18	18	18	19	17	19	19	16	16	16	12
Total males	40	35	35	34	30	29	31	29	27	28	27	27	28	28	27	26	26	26	26	25
Females																				
15–24 years	34	35	40	40	40	37	36	39	37	34	33	33	30	34	33	36	35	30	33	31
25–34 years	38	34	35	34	34	34	35	35	33	32	30	36	34	33	36	35	36	31	32	37
35–54 years	35	32	31	29	29	32	26	28	25	28	24	27	26	25	25	26	26	26	26	25
55+ years	21	19	21	22	19	21	19	16	16	16	16	14	16	16	14	13	14	12	13	13
Total females	32	29	31	31	30	31	28	29	27	27	26	27	26	26	26	26	27	24	25	25
Both sexes																				
Māori	58	56	-	-	-	-	-	-	-	51	50	52	54	52	51	49	51	49	51	49
Pacific peoples	35	33	-	-	-	-	-	-	-	32	30	33	33	34	34	32	34	33	30	31
European/Other	-	-	-	-	-	-	-	-	-	25	24	24	24	24	24	23	23	22	22	22
Total population (15+ years)	36	32	33	32	30	30	30	29	27	28	26	27	27	27	27	26	26	25	26	25

Source: 1976 and 1981 Census of Population and Dwellings, Department of Statistics; 1983–99 A C Nielsen (NZ) Ltd (formerly OTR Spectrum Research)

YOUTH SMOKING

Fourth form surveys

A source of information about young people's smoking prevalence is the Action on Smoking and Health (ASH) national surveys of fourth form school students. Fourth form students (14-to-15-year-olds) were surveyed in November of 1992, 1997, 1998 and 1999.

Regular (daily or weekly) smoking prevalence figures for 1992, 1997, 1998 and 1999 were 18, 25, 24, and 23 percent respectively for girls, and 16, 18, 19 and 19 percent respectively for boys.

Table 36: Percentage distribution of fourth-form students by smoking category in 1992, 1997, 1998 and 1999

Smoking category	Girls				Boys			
	1992 *n*=5785	**1997** *n*=5372	**1998** *n*=5801	**1999** *n*=6188	**1992** *n*=4579	**1997** *n*=4256	**1998** *n*=4573	**1999** *n*=4728
Smoker –								
Daily	12.0	16.3**	15.7**	15.2**†	11.1	13.1**	12.4*	13.5**
Weekly	6.2	8.2**	8.7**	7.7**	5.2	4.9	6.1*†	5.1‡‡
Monthly	7.0	7.2	7.2	7.1	4.1	5.1	4.3†	5.5**‡‡
Less often	12.4	11.6	11.9	14.3**†††‡	11.7	11.3	11.2	13.6**††‡‡
Previously smoked	28.4	26.3*	24.9**	22.6††‡‡	29.6	30.0	30.0	26.5*††‡‡
Never smoked	33.8	30.4**	31.6**	33.1*†††‡	38.3	35.7**	36.0**	35.8**

*= $p<0.05$, **= $p<0.01$, compared with 1992 students of same sex-smoking category, adjusting for age and ethnicity.

†= $p<0.05$,††= $p<0.01$ compared with 1997 students of same sex-smoking category, adjusting for age and ethnicity.

‡= $p<0.05$, ‡‡= $p<0.01$, compared with 1998 students of same sex-smoking category, adjusting for age and ethnicity.

TOBACCO-RELATED MORTALITY

Direct smoking

The risk of early death is one in two for the individual smoker who continues to smoke through adulthood. Those who die early from smoking die, on average, 14 years early. It is beneficial to stop smoking at any age. The earlier smoking is stopped, the greater the gain.[1] Half of the smokers who die early from tobacco die in middle age (35 to 69 years). One in four smokers who die from smoking in old age (aged 70 years and over) die, on average, eight years early. The one in four New Zealand smokers who die from smoking in middle age die, on average, 22 years earlier than the average person who never smoked.[2]

[1] Doll R, Peto R, Wheatley K, et al. 1994. Mortality in relation to smoking: 40 years' observations on male British doctors. *British Medical Journal* 309: 901-911.

[2] Peto R, Lopez A D, Boreham J, et al. 1994. *Mortality from Smoking in Developed Countries 1950–2000*. Oxford: Oxford University Press.

In 1990, 4500 deaths in New Zealand were attributed to tobacco smoking, accounting for 18 percent of all deaths.[1] In 1996, approximately 4700 deaths were attributed to tobacco smoking, accounting for 17 percent of all deaths.

Eleven percent of all female deaths and 22 percent of all male deaths were attributed to tobacco smoking in 1990. For both men and women, nearly half of these deaths occurred in middle age (35 to 69 years).[1] Deaths attributable to tobacco smoking for females increased from 1400 deaths per year in 1990 to 1800 in 1996. For males, a decrease in tobacco-attributed deaths was observed over the same period.

After a population takes up tobacco smoking it takes 30 to 40 years before tobacco death rates reach their maximum. After smoking declines there is a 10-year lag before death rates begin to decline.[2] The tobacco death rate follows the trend of the lung cancer rate, which continues to decline for men. However, the lung cancer rate has not yet declined for women.[3]

Table 37: Mortality, whether cigarette smoking attributable or not, in New Zealand in middle age (age 35 to 69 years), 1975 to 1996, annual rates per 1000 persons, age standardised

	Death rates per 1000*					1985–96 change (%)
	1975	1985	1990	1995	1996	
Male, cigarette attributable	4.57	3.67	2.89	2.41	2.31	–37
Male, all other mortality	9.48	8.21	7.16	6.57	6.53	–21
Female, cigarette attributable	1.01	1.35	1.33	1.28	1.21	–10
Female, all other mortality	6.50	5.42	5.01	4.45	4.34	–20

* mean of seven age specific rates, age 35 to 69 years

Source: Laugesen M, Swinburn B. 2000. New Zealand's tobacco control programme 1985–1998. *Journal of Tobacco Control 9*: 155-162.

Deaths in New Zealand attributable to second-hand smoke

There are about 388 deaths attributable to second-hand smoke ("passive smoking") in New Zealand each year according to a report prepared for the Ministry of Health in September 2000.[4] This figure represents an additional 8 percent over and above deaths per year due to direct smoking and is about three-quarters of the number of people who have been killed each year on the roads in New Zealand in recent years. However, there are many uncertainties associated with this calculation. The authors of the report explored the effect of varying the assumptions on which the estimate is based, and on this basis suggest a plausible range of 180 to 621 deaths per year. Extrapolations from other national estimates of deaths attributable to second-hand smoke overlap this range.

[1] Peto R, Lopez A D, Boreham J, et al. 1994. *Mortality from Smoking in Developed Countries 1950–2000*. Oxford: Oxford University Press.
[2] Lopez A D, Collishaw N E, Piha P. 1994. A descriptive model of the cigarette epidemic in developed countries. *Journal of Tobacco Control* 3: 242-247.
[3] Ministry of Health. 2000. *Mortality and Demographic Data 1997*. Wellington: New Zealand Health Information Service, Ministry of Health.
[4] Woodward A, Laugesen M. 2000. *Deaths in New Zealand Attributable to Second Hand Smoke*. Report to the New Zealand Ministry of Health, September 2000. (Available at *www.moh.govt.nz*.)

The greatest risk of exposure to second-hand smoke occurs at work and in the home — accountable for an estimated 145 deaths and 193 deaths respectively. It is also estimated that 50 of the 109 Sudden Infant Death Syndrome (SIDS) deaths recorded in 1996 were attributable to second-hand smoke.

Table 38: Summary of estimated number of deaths attributable to second-hand smoke (includes stroke deaths before age 75, otherwise deaths at any age)

	Work	Home	Total
Heart disease	98.4	144.8	243.3
Stroke	43.0	44.7	87.7
SIDS	–	50	50
Lung cancer	3.5	3.7	7.2
All causes			388.2

TOBACCO TAXATION AND PRICE

New Zealand's excise on tobacco products is indexed to the consumer price index (CPI) and adjusted annually to keep the real price of tobacco relatively consistent over time. Goods and Services Tax (GST) of 12.5 percent also applies on top of the final price. In addition to the CPI adjustments, there have been periodic tax increases as well, most recently in 1995, 1998 and 2000.

Tax take and costs associated with tobacco smoking

In the year to June 2000 the tax revenue earned from the excise duty on tobacco products was $821 million, excluding GST.[1]

The cost from tobacco use to New Zealand publicly funded personal healthcare services in 1987 was estimated at $202 million in 1992 dollars, or $222 million in 2000 dollars.[2]

The cost of tobacco products use to New Zealand in 1988 was estimated at $1.9 billion in 1992 dollars, without counting passive smoking costs. Illness care costs, loss of earnings of the deceased, and an estimate of the value of the life of the prematurely deceased were included, but not grief and suffering or the cost of fires.[2]

Recent tax increases

In December 1995, the excise on roll-your-own tobacco, cigars and pipe tobacco was equalised (on a weight-for-weight basis) with the excise on manufactured cigarettes. Equalising the tax meant a 37.5 percent increase in the excise on tobacco products other than manufactured cigarettes. After the December 1995 increase, manufactured cigarette consumption increased 5 percent, while loose tobacco consumption fell by 17 percent. Total consumption remained almost unchanged.

[1] *Source:* The Treasury

[2] Tobacco Products: The Public Health Commission's Advice to the Minister of Health 1993–1994.

In May 1998 there was an increase in the excise on tobacco products equating to a 10 percent increase in the price of all tobacco products (56 cents per packet of 20 cigarettes). As a result, loose tobacco consumption increased by 2 percent and manufactured cigarette consumption decreased by 8 percent. Total consumption decreased by approximately 6 percent overall.

The excise in tobacco products was raised again in May 2000, increasing the price of tobacco by approximately 14 percent (one dollar per pack of 20 cigarettes). It is too early to judge the long-term effect that this excise increase will have on tobacco consumption.

ATTITUDES AND BELIEFS CONCERNING SECOND-HAND SMOKE

A number of studies have been undertaken in New Zealand, by the National Research Bureau, among others, into beliefs about the health effects associated with second-hand smoke, and people's attitudes to second-hand smoke. Second-hand smoke is also variously referred to as "environmental tobacco smoke"' or "passive smoking".

This publication selectively presents data from four National Research Bureau (NRB) reports of telephone surveys of the public. These documents contain a wealth of information and people interested in this subject are referred to them (available from the National Drug Policy web site at *www.ndp.govt.nz*).

- NRB, 1989. *Social Research Report: Heart Health Behaviour of Adult New Zealanders*. Prepared for the Health Department, November 1989. (unpublished report)
- NRB. 1991. *Social Research Report: Monitor of Heart Health Behaviour of Adult New Zealanders (Second Reading)*. Prepared for the Health Department, November 1991. (unpublished report)
- NRB. 1996. *Environmental Tobacco Smoke Study*. Prepared for the Ministry of Health, July 1996. (unpublished report)
- NRB. 1999. *Attitudes Toward Environmental Tobacco Smoke*. (unpublished report).

All surveys were of people aged 15 and above. The sample sizes for the studies were: 2698 (1999), 2020 (1996), 2000 (1991), and 2300 (1989). Key results from these surveys are presented below.

Beliefs about the health effects of second-hand smoke

In 1989 and 1991, people were asked whether they agreed or disagreed with the statement: *"The health of non-smokers can be damaged by other people's tobacco smoke."*

The results (see Table 39) show that between 1989 and 1991 there was little change in the total agreeing with this statement (strongly agree and agree combined). Both smokers and non-smokers who supported the statement were more likely to agree strongly with it in 1991 than they were in 1989.

Attitudes to other people's smoking

In 1996 and 1999, people who were surveyed were asked their reaction to passive smoking. The questions were phrased slightly differently, but give an indication of attitudes over time. In both studies, respondents were asked to classify their reaction to someone smoking cigarettes near them. In 1996, 68 percent of respondents reported that they found other people's smoking bothersome to some degree. In 1999, 72 percent of respondents found other people's smoking bothersome (Table 40).

Table 39: Results from National Research Bureau survey question: *"The health of non-smokers can be damaged by other people's tobacco smoke"*

	1989 (%)	1991 (%)
Strongly agree	36	55
Agree	48	31
Neither agree, nor disagree	6	4
Disagree	5	5
Strongly disagree	1	2
Don't know	4	3
Smokers agreeing	66	74
Former smokers agreeing	84	82
Non-smokers agreeing	91	93

Table 40: Results from National Research Bureau survey questions on attitudes to other people's smoke

1996 study *n* = 855	(%)	1999 study *n* = 2698	(%)
Enjoyable on the whole:	1	Enjoyable on the whole:	4
		Slightly enjoyable:	3
Did not bother	31	Neither enjoyable nor bothersome	21
Bothered slightly	32	Slightly bothersome:	24
Bothered a lot	36	Bothersome on the whole	48

Table 41: *Results from 1989 National Research Bureau survey question: "Smoking should not be allowed in public places"*

	(%)
Total agreeing	80
Males agreeing	78
Females agreeing	81
Māori agreeing	65
Pacific peoples agreeing	69
People of European descent agreeing	82
Smokers agreeing	60
Former smokers agreeing	78
Non-smokers agreeing	89

In 1996, the NRB asked people the degree to which they were worried about breathing other people's smoke. The results show that almost half of adults (46 percent) who responded were not worried about breathing other people's cigarette smoke. Fifty-four percent were quite worried or very worried.

The NRB surveys included questions asking whether smoking should be restricted in public places. Unfortunately, the findings are not comparable in many cases as questions have been variously phrased, perhaps to measure public opinion on issues of concern or interest at the time.

For example, in 1989 people were asked if they agreed or disagreed with the statement: *"Smoking should not be allowed in enclosed public places."* This related to the then current debate over proposed legislation restricting smoking in workplaces and public places (the Smoke-free Environments Act 1990). The results (Table 41) show that a majority of people supported restrictions on smoking in enclosed public areas.

However, the 1999 survey looked at specific venues and asked whether people supported smoking in certain public places. The findings are presented in Table 42.

Table 42: Results from 1999 National Research Bureau survey question: *"Do you think that, in general, smoking should be allowed in the following places?"*

	(%)
Enclosed shopping centres and malls	13
Housie halls	19
Sporting clubs	32
Nightclubs	50
Open sports stadiums	55

Views on smoking in workplaces

In 1989, the NRB asked: *"A new law is proposed which would require places of employment to provide smoke-free working conditions for non-smokers. That is, any smoking which took place would have to be in specially designated areas away from non-smokers. Would you support or oppose such a law?"* The results are shown in Table 43.

Table 43: Results from 1989 National Research Bureau survey questions on support for new law

	(%)
Support	80
Oppose	12
Don't know	8
Non-smokers supporting	87
Former smokers supporting	78
Current smokers supporting	63

In 1999, the NRB asked people whether they agreed with certain statements. The statements, and the level of agreement with these, are provided in Table 44.

Table 44: Results from 1999 National Research Bureau survey on level of agreement with certain statements

	Strongly agree (%)	Agree (%)	No feeling either way (%)	Disagree (%)	Strongly disagree (%)
People should be allowed to smoke wherever they like at work	2	5	2	45	46
All workplaces should be entirely smokefree	24	35	5	32	4
Smoking should not be allowed in any workplace where non-smokers have to work	31	47	5	15	2
Smoking should be allowed in a workplace if everyone in that area agrees	6	56	4	25	9
The only place smoking should be allowed is in designated, ventilated rooms or areas	23	64	2	8	3

Exposure to second-hand smoke in the workplace

The 1989, 1991 and 1996 reports all presented various questions relating to actual exposure to second-hand smoke in workplaces. Three questions, asked at each survey, sought to identify how many people were exposed to other people's smoke during tea breaks, lunch breaks and actual working times. The questions asked people to report the number of people smoking cigarettes into the air around them at these times.

Table 45 presents the data indicating the proportion of workers who were exposed to other people's smoking (smoking by one or more people) in their workplaces in those situations.

Table 45: Results from National Research Bureau survey questions on exposure to other people's smoking

	1989 (%)	1991 (%)	1996 (%)
Exposed during tea breaks	53	39	36
Exposed during lunch breaks	48	36	36
Exposed during actual working hours	31	21	19

Table 45 illustrates that between 1989 and 1991 there was a significant drop in the proportion of people exposed to other people's smoking at work. The Smoke-free Environments Act 1990 had banned smoking in shared office situations and some other limited situations. However, there has been little change in the situation since 1991 (the 1990 Act did not really address smoking in workplaces other than offices — for example, factories, hospitality venues, and other "blue-collar" workplaces).

Exposure to second-hand smoke in the home

The 1989, 1991 and 1996 NRB surveys also asked people whether they were regularly exposed to passive smoking at home. Over time there has been little change in people reporting no exposure, or exposure to either one, two or three or more people, or to visitors' smoking. By far the majority of people report no regular exposure at home (74 percent in 1989, 75 percent in 1991 and 72 percent in 1996).

Views on smoking in hospitality venues

The 1989, 1991 and 1996 surveys asked people to identify the indoor places that have the smokiest air.

By far the smokiest venues were bars, with one in two respondents reporting these as the smokiest venues they attend (Table 46).

Table 46: Results from National Research Bureau survey questions on views on which indoor venues have the smokiest air

	1989 (%)	1991 (%)	1996 (%)
Pubs/bars	51	53	49
Restaurants, cafés, coffee shops	12	10	9
Other people's homes	8	8	6
Own home	5	5	3
Work place	6	4	4
Casinos	n/a	n/a	2
Other places	3	1	9
Nowhere	12	16	14
Don't know	3	3	5

The 1999 NRB survey asked a series of questions about whether people supported smoking restrictions in restaurants, bars and other hospitality venues. Such venues are both public places and workplaces.

Respondents were asked to express agreement or disagreement with options for restricting smoking in hospitality venues. They were first asked their views on various proposed restrictions on smoking in bars. The results are shown in Table 47.

Seventy-nine percent of people supported some form of restrictions on smoking in bars, including 62 percent of smokers and 85 percent of non-smokers. The 1999 NRB report also presented age-specific and ethnic-specific data, which indicated that 70 percent of respondents in the 15-to-24 and 25-to-34 age groups, 83 percent of people aged 35 to 54 and 89 percent of people aged over 55, supported some form of restriction on smoking in bars. Seventy-nine percent of Māori and people of European descent supported some form of restriction on smoking in bars, as did 91 percent of Pacific peoples.

Table 47: Results from 1999 National Research Bureau survey questions on preferences for smoking restrictions in bars: *"Do you think that bars should …?"*

	Total (%)	Current non-smokers (%)	Current smokers (%)
Have no restrictions on smoking at all	19	13	36
Have 50 percent of floor area non-smoking	28	26	34
Have smoking only in separate rooms so smoke can't drift into non-smoking areas	41	46	26
Have no smoking allowed at all	10	13	2
No opinion	2	2	2

A similar question was asked in relation to smoking restrictions in restaurants, cafés and food halls. The results are shown in Table 48.

Table 48: Results from 1999 National Research Bureau survey questions on preferences for smoking restrictions in eating places: *"Do you think that restaurants, cafés and food halls should …?"*

	Total (%)	Current non-smokers (%)	Current smokers (%)
Have no restrictions on smoking at all	3	2	4
Have 50 percent of floor area non-smoking	23	19	39
Have smoking only in separate rooms so smoke can't drift into non-smoking areas	39	40	36
Have no smoking allowed at all	35	39	20
No opinion	–	–	1

The Smoke-free Environments Act 1990 currently provides for a minimum of 50 percent of seating in eating places to be designated as smoke-free. Thus, having separate rooms for smoking, or having no smoking permitted at all can be considered "stricter" requirements than are currently in place. On this basis, the above table shows that 74 percent of people (including 79 percent of non-smokers and 56 percent of smokers) support stricter controls on smoking in restaurants, cafes and food halls.

The NRB report also presents ethnic-specific and age-specific data. The report indicates that 71 percent of people aged 15 to 24, 65 percent of people aged 25 to 34, 78 percent of people aged 35 to 54 and 83 percent of people aged over 55 support stricter controls on smoking in such venues. Sixty-nine percent of Māori, 74 percent of people of European descent and 76 percent of Pacific peoples support stricter controls.

Cannabis

KEY FACTS

Use

- Marijuana is the third most popular recreational drug in New Zealand after alcohol and tobacco (excluding caffeine).
- In the 1998 National Drugs Survey, 43 percent of males and 27 percent of females aged 18 to 24 years had used marijuana in the preceding 12 months. Most of those who stated that they had tried marijuana had been introduced to the drug at between 14 and 18 years of age.

Crime

- About 70 percent of prosecutions (18 720 prosecutions) for offences involving cannabis resulted in a conviction (13 120 convictions) in 1998. Approximately 85 percent of convictions for cannabis offences each year are of males.
- In 1998 the largest number of convictions were for those between 30 and 39 years old (30 percent of all convicted cases). The age group with the second highest proportion was those aged 20 to 24 years, with 24 percent of all convicted cases.

Mortality

- There were seven deaths over the period 1990–96 where a cannabis-related condition such as drug abuse or dependence was the underlying cause of death.

Hospitalisations

- There were 2722 cannabis-related hospitalisations over the period from 1996 to 1998. There were 4.5 publicly funded hospitalisations per 100 000 population in 1998 where a diagnosis of a cannabis-related condition or poisoning was recorded.

MARIJUANA[1] *SUPPLY*

Marijuana is an illegal drug, and is supplied through informal networks. The 1998 National Drug Survey asked questions about supply of marijuana, and found that 42 percent of users had obtained all of their marijuana by being given it, only 8 percent had obtained theirs exclusively by purchase, and 1 percent grew all of their own. The remainder (49 percent) had obtained their supply by a combination of gift, purchase, or growing their own, in varying proportions.

Many current users of marijuana do not actively pursue acquisition of the drug. Forty-five percent of current marijuana users stated that they had never tried to maintain some on hand. A further 17 percent of users stated that they rarely tried to obtain marijuana. Fourteen percent of users had, however, always or at least most of the time tried to keep some marijuana on hand.

Māori

The 1998 report on Māori drug use, *Te Ao Taru Kino*[2], found that most Māori marijuana users do not keep supplies of the drug. Of those who had used marijuana in the previous 12 months, 42 percent had never tried to maintain a supply, and 15 percent rarely kept some on hand. Only 12 percent of current Māori marijuana users always or at least most of the time kept a supply of marijuana. In addition, about one-third (36 percent) stated that they had obtained all of their marijuana without payment.

MARIJUANA USE

Marijuana is the third most popular drug in New Zealand after alcohol and tobacco (see Figure 1, page 6).

Prevalence of marijuana use

The use of marijuana was surveyed in the Regional Drug Surveys of 1990 and 1998. In 1998, 21 percent of the sample (26 percent of males, 16 percent of females) had used marijuana in the preceding 12 months. The proportions by age of those who had used marijuana in the previous 12 months are shown in Figure 24, for both 1990 and 1998. The highest prevalence of use in both years was between ages 18 and 24. In 1998, 43 percent of the males and 27 percent of the females in this age group reported having used marijuana in the previous 12 months. The prevalence fell steadily with age; at age 35 to 39 years, less than 20 percent of men and less than 10 percent of women reported that they had used marijuana in the previous 12 months. Between 1990 and 1998 there was little increase in use among males. Use by females increased by 5 percentage points; most of this increase occurred at younger ages.

The percentage of those who had ever tried marijuana was higher than those who had used marijuana in the past 12 months. Proportions of males and females who had ever tried marijuana are shown in Figure 25 by age. In the 1998 National Drug Survey, 50 percent (56 percent of males, 44 percent of females) had tried marijuana at some time

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[1] Note that marijuana is one preparation of cannabis. Other preparations include hashish and hash oil, and these are not included in this section on supply.

[2] Dacey B, Moewaka Barnes H. 2000. *Te Ao Taru Kino: Drug Use Amongst Māori in 1998*. Auckland: Whariki Māori Health Research Group, University of Auckland.

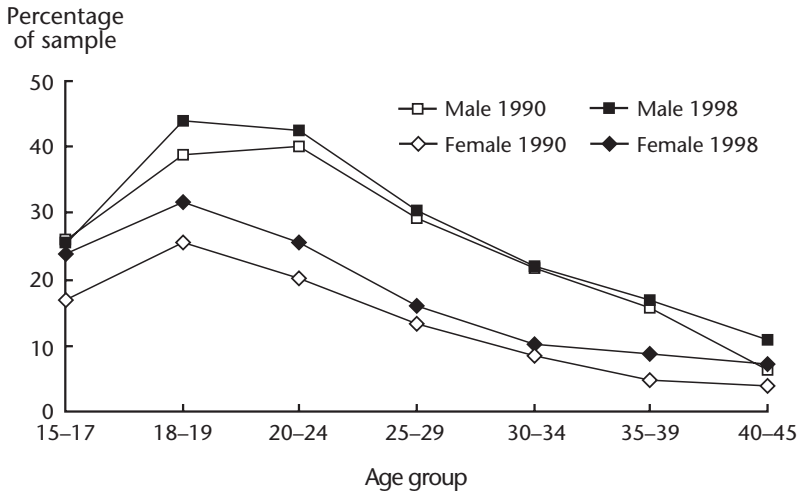

Figure 24: *Percentage reporting having used marijuana in the last 12 months, by sex and age group, 1990 and 1998*

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[1]

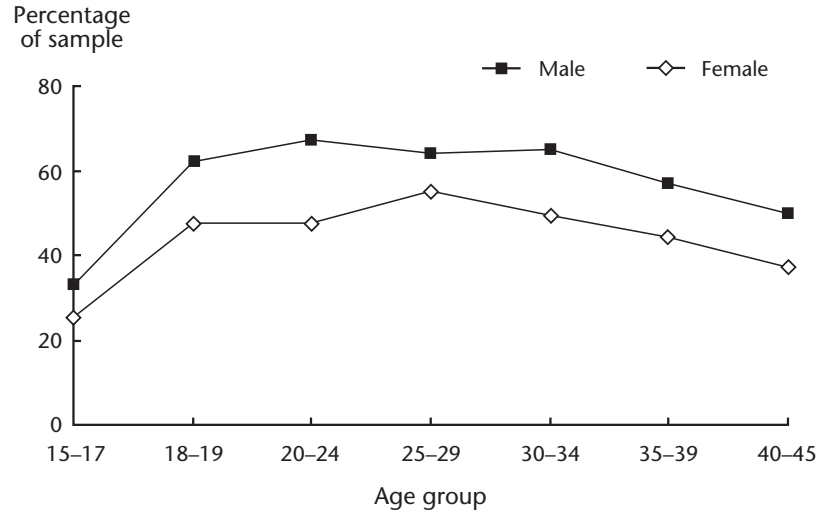

Figure 25: *Percentage who have ever tried marijuana, by sex and age group, 1998*

Source: Alcohol and Public Health Research Unit, 1998 National Drug Survey[2]

in their lives. One-third of 15-to-17-year-old males and one-quarter of 15-to-17-year-old females reported trying marijuana at some time. Almost two-thirds (65 percent) of males and 50 percent of females at ages 18 to 34 years had tried marijuana at some time. The proportion was less at ages older than 34 years. Between 1990 and 1998 in the Regional Surveys, the proportion of males reporting having ever used marijuana increased by 4 percentage points, and the proportion of females who had ever used marijuana increased by 12 percentage points.

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[1] Field A, Casswell S. 1999. *Drug use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 3.3.

[2] Field A, Casswell S. 1999. *Drug use in New Zealand: National Survey 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 3.2.

Of those who stated that they had tried marijuana, most had been introduced to the drug between ages 14 and 18 years. Figure 26 shows the cumulative percentage of those who had ever tried marijuana, by single years of age up to 26 years, as found in the 1990 and 1998 regional surveys. Of the 1990 respondents who indicated they had ever tried marijuana, 13 percent had tried it by age 14 years, 69 percent by age 18 years, and 91 percent by 24 years. By the time of the 1998 survey, 20 percent of respondents had been introduced to marijuana by age 14 years, 80 percent by age 18 years, and 97 percent by age 24 years.

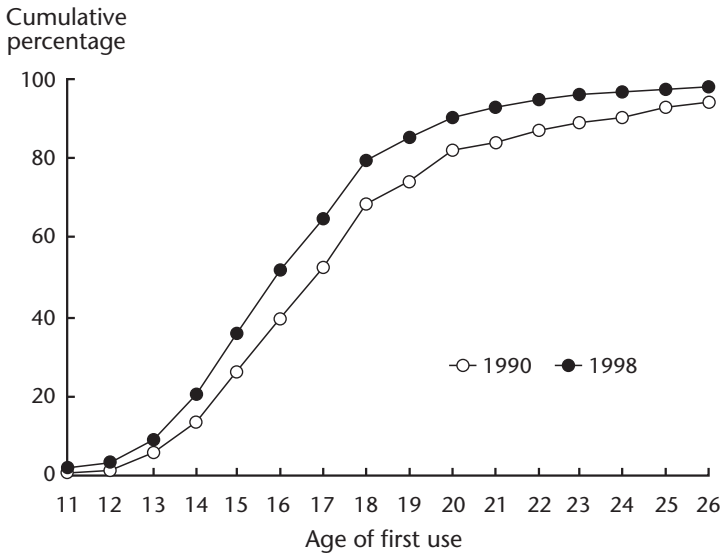

Figure 26: *Age at which marijuana was first tried, by those who had ever tried marijuana, 1990 and 1998*
Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[1]

Māori prevalence of marijuana use

The 1998 survey on Māori and drugs published in *Te Ao Taru Kino*[2] reports that 60 percent of Māori in 1998 (68 percent of males, 53 percent of females) had tried marijuana. In the 12 months prior to the survey, 26 percent of Māori (32 percent of males and 21 percent of females) had used marijuana.

Typical quantity consumed

Taking into account respondents' reports on the size of groups of marijuana smokers, the average user smoked 80 percent of a joint on a typical occasion. Figure 27 shows average consumption by age in 1998. The average amount smoked was less among older people. At age 15 to 17 years, average consumption was 97 percent of a joint. At ages 35 to 39 years and 40 to 45 years, a little over half a joint was smoked on a typical occasion.

The amount smoked on a typical occasion by Māori was 90 percent of a whole joint.

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[1] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 3.4.

[2] Dacey B, Moewaka Barnes H. 2000. *Te Ao Taru Kino: Drug Use Amongst Māori in 1998*. Auckland: Whariki Māori Health Research Group, University of Auckland.

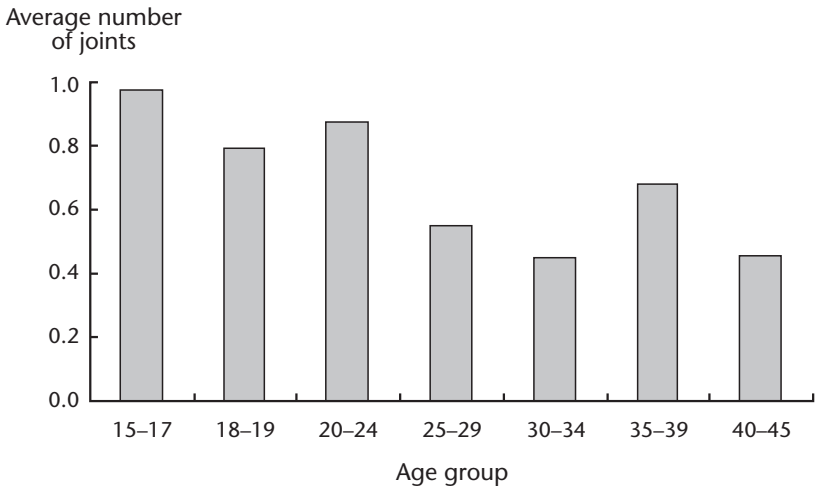

Figure 27: *Average number of joints smoked on a typical occasion, by age, people who had used marijuana in the last 12 months, 1998*

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[1]

Frequency of smoking

The percentage of people who reported having used marijuana in the previous week was less than the percentage that had used marijuana at some time in the preceding 12 months. Slightly under 5 percent of males and females had smoked marijuana once or more in the previous week. One percent had smoked every day in the preceding week (Figure 28).

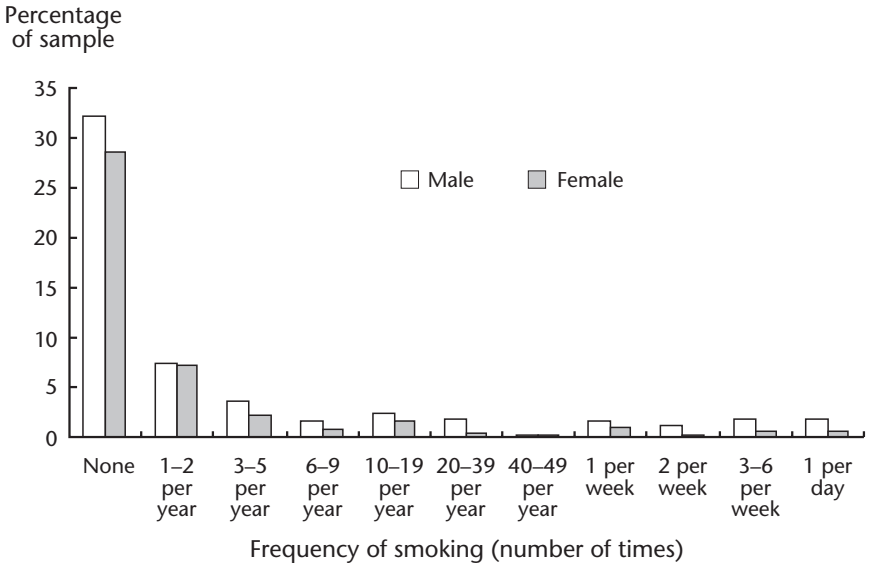

Figure 28: *Frequency of smoking marijuana in the previous 12 months, by sex, 1998*

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[2]

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[1] Field A, Casswell S. 1999. *Drug use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 3.6.

[2] Field A, Casswell S. 1999. *Drug use in New Zealand: National Survey 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 3.6.

Table 49: Percentage reporting using marijuana on 10 or more occasions in the last 30 days, by sex and age group, 1998

	Percentage of total sample						
	15–17	**18–19**	**20–24**	**25–29**	**30–34**	**35–39**	**40–45**
Male:	2	11	8	4	6	2	2
Female:	0	2	5	1	2	1	1

Source: Alcohol and Public Health Research Unit, National Drug Survey 1998[1]

There was a small group of more frequent users, defined as smoking marijuana 10 or more times in the preceding 30 days. They constituted 6 percent of those who had ever tried marijuana, or 3 percent of the total population. This level of use was most common for males is the 18-to-19-year-old age group and females in the 20-to-24-year-old age group (Table 49).

Cannabis use and location

The 1998 National Drugs Survey also revealed that marijuana was most commonly smoked at home. Almost two-thirds (62 percent) of those who had used marijuana in the preceding 12 months smoked "all" or "most" of their marijuana in their own or someone else's home. About a quarter (24 percent) had smoked "some" of their cannabis in a public place. Eleven percent stated that they had done "some" driving under the influence of marijuana, while 3 percent stated that they had done "all" or "most" of their driving under the influence of marijuana (Table 50).

Table 50: Distribution of individuals by level of marijuana use at four locations, percentage of smokers in previous 12 months, 1998

Amount smoked	**Homes**	**Public places**	**Driving**	**Work**
All	32	6	1	0
Most	30	12	2	0
Some	13	24	11	2
Hardly any	11	16	19	2
None	14	42	67	95
Total	100	100	100	100

Note: Percentages may not add to 100 due to rounding
Source: Alcohol and Public Health Research Unit, National Drugs Survey 1998[2]

[1] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 3.6.

[2] Field A, Casswell S. 1999. *Drug use in New Zealand: National Survey 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figures 4.1, 4.2.

MARIJUANA-RELATED PROBLEMS

Harmful effects of own use

People who had used marijuana in the preceding 12 months were asked about the harmful effect that marijuana had had on eight pre-determined areas of life. The three problems most commonly reported were loss of energy and vitality (26 percent), poor health (13 percent), and deterioration of financial position (13 percent). There was a higher level of harmful effects among frequent marijuana users (loss of energy and vitality, 50 percent; loss of financial position, 34 percent).

People were also asked to themselves identify what problems, if any, they had experienced because of using marijuana. Table 51 shows the five most frequently reported problems by level of use reported by respondents. The most frequently reported problem is memory loss, followed by loss of motivation or of energy.

Table 51: Five most frequently reported problems by three levels of marijuana use, 1998

	Ever used	Used last 12 months	Used 10+ times last 30 days
Memory loss	8	10	22
Loss of motivation/energy	6	9	11
General physical health	5	6	6
Feelings of paranoia	3	4	4
Relationship problems	2	4	6
Sample size	*n*=2759	*n*=1088	*n*=166

Source: Alcohol and Public Health Research Unit, 1998 National Drug Survey[1]

Perceived need for treatment

Concern about individuals' own marijuana use was also surveyed. A high proportion (82 percent) of users stated that they did not need help to reduce their marijuana consumption. Ten percent said they needed "a little help", 6 percent said they needed "some help", and 1 percent said they needed a lot of help. Six percent said they had had help in the past. About 4 percent of surveyed marijuana users stated that they had wanted help to reduce their use of marijuana, but did not receive any help. When asked the reasons why they did not receive the help they needed, the most frequent replies were not knowing where to go, social pressure to keep using marijuana, and fear of the consequences from contacting services.

[1] Field A, Casswell S. 1999. *Drug use in New Zealand: National Survey 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Table 5.3.

MARIJUANA-RELATED PROBLEMS FOR MĀORI

Harmful effects of own use

When Māori respondents who had used marijuana in the preceding 12 months were asked about self-identified problems associated with marijuana, the most frequently cited problems were loss of motivation/energy (9 percent) and memory loss (6 percent). The next most common problems were deterioration of physical health (5 percent) and relationships (3 percent).

Māori respondents were also asked about a range of predetermined life areas. Forty-six percent stated that they did suffer an effect on at least one of these areas. The three most commonly cited areas were energy and vitality (28 percent), outlook on life (14 percent) and financial position (14 percent). Higher percentages of heavier marijuana users reported these problems. For example, 33 percent of this heavier-use group reported loss of energy and vitality.

Perceived need for help

The majority of Māori marijuana users (82 percent) stated that they needed no help to reduce their level of marijuana use. Six percent stated that they needed some help, and 2 percent stated that they needed a lot of help. Thirteen percent stated that they had had help in the past.

Some Māori (8 percent) stated that they had wanted help in the past, but had not received it. When these people were asked the reasons why they had not received help, the main answers given were fear of the law, fear of losing friends, lack of local services, and not knowing where to go.

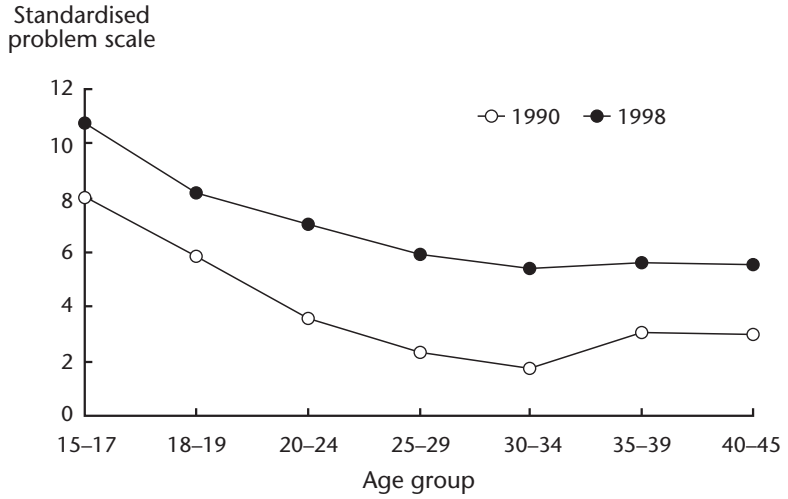

Figure 29: *Perceived seriousness of marijuana use as a community problem, by age, 1990 and 1998*
Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[1]

[1] Field A, Casswell S. 1999. *Drug use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 10.4.

COMMUNITY CONCERNS ABOUT MARIJUANA USE

Concern about marijuana use was low relative to concern about alcohol, other illicit drugs or solvents (Figure 29). This concern increased between 1990 and 1998, and the magnitude of the increase was greater than for any other drug. However, as at 1998 there was still a lower relative level of concern about marijuana compared with other drugs.

Marijuana use is of highest concern at ages 15 to 17 years. Concerns about this drug decline progressively with age; except at ages 15 to 17 years, marijuana was a lower concern than alcohol and tobacco.

CANNABIS[1] AND CRIME

Apprehensions

Table 52 presents figures for apprehensions by the Police for cannabis-related offences. More than 80 percent of all apprehensions are of males. The largest number of apprehensions for cannabis-related offences was in 1998 (24 069 apprehensions). The lowest number of apprehensions in the 1994–2000 period was in 1995 (18 808). There were 28 percent more apprehensions in 1998 than in 1995.

Table 52: Apprehensions of cannabis offenders by sex and year, 1994–98 (percentages brackets)

	1994	1995	1996	1997	1998	1999	2000
Male:	18 210 (82)	15 416 (82)	16 317 (82)	18 860 (83)	19 945 (83)	19 169 (83)	18 479 (83)
Female:	3931 (18)	3392 (18)	3584 (18)	3889 (17)	4124 (17)	3879 (17)	3646 (17)
Total:	22 141 (100)	18 808 (100)	19 901 (100)	22 749 (100)	24 069 (100)	23 048 (100)	22 125 (100)

Source: New Zealand Police

Table 53 presents figures for cannabis-related apprehensions by age group. The group aged 15 to 19 years had the greatest number of apprehensions in 1997 and 1998. There was a 27 percent rise in apprehensions for 15-to-19-year-olds over the period 1994 to 2000. The group aged 20 to 24 years had the highest number of apprehensions of all the age groups in the years 1994 to 1996, but experienced a 26 percent drop in apprehensions between 1994 and 2000.

[1] This section of the report contains data on offences under the Misuse of Drugs Act 1975 that relate to all cannabis preparations, not just marijuana.

Table 53: Apprehensions of cannabis offenders by age and year, 1994–2000 (percentages of total in brackets)

Age group	1994	1995	1996	1997	1998	1999	2000
10–14	337 (2)	316 (2)	461 (2)	552 (2)	506 (2)	602 (3)	785 (4)
15–19	4566 (21)	4411 (23)	4820 (24)	5955 (26)	6011 (25)	5845 (25)	5806 (26)
20–24	6526 (29)	5072 (27)	5189 (26)	5508 (24)	5816 (24)	5349 (23)	4812 (22)
25–29	4566 (21)	3705 (20)	3898 (20)	4281 (19)	4441 (18)	3979 (17)	3570 (16)
30–34	3063 (14)	2667 (14)	2661 (13)	2991 (13)	3315 (14)	2993 (13)	2971 (13)
35–39	1799 (8)	1524 (8)	1582 (8)	1900 (8)	2182 (9)	2197 (10)	2043 (9)
40+	1282 (6)	1110 (6)	1283 (6)	1559 (7)	1798 (7)	2079 (9)	2133 (10)
Unknown	2 (–)	3 (–)	7 (–)	3 (–)	0 (–)	6 (–)	6 (–)
Total	22 141 (100)	18 808 (100)	19 901 (100)	22 749 (100)	24 069 (100)	23 050 (100)	22 126 (100)

Note: '–' = less than 0.5 percent
Source: New Zealand Police

Prosecutions

The prosecutions and convictions sections of this report analyse the type of cannabis offences in three categories: using cannabis, dealing in cannabis, and other cannabis offences. The category "use cannabis" includes the use of cannabis and possession of cannabis other than for supply. Convictions for the importation, cultivation, or possession of cannabis for supply are included in the category "deal in cannabis". "Other cannabis" offences are mainly offences relating to the possession of pipes or other drug-related utensils.

Prosecution information in this section is based on the number of charges finalised each year.

Figure 30 and Table 54 present the number of prosecutions for cannabis offences by type of offence for the period 1990 to 1998. Prosecutions tended to increase between 1990 and 1994. The number decreased in 1994 to 1995, and then increased between 1996 and 1998. In 1990 there were 12 589 prosecutions for cannabis offences. By 1998 the number of prosecutions had increased by nearly 50 percent, to 18 720.

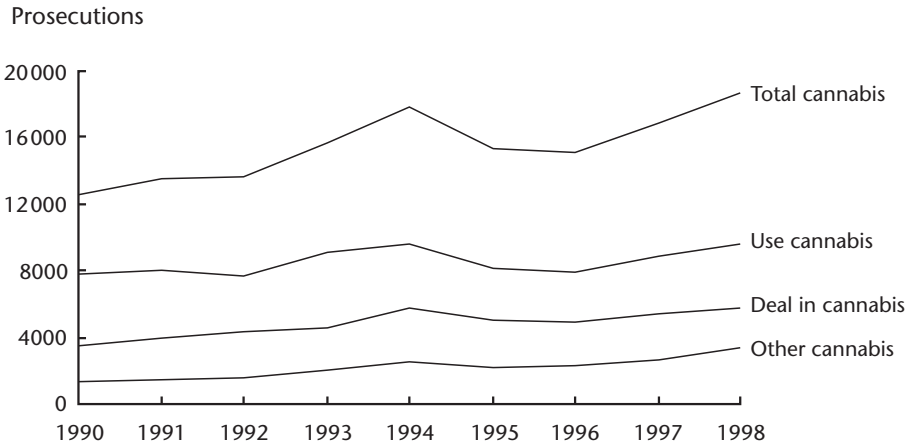

Figure 30: *Prosecutions for cannabis offences, 1990–98*

Source: Ministry of Justice

Table 54: Prosecutions for cannabis offences, by type of offence, 1990–98

Type of offence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Use cannabis	7825	8082	7719	9154	9586	8150	7907	8838	9568
Deal in cannabis	3461	3921	4358	4574	5782	4972	4909	5439	5789
Other cannabis	1303	1479	1525	1998	2457	2191	2307	2600	3363
Total cannabis	12 589	13 482	13 602	15 726	17 825	15 313	15 123	16 877	18 720

Source: Ministry of Justice

Charges for using cannabis were the largest group of cannabis prosecutions. This group declined as a proportion of total charges from 62 percent in 1990 to 51 percent in 1998. The number of prosecutions for using cannabis increased between 1996 and 1998. The number of prosecutions for such offences was 22 percent higher in 1998 than in 1990.

The next largest group of cannabis offences involved dealing in cannabis. Prosecutions in this category were between 28 percent and 33 percent of total cannabis prosecutions. The number of prosecutions for dealing in cannabis increased from 1990 to 1994 before decreasing in 1995. From 1996 the number then increased again. The number of charges for dealing in cannabis was higher in 1998 than in 1990.

The number of prosecutions for other cannabis offences showed a similar trend to prosecutions for dealing in cannabis.

Table 55 shows that the proportion of prosecutions for cannabis offences that result in a conviction decreased from 82 percent in 1990 to 70 percent in 1998.

Table 55: Outcome of prosecutions for cannabis offences, 1990–98 (percentages in brackets)

Outcome of prosecutions	1990	1991	1992	1993	1994	1995	1996	1997	1998
Convicted	10 329 (82)	10 649 (79)	10 548 (78)	12 384 (79)	13 340 (75)	10 834 (71)	10 591 (70)	11 911 (71)	13 120 (70)
Youth Court proved	48 (–)	65 (1)	48 (–)	68 (–)	55 (–)	77 (1)	89 (1)	173 (1)	149 (1)
S19 Discharge[1]	80 (1)	62 (1)	88 (1)	108 (1)	160 (1)	147 (1)	174 (1)	183 (1)	220 (1)
Not proved	2132 (17)	2706 (20)	2918 (22)	3166 (20)	4270 (24)	4255 (28)	4269 (28)	4610 (27)	5231 (28)
Total	12 589 (100)	13 482 (100)	13 602 (100)	15 726 (100)	17 825 (100)	15 313 (100)	15 123 (100)	16 877 (100)	18 720 (100)

Note: '–' = less than 0.5 percent
Source: Ministry of Justice

Convictions

Conviction information in this section is based on the number of cases finalised each year where the defendent was actually convicted. Because several charges may be combined into one case, the number of convictions is more than the number of convicted cases.

Table 56 shows that convictions for using cannabis were the largest group of cannabis offences, although the proportion of cannabis offences that involve using cannabis has been decreasing from 58 percent in 1990 to 45 percent in 1998. The next largest group of cannabis offences was for dealing in cannabis. The number of convictions for dealing in cannabis increased from 1990 to 1994, before decreasing in 1995. In 1997 and 1998 the number increased again. Other cannabis convictions showed a similar trend. Most of those convicted of cannabis offences were males (about 85 percent per year).

Table 56: Convicted cases for cannabis offences by type of offence, 1990–98

Type of offence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Use cannabis	3630	3584	3091	3890	3801	2927	2884	3046	3134
Deal in cannabis	2173	2310	2496	2781	2988	2462	2424	2695	2853
Other cannabis	491	558	585	800	865	728	645	721	1033
Total cannabis	6294	6452	6172	7471	7654	6117	5953	6462	7020

Source: Ministry of Justice

[1] Section 19 of the Criminal Justice Act 1985 allows a person who is found or pleads guilty to be discharged without a conviction being recorded. Such a discharge is deemed to be an acquittal.

Table 57: Convicted cases for cannabis offences, by sex, 1990–98 (percentages in brackets)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Male:	5360	5535	5258	6409	6493	5242	5023	5500	5989
	(85)	(86)	(85)	(86)	(85)	(86)	(84)	(85)	(85)
Female:	932	914	913	1060	1159	874	930	960	1030
	(15)	(14)	(15)	(14)	(15)	(14)	(16)	(15)	(15)
Unknown:	2	3	1	2	2	1	0	2	1
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Total:	6294	6452	6172	7471	7654	6117	5953	6462	7020
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' = less than 0.5 percent
Source: Ministry of Justice

Between 1990 and 1995 most people convicted for cannabis offences were between 20 and 24 years old. In 1996 the number of convictions for those in this age group and between 30 and 39 years old were almost the same. In 1997 and 1998 the largest number of convictions were for those between 30 and 39 years old. The number of those 40 years old and older who were convicted of cannabis offences has shown an increasing trend from 241 in 1990 to 705 in 1998. This age group also made up an increasing proportion of cannabis convictions — 4 percent in 1990 and 10 percent in 1998 (see Table 58).

Table 58: Convicted cases for cannabis offences by age, 1990–98 (percentages in brackets)

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998
14–16	3	2	0	2	2	0	0	3	1
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
17–19	1194	1003	879	952	928	783	803	952	933
	(19)	(16)	(14)	(13)	(12)	(13)	(14)	(15)	(13)
20–24	2076	2177	2009	2314	2249	1758	1614	1612	1701
	(33)	(34)	(33)	(31)	(29)	(29)	(27)	(25)	(24)
25–29	1441	1514	1525	1826	1876	1456	1413	1485	1564
	(23)	(24)	(25)	(24)	(25)	(24)	(24)	(23)	(22)
30–39	1337	1480	1433	1945	2056	1647	1637	1803	2115
	(21)	(23)	(23)	(26)	(27)	(27)	(28)	(28)	(30)
40+	241	276	325	432	542	472	484	605	705
	(4)	(4)	(5)	(6)	(7)	(8)	(8)	(9)	(10)
Unknown	2	0	1	0	1	1	2	2	1
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Total	6294	6452	6172	7471	7654	6117	5953	6462	7020
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' less than 0.5 percent
Source: Ministry of Justice

In 1998, more younger people were convicted of cannabis offences. Nearly six in 1000 who were between 17 and 19 years old, and just over six in 1000 who were between 20 and 24 years old, were convicted of such offences. However, the conviction rate for cannabis offences tended to decrease with age until less than one out of 1000 of those aged 40 years and older were convicted of such offences. Note that no rate has been presented for 14-to-16-year-olds, as the majority of these cases that are proven are in a Youth Court and are not recorded as convictions.

Table 59: Convictions for cannabis offences, age-specific rate per 1000 population over 16 years of age, 1998

Total	17–19	20–24	25–29	30–39	40+
1.85	5.7	6.4	5.5	3.5	0.5

Source: Ministry of Justice

More people from the European ethnic group than from any other were convicted of cannabis offences, although the proportion represented by this ethnic group has decreased from 61 percent of cannabis convictions in 1990 to 54 percent in 1998. The next largest group convicted of cannabis offences were from the Māori ethnic group, who made up 35 percent of the cannabis offenders in 1990 and 41 percent in 1998. The proportion of those convicted of cannabis offences who were from the Pacific peoples ethnic group was small, but has been gradually increasing (2 percent in 1990 and 3 percent in 1998).

Table 60: Convicted cases for cannabis offences, ethnicity, 1990–98 (percentages in brackets)

Ethnic group	1990	1991	1992	1993	1994	1995	1996	1997	1998
European	3859 (61)	3861 (60)	3794 (62)	4431 (59)	4443 (58)	3549 (58)	3210 (54)	3497 (54)	3809 (54)
Māori	2220 (35)	2377 (37)	2184 (35)	2801 (38)	2929 (38)	2358 (39)	2486 (42)	2690 (42)	2907 (41)
Pacific peoples	147 (2)	158 (2)	145 (2)	175 (2)	181 (2)	160 (3)	193 (3)	199 (3)	218 (3)
Other	29 (1)	20 (–)	16 (–)	23 (–)	45 (1)	19 (–)	18 (–)	42 (1)	41 (1)
Unknown	39 (1)	36 (1)	33 (1)	41 (1)	56 (1)	31 (1)	46 (1)	34 (1)	45 (1)
Total	6294 (100)	6452 (100)	6172 (100)	7471 (100)	7654 (100)	6117 (100)	5953 (100)	6462 (100)	7020 (100)

Note: '–' = less than 0.5 percent
Source: Ministry of Justice

Table 61: Convicted cases for cannabis offences, type of sentence, 1990–98 (percentages in brackets)

Type of sentence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Custodial	401	381	413	397	483	393	398	522	505
	(6)	(6)	(7)	(5)	(6)	(6)	(7)	(8)	(7)
Periodic Detention	1410	1526	1602	1888	1787	1305	1333	1385	1853
	(22)	(24)	(26)	(25)	(23)	(21)	(22)	(21)	(26)
Community Programme	20	41	34	34	31	23	24	21	11
	(–)	(1)	(1)	(1)	(–)	(–)	(–)	(–)	(–)
Community Service	280	554	672	754	787	554	517	540	616
	(4)	(9)	(11)	(10)	(10)	(9)	(9)	(8)	(9)
Supervision	118	106	126	200	212	177	167	210	249
	(2)	(2)	(2)	(3)	(3)	(3)	(3)	(3)	(4)
Monetary	3932	3647	3045	3865	4007	3340	3216	3457	3349
	(63)	(57)	(49)	(52)	(52)	(55)	(54)	(54)	(48)
Deferment	75	119	156	183	151	168	130	130	163
	(1)	(2)	(3)	(2)	(2)	(3)	(2)	(2)	(2)
Other or no sentence	58	78	124	150	196	157	168	197	274
	(1)	(1)	(2)	(2)	(3)	(3)	(3)	(3)	(4)
Total	6294	6452	6172	7471	7654	6117	5953	6462	7020
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Note: '–' = less than 0.5 percent
Source: Ministry of Justice

Monetary penalties were the most common type of sentence imposed for cannabis offences. However, the proportion of cases that receive a monetary penalty has decreased from 63 percent in 1990 to 48 percent in 1998. Periodic detention was the next most common sentence and accounted for between 21 percent and 26 percent of the cases each year. The number of cases in the "other or no sentence" category has been increasing, from 58 in 1990 to 274 in 1998. (Most of these cases involve a conviction and discharge.) This category has also increased as a proportion of the convicted cannabis cases from 1 percent in 1990 to 4 percent in 1998.

Each year between 5 and 8 percent of cannabis offences resulted in a custodial sentence being imposed. The average length of the custodial sentence varied from 7.5 months in 1993 to 11.5 months in 1997 (Table 62).

Table 62: Convicted cases for cannabis offences, average length of custodial sentences (months), 1990–98

1990	1991	1992	1993	1994	1995	1996	1997	1998
9.5	8.0	8.6	7.5	10.2	11.2	10.9	11.5	10.4

Source: Ministry of Justice

Information from the census of prison inmates shows that between 2.7 and 5.9 percent of sentenced prison inmates were in prison for cannabis offences.

Table 63: Number and percentage of total in prison for cannabis offences, 1987–97

	1987	1989	1991	1993	1995	1997
Number	120	135	1409	102	151	232
Percentage of sentenced inmates	4.4	4.4	3.7	2.7	3.7	5.9

Source: Ministry of Justice / Department of Corrections [1]

CANNABIS-RELATED MORTALITY

Cannabis-related conditions

The conditions that are used to define cannabis-related conditions as the underlying cause of death are cannabis dependence syndrome, non-dependent abuse of cannabis, and drug psychoses with cannabis specified.

There were two deaths in the period 1990–96 where non-dependent abuse of cannabis was the underlying cause of death. Both of these deaths were non-Māori males aged between 18 and 29. There is no defined toxicological level of cannabis that will cause death by poisoning, but in the case of these two deaths the coroner decided that cannabis abuse was the underlying cause of death as the abuse led to death by other causes. One of the deaths was due to inhalation of vomit into the lungs while under the influence of cannabis; the second was due to cardiomyopathy in association with tachycardia brought on by abuse of cannabis.

There were a further five deaths over the 1990–96 period where a mixed drug dependence or abuse was the underlying cause of death and cannabis was one of the drugs involved. The other types of drugs that cannabis was consumed in combination with were opiates, hallucinogens, alcohol, and sedatives. The other drugs involved were of greater toxicological significance, and so these deaths cannot be assumed as due solely to cannabis.

Deaths due to external causes

This section examines deaths due to external causes where the deceased was reported to have had cannabis in their blood at the time of the injury or poisoning (eg, falls, motor vehicle accidents, suicides) that led to their death. The recording of presence of cannabis is sourced from post-mortems, coroners' findings, police reports, and other relevant information sources. It is not clear whether the person was intoxicated by cannabis at the time of the injury or poisoning.

[1] Braybrook B, O'Neill R. 1988. *A Census of Prison Inmates.* Wellington: Policy and Research Division Branch, Department of Justice.
Braybrook B. 1990. *Census of Prison Inmates 1989.* Wellington: Policy and Research Division Branch, Department of Justice.
Braybrook B, Southey P. 1992. *Census of Prison Inmates 1991.* Wellington: Policy and Research Division Branch, Department of Justice.
Southey P, Spier P, Edgar N. 1995. *Census of Prison Inmates 1993.* Wellington: Policy and Research Division Branch, Department of Justice.
Lash B. 1996. *Census of Prison Inmates 1995.* Wellington: Ministry of Justice.
Lash B. 1998. *Census of Prison Inmates 1997.* Wellington: Ministry of Justice.

Table 64 shows the number of deaths due to external causes where cannabis was detected. There were 30 deaths of males due to external causes of injury and poisoning between the ages of 14 and 44 years where cannabis was reported as being in their system. The seven deaths of females due to external causes of injury or poisoning where cannabis was detected were restricted to the group aged 14 to 24 years. It is important to note that not all deaths resulting from external causes have toxicology tests done and so the presence of cannabis will be underreported. These figures for possible cannabis involvement should be treated as indicative only.

Table 64: Deaths due to external causes where cannabis is recorded as being in the blood of the deceased, by age group at death and sex, 1990–96 combined

	Total	0–13	14–17	18–24	25–29	30–34	35–39	40–44	45–49	50–54	55+
Male:	30	0	6	8	5	6	3	2	0	0	0
Female:	7	0	3	4	0	0	0	0	0	0	0
Total:	37	0	9	12	5	6	3	2	0	0	0

Source: New Zealand Health Information Service

CANNABIS-RELATED HOSPITALISATIONS

This section presents statistics on publicly funded hospitalisations where there was a diagnosis of a cannabis-related condition and/or poisoning by cannabis. The hospitalisations are of inpatients and day patients only. (See the explanatory notes on page 109 for further information about hospitalisation statistics.)

Table 65 presents figures for all publicly funded hospitalisations where one or more cannabis-related conditions were diagnosed or where cannabis poisoning was involved.

Table 65: All publicly funded hospitalisations with a cannabis related condition or cannabis poisoning, by ethnicity, sex and year, numbers and rates, 1996–98

		1996		1997		1998	
		No.	Rate*	No.	Rate*	No.	Rate*
Māori	*Total:*	245	17.6	358	57.8	497	79.5
	Male:	170	25.9	246	82.4	336	110.5
	Female:	75	9.8	112	34.8	161	50.0
Non-Māori	*Total:*	307	10.1	599	19.7	716	23.9
	Male:	215	14.0	426	27.5	535	35.7
	Female:	92	6.2	173	12.0	181	12.2
Total	*Total:*	552	11.1	957	25.8	1213	32.9
	Male:	385	15.6	672	36.2	871	47.6
	Female:	167	6.7	285	15.7	342	18.3

* Rates per 100 000 population, age-standardised to Segi's world population.[2]
Source: New Zealand Health Information Service

Over the three-year period from 1996 to 1998 there were 2722 publicly funded hospitalisations that involved cannabis-related conditions and/or cannabis poisoning as the reason for admission or as an additional diagnosis. There has been a steady rise in the total number of cannabis-related hospitalisations each year (552 in 1996, 1213 in 1998), which is believed to be due to increased reporting of cannabis dependence and cannabis abuse as additional diagnoses. The result of this is that the figures for total cannabis-related hospitalisations are not comparable over time.

Māori made up 40 percent of all the hospitalisations from 1996 to 1998 involving cannabis-related conditions and/or poisoning. Males made up 71 percent of total cannabis-related hospitalisations.

The 1998 age-standardised hospitalisation rate for Māori males (110.5 per 100 000 population) was over three times greater than the rate for non-Māori males (35.7 per 100 000 population). The Māori female hospitalisation rate in 1998 (50.0 per 100 000 population) was less than half the Māori male rate and over four times the non-Māori female rate (12.2 per 100 000 population).

Cannabis-related principal diagnosis

The principal diagnosis is the condition that is established after investigation to be most responsible for the admission to hospital.

The number of hospitalisations where the principal diagnosis was a cannabis-related condition has fluctuated over the period 1996 to 1998. The hospitalisation rate in 1996 (3.7 per 100 000 population) rose to 5.5 per 100 000 population in 1997 before dropping to 4.5 per 100 000 population in 1998. Because of the relatively small numbers of hospitalisations involved, these rates should be treated as indicative only.

The four conditions with the highest number of hospitalisations over the 1996 to 1998 period are shown in Table 66. A drug psychosis was the condition with the highest

Table 66: Publicly funded hospitalisations with a cannabis-related principal diagnosis, numbers and rates, four leading diagnoses, 1996–98

	1996		1997		1998	
	No.	Rate*	No.	Rate*	No.	Rate*
All cannabis conditions	130	3.7	186	5.5	155	4.5
Drug psychoses (cannabis specified)	59	1.6	91	2.5	93	2.7
Drug dependence (cannabis specified)	28	–	29	–	21	–
Non-dependent abuse of drugs (cannabis specified)	24	–	29	–	19	–
Poisoning by psycho-dysleptics (cannabis specified)	16	–	32	1.2	19	–
Other	3	–	5	–	3	–

Note: '–' = rate less than 1 per 100 000 population
* Rates per 100 000 population, age-standardised to Segi's world population
Source: New Zealand Health Information Service

number of hospitalisations for 1996–98. The age-standardised hospitalisation rate for drug psychoses has risen from 1.6 per 100 000 population in 1996 to 2.7 per 100 000 population in 1998.

Cannabis poisoning

The following figures for cannabis poisoning are derived from the codes for external cause of injury that are present on hospital discharge data in cases where an external cause of injury (such as motor vehicle accidents) or poisoning has occurred (either leading to hospitalisation or occurring while hospitalised). Poisoning by cannabis is not attributed to an external cause of poisoning where the patient was using the drug for recreational purposes or due to dependence. Accidental poisoning in this case means accidental ingestion of cannabis.

Table 67 shows the number of hospitalisations in 1996, 1997 and 1998 where the hospitalisation record specified that poisoning by cannabis was involved. These are not diagnoses, but they describe the circumstances of the poisoning.

Table 67: Publicly funded hospitalisations involving cannabis poisoning, by circumstance of poisoning, 1996–98

	1996		1997		1998	
	No.	Rate*	No.	Rate*	No.	Rate*
All (cannabis) external causes†	38	1.1	68	2.2	53	1.6
Accidental poisoning by psychodysleptics (cannabis specified)	31	1.0	62	2.0	44	1.4
Psychotropic agents causing adverse effects in therapeutic use (cannabis specified)	0	0.0	0	0.0	1	–
Suicide and self-inflicted injury (cannabis specified)	3	–	5	–	6	–
Assault by poisoning	0	0.0	0	0.0	1	–
Poisoning by cannabis, undetermined whether accidentally or purposefully inflicted	4	–	1	–	1	–

Note: '–' = rate less than 1 per 100 000 population
* Rates per 100 000 population, age-standardised to Segi's world population
† Note: may not equal sum of totals by cause as more than one external cause code can be recorded per event
Source: New Zealand Health Information Service

The most common circumstance was accidental poisoning by cannabis. This category accounted for almost all cannabis poisonings.

Hospitals do not always provide clear or full descriptions of circumstances of injury or poisoning, and cannabis involvement may not always be mentioned. The data should be regarded as conservative counts and be treated as indicative only.

Other illicit drugs

KEY FACTS

Use

- Opium and its derivatives had been tried by 4 percent of surveyed respondents in the 1998 National Drug Survey, with 1 percent stating that they had used one or more forms of this drug in the previous 12 months.
- Thirteen percent of National Drug Survey respondents in 1998 stated that they had tried hallucinogens at some time. Five percent stated that they had used these drugs in the past 12 months. In the Regional Drugs Surveys, the percentage of 18-to-24-year-olds that had used LSD in the previous year grew from 5 percent in 1990 to 11 percent in 1998.
- Nine percent of respondents in the 1998 National Drugs Survey (11 percent of men, 7 percent of women) had tried stimulants at some time. Three percent had used stimulants in the last year.

Crime

- There were 2012 apprehensions in 2000 for offences related to illicit drugs other than cannabis. The number of prosecutions in 1998 was 1829, resulting in 1049 convictions.

Mortality

- There were 156 deaths in the period 1990–96 where opiate-related conditions or poisonings were the underlying cause of death.
- There were two deaths between 1990 and 1996 where a hallucinogen (in combination with other drugs) was the underlying cause of death.

Hospitalisations

- Over the three-year period from 1996 to 1998 there were 3955 opiate-related publicly funded hospitalisations.
- Over the three-year period from 1996 to 1998 there were 343 hallucinogen-related publicly funded hospitalisations.
- Over the three-year period from 1996 to 1998 there were 109 stimulant-related publicly funded hospitalisations. Twenty-three of these were due to cocaine, with the rest due to amphetamines.

ILLICIT DRUGS AND CRIME

Information in this section reports on offending related to illicit drugs other than cannabis. Prosecution information in this section is based on the number of charges finalised each year.

Apprehensions

The number of apprehensions for illicit drugs other than those involving cannabis fluctuated over the 1994–2000 period, although there were increases for the last three years (Table 68). The figure of 2012 apprehensions in 2000 was the highest for this period and represents a 46 percent increase since 1997. Males have consistently made up about three-quarters of these apprehensions.

Table 68: Apprehensions of offenders with illicit drugs other than cannabis, by sex and year of apprehension, numbers and percentages of total, 1994–2000 (percentages of total in brackets)

	1994	1995	1996	1997	1998	1999	2000
Male:	1006	928	1089	1061	1077	1238	1525
	(77)	(77)	(76)	(77)	(73)	(76)	(76)
Female:	300	272	344	317	407	383	487
	(23)	(23)	(24)	(23)	(27)	(14)	(14)
Total:	1306	1200	1433	1378	1484	1621	2012
	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Table 69: Apprehensions for offences related to illicit drugs other than cannabis, by age, numbers, 1994–2000 (percentages of total in brackets)

Age group	1994	1995	1996	1997	1998	1999	2000
10–14	4	7	8	7	4	21	34
	(–)	(1)	(1)	(1)	(–)	(1)	(2)
15–19	148	157	191	235	179	228	321
	(11)	(13)	(13)	(17)	(12)	(14)	(16)
20–24	337	309	351	292	341	327	442
	(26)	(26)	(24)	(21)	(23)	(20)	(22)
25–29	330	259	356	303	329	363	407
	(25)	(22)	(25)	(22)	(22)	(22)	(20)
30–34	255	219	255	248	299	305	361
	(20)	(18)	(18)	(18)	(20)	(13)	(18)
35–39	135	133	185	156	195	202	230
	(10)	(11)	(13)	(11)	(13)	(19)	(11)
40+	97	116	87	137	137	175	216
	(7)	(10)	(6)	(10)	(9)	(11)	(11)
Total	1306	1200	1433	1378	1484	1621	2012
	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. Note: '–' = less than 0.5 percent.

Source: New Zealand Police

Table 69 presents figures for apprehensions for offences involving illicit drugs other than cannabis, broken down according to age groups. It shows that the majority of all apprehensions for such offences are in the 20-to-34-year age group (55 to 71 percent).

Prosecutions

The number of prosecutions for drug offences other than cannabis offences has shown an increasing trend from 1398 in 1990 to 1829 in 1998 (Table 70). The greatest number of prosecutions (2070) was in 1997. Most of the increase has come in the category of dealing in drugs other than cannabis. This category has increased from 39 percent of drug offences other than cannabis offences in 1990 to 47 percent in 1998.

Table 70: Prosecutions for drug offences other than cannabis, by type, numbers and percentages of total by year, 1990–98 (percentages in brackets)

Type of offence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Use other drugs	568	540	471	481	488	537	495	627	609
	(41)	(40)	(33)	(36)	(35)	(32)	(31)	(30)	(33)
Deal other drugs	540	547	664	616	664	860	817	1186	865
	(39)	(41)	(47)	(46)	(48)	(51)	(52)	(57)	(47)
Other drugs	290	257	275	233	230	288	268	257	355
	(21)	(19)	(20)	(18)	(17)	(17)	(17)	(12)	(19)
Total	1398	1344	1410	1330	1382	1685	1580	2070	1829
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. *Source:* Ministry of Justice

Table 71: Prosecutions for drug offences other than cannabis, outcome, numbers by year, 1990–98 (percentages in brackets)

Outcome of prosecutions	1990	1991	1992	1993	1994	1995	1996	1997	1998
Convicted	978	906	894	855	860	960	1007	1101	1049
	(70)	(67)	(63)	(64)	(62)	(57)	(64)	(53)	(57)
Youth Court proved	2	3	0	3	1	3	1	3	2
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
S19 discharge[1]	2	3	7	20	14	9	13	26	23
	(–)	(–)	(–)	(2)	(1)	(1)	(1)	(1)	(1)
Not proved	416	432	509	452	507	713	559	940	755
	(30)	(32)	(36)	(34)	(37)	(42)	(35)	(45)	(41)
Total	1398	1344	1410	1330	1382	1685	1580	2070	1829
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. Note: '–' = less than 0.5 percent. *Source:* Ministry of Justice

[1] Section 19 of the Criminal Justice Act 1985 allows a person who is found or pleads guilty to be discharged without a conviction being recorded. Such a discharge is deemed to be an acquittal.

A conviction is the most frequent outcome of a prosecution for drug offences other than cannabis offences. However, the proportion of prosecutions that result in a conviction decreased from 70 percent in 1990 to 57 percent in 1998 (Table 71). There was a corresponding increase in the proportion of prosecutions that resulted in a "not proved" outcome from 30 percent in 1990 to 41 percent in 1998.

Convictions

Conviction information in this section is based on the number of cases finalised each year. Because several charges may be combined into one case, the number of convictions is more than the number of convicted cases.

The number of convictions for drug offences other than cannabis offences increased slightly between 1990 and 1998, from 480 to 534. The greatest number of convictions was in 1997, when there were 556 convictions. In most years between 1990 and 1998 the two categories of using and dealing had similar numbers of convictions, and each of these categories had more convictions than the "other drugs" category (Table 72). Table 73 shows that each year between 76 percent and 81 percent of people convicted of drug offences other than cannabis offences were male.

Table 72: Convicted cases for drug offences other than cannabis, type of offence, numbers by year, 1990–98 (percentages in brackets)

Type of offence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Use other drugs	190	194	164	188	192	213	207	235	198
	(40)	(41)	(35)	(40)	(40)	(42)	(38)	(42)	(37)
Deal other drugs	190	196	211	193	200	203	247	221	218
	(40)	(41)	(44)	(41)	(41)	(40)	(45)	(40)	(41)
Other drugs	100	86	101	91	93	91	91	100	118
	(21)	(18)	(21)	(19)	(19)	(18)	(17)	(18)	(22)
Total	480	476	476	472	485	507	545	556	534
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. *Source:* Ministry of Justice

Table 73: Convicted cases for drug offences other than cannabis offences, numbers by sex and year, 1990–98 (percentages in brackets)

	1990	1991	1992	1993	1994	1995	1996	1997	1998
Male:	375	360	375	369	372	408	422	420	408
	(78)	(76)	(79)	(78)	(77)	(81)	(77)	(76)	(76)
Female:	105	116	101	103	113	99	123	136	126
	(22)	(24)	(21)	(22)	(23)	(20)	(23)	(25)	(24)
Total:	480	476	476	472	485	507	545	556	534
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. *Source:* Ministry of Justice

Each year most of those convicted of drug offences other than cannabis offences were between 20 and 39 years old. In 1990, 83 percent of the offenders, and in 1998, 80 percent of the offenders, were in this age group (Table 74).

Table 74: Convicted cases for drug offences other than cannabis, numbers by age, 1990–98 (percentages in brackets)

Age group	1990	1991	1992	1993	1994	1995	1996	1997	1998
14–16	1	0	1	0	1	0	0	0	0
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
17–19	46	32	36	38	31	42	34	46	30
	(10)	(7)	(8)	(8)	(6)	(8)	(6)	(8)	(6)
20–24	123	119	110	115	126	104	136	107	107
	(26)	(25)	(23)	(24)	(26)	(21)	(25)	(19)	(20)
25–29	142	126	123	125	127	131	128	126	125
	(30)	(27)	(26)	(27)	(26)	(26)	(24)	(23)	(23)
30–39	130	160	173	149	161	185	167	213	198
	(27)	(34)	(36)	(32)	(33)	(37)	(31)	(38)	(37)
40+	38	39	32	45	39	45	80	64	74
	(8)	(8)	(7)	(10)	(8)	(9)	(15)	(12)	(14)
Unknown	0	0	1	0	0	0	0	0	0
	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)	(–)
Total	480	476	476	472	485	507	545	556	534
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding.

Note: '–' = less than 0.5 percent.

Source: Ministry of Justice

Most of those convicted of drug offences other than cannabis were European (Table 75). However, the proportion of European offenders decreased from 74 percent of drug offenders other than cannabis offenders in 1990 to 66 percent in 1998. There was a corresponding increasing trend in the proportion of Māori offenders, from 21 percent in 1990 to 28 percent in 1998.

In 1990 the most common sentence for drug offences other than cannabis offences was a custodial sentence, with 32 percent of convicted cases resulting in a custodial sentence (Table 76). By 1998, this proportion had decreased to 23 percent, and a custodial sentence was no longer the most frequently imposed sentence for such offences. In 1990 the next most common type of sentence was a monetary penalty with 27 percent of drug offences other than cannabis offences receiving such a sentence. This proportion fluctuated between 19 percent and 30 percent, and by 1998 at 27 percent was the most common type of sentence imposed. Periodic detention sentences were also common, and fluctuated between 19 percent and 28 percent of all drug offences except cannabis offences.

Table 75: Convicted cases for drug offences other than cannabis offences, by ethnicity, numbers by year, 1990–98 (percentages in brackets)

Ethnic group	1990	1991	1992	1993	1994	1995	1996	1997	1998
European	353	347	368	361	379	387	383	362	354
	(74)	(73)	(77)	(77)	(78)	(76)	(70)	(65)	(66)
Māori	102	111	89	89	96	112	138	167	151
	(21)	(23)	(19)	(19)	(20)	(22)	(25)	(30)	(28)
Pacific peoples	15	9	10	10	7	6	12	14	19
	(3)	(2)	(2)	(2)	(1)	(1)	(2)	(3)	(4)
Other	8	6	7	8	2	1	8	8	3
	(2)	(1)	(2)	(2)	(–)	(–)	(2)	(1)	(1)
Unknown	2	3	2	4	1	1	4	5	7
	(–)	(1)	(–)	(1)	(–)	(–)	(1)	(1)	(1)
Total	480	476	476	472	485	507	545	556	534
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. Note: '–' = less than 0.5 percent. *Source:* Ministry of Justice

Table 76: Convicted cases for drug offences other than cannabis, sentencing, numbers by year, 1990–98 (percentages in brackets)

Sentence	1990	1991	1992	1993	1994	1995	1996	1997	1998
Custodial	152	151	147	121	109	97	154	141	125
	(32)	(32)	(31)	(26)	(23)	(19)	(28)	(25)	(23)
Periodic detention	89	108	104	125	107	144	127	108	134
	(19)	(23)	(22)	(27)	(22)	(28)	(23)	(19)	(25)
Community programme	8	11	9	8	7	8	4	2	2
	(2)	(2)	(2)	(2)	(1)	(2)	(1)	(–)	(–)
Community service	28	25	34	33	36	29	24	31	30
	(6)	(5)	(7)	(7)	(7)	(6)	(4)	(6)	(6)
Supervision	49	60	64	61	69	83	77	72	54
	(10)	(13)	(13)	(13)	(14)	(16)	(14)	(13)	(10)
Monetary	129	89	89	88	121	116	120	167	145
	(27)	(19)	(19)	(19)	(25)	(23)	(22)	(30)	(27)
Deferment	22	29	23	20	27	17	29	30	30
	(5)	(6)	(5)	(4)	(6)	(3)	(5)	(5)	(6)
Other or no sentence	3	3	6	16	9	13	10	5	14
	(1)	(1)	(1)	(3)	(2)	(3)	(2)	(1)	(3)
Total	480	476	476	472	485	507	545	556	534
	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)	(100)

Percentages may not add to 100 owing to rounding. Note: '–' = less than 0.5 percent. *Source:* Ministry of Justice

Table 77 shows that the average length of custodial sentence imposed for drug offences, other than cannabis offences, was between 24 and 32 months.

Over the period of the censuses of prison inmates from 1987 to 1997 the number of people in prison for drug offences other than cannabis offences fluctuated between 117 and 149. However, the proportion of sentenced inmates who were in prison for such offences decreased from 4 percent in 1987 to 3 percent in 1997 as the number of people in prison increased.

Table 77: Convicted cases for drug offences other than cannabis, average length of custodial sentences (months), 1990–98

1990	1991	1992	1993	1994	1995	1996	1997	1998
28.3	27.6	26.1	27.4	27.0	24.3	30.4	30.7	31.7

Source: Ministry of Justice

Table 78: Number in prison for drug offences other than cannabis offences, 1987–97

	1987	1989	1991	1993	1995	1997
Number	120	117	149	133	100	128
Percentage of sentenced inmates	4.4	3.8	3.9	3.5	2.4	2.6

Source: Ministry of Justice, Census of Prison Inmates[1]

OPIATE USE

Opiates are drugs that are derived from opium poppies. These include heroin, morphine, methadone, codeine, opium, and a wide range of pharmaceutical drugs, such as codeine, that are fairly commonly used.

Opium and its derivatives had been tried by 4 percent of surveyed respondents in the 1998 National Drug Survey; 1 percent stated that they had used one or several forms of this class of drug in the previous 12 months. The forms of opium include poppies (unrefined opium), heroin, morphine, homebake, methadone, pethidine, temgesic and doloxene.

There was a small increase in use of opiates between the 1990 and 1998 Regional Drugs Surveys (Table 79). The prevalence of having tried opium or an opium derivative increased from 3 percent in 1990 to 4 percent in 1998. Use in the year prior to the survey increased marginally from a little under 1 percent in 1990 to a little over 1 percent in 1998.

[1] Braybrook B, O'Neill R. 1988. *A Census of Prison Inmates.* Wellington: Policy and Research Division Branch, Department of Justice.
Braybrook B. 1990. *Census of Prison Inmates 1989.* Wellington: Policy and Research Division Branch, Department of Justice.
Braybrook B, Southey P. 1992. *Census of Prison Inmates 1991.* Wellington: Policy and Research Division Branch, Department of Justice.
Southey P, Spier P, Edgar N. 1995. *Census of Prison Inmates 1993.* Wellington: Policy and Research Division Branch, Department of Justice.
Lash B. 1996. *Census of Prison Inmates 1995.* Wellington: Ministry of Justice.
Lash B. 1998. *Census of Prison Inmates 1997.* Wellington: Ministry of Justice.

Table 79: Usage levels of opiates, percentage of total sample, 1990 and 1998

	Ever tried		Used last year	
	1990	1998	1990	1998
Any opiates	3.0	4.1	0.7	1.3
Heroin	1.1	1.1	0.1	0.1
Homebake	0.7	1.2	0.3	0.5
Morphine	0.8	1.2	0.2	0.4
Poppies	1.1	1.9	0.2	0.5
Other opiates	1.4	0.9	0.2	0.3

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[1]

OPIATE-RELATED MORTALITY

Opiate-related conditions

The conditions that are used to define opiate-related conditions as the underlying cause of death are drug psychoses[2], opiate dependence syndrome, non-dependent abuse of opiates, and poisoning by opiates. Poisoning by opiates includes adverse effects from therapeutic use, suicide, and accidental poisoning. Note that because of the relatively small numbers involved these figures should be taken as indicative only.

There were 156 deaths in the period 1990–96 where opiate-related conditions or poisonings were the underlying cause of death. Figure 31 shows the deaths registered each year for males and females over the 1990–96 period. The figure for males increased from 11 deaths (1990) to 29 deaths registered in 1996. For females, the increase was from one death registered in 1990 to 11 deaths registered in 1996. The figure for males in 1996 was over twice that for females.

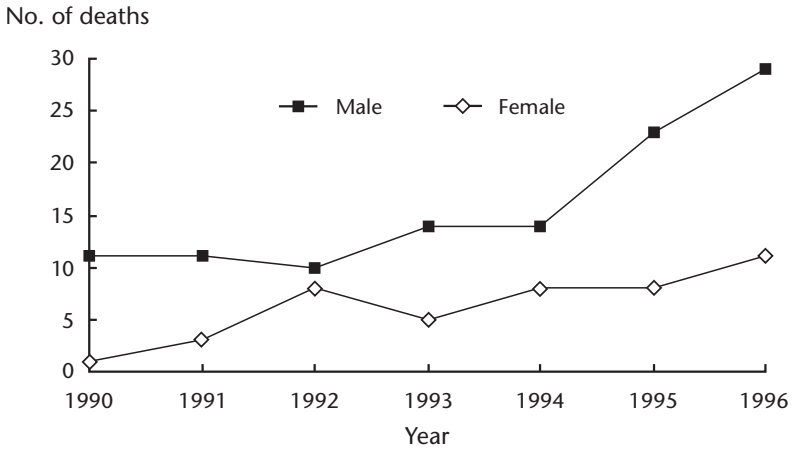

Figure 31: *Deaths due to opiate-related conditions, numbers, by sex and year, 1990–96*

[1] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998.* Auckland: Alcohol and Public Health Research Unit, University of Auckland. Table 8.3.

[2] The category "drug psychoses" includes all drugs other than alcohol. These deaths are classified to opiates where the supplementary text field specifies an opiate as the cause of the psychoses. The supplementary text field is used to provide further information regarding the circumstances of death in cases where the classification does not adequately convey all relevant information.

Deaths due to external causes

This section of the report examines deaths from external causes where the deceased was reported to have had opiates in their blood at the time of the injury or poisoning that led to their death. This excludes deaths where opiate poisoning was the underlying cause of death, as these are already presented above. The recording of the presence of opiates is sourced from post-mortems, coroners' findings, police reports and other relevant information sources.

Table 80 shows the number of deaths due to external causes (other than opiate poisoning) where opiates were detected. There were 16 deaths of males due to external causes of injury and poisoning between the ages of 18 and 49 years where opiates were reported as being in their system. The nine deaths of females due to external causes of injury or poisoning where opiates were detected ranged from 14 to over 55 years of age.

Table 80: Deaths due to external causes where opiates were recorded as being in the blood of the deceased, by age group at death and sex, 1990–96 combined

	Total	0–13	14–17	18–24	25–29	30–34	35–39	40–44	45–49	50–54	55+
Male:	16	0	0	6	2	3	2	2	1	0	0
Female:	9	0	1	0	0	2	4	0	0	0	2
Total:	25	0	1	6	2	5	6	2	1	0	2

Source: New Zealand Health Information Service

OPIATE-RELATED HOSPITALISATIONS

This section presents statistics on publicly funded hospitalisations where there was a diagnosis of an opiate-related condition and/or poisoning by opiate. The figures are for inpatients and day patients only. (See the explanatory notes on page 109 for further information about hospitalisation statistics.)

The number of hospitalisations with a diagnosis of an opiate-related condition or involving opiate poisoning is fairly large in relation to other drugs. This report will therefore be broken into two parts: all opiate-related hospitalisations, and hospitalisations where the principal diagnosis was an opiate-related condition.

Table 81 presents figures for all publicly funded hospitalisations where one or more opiate-related conditions were diagnosed or where opiate poisoning was involved.

Over the three-year period from 1996 to 1998 there were 3955 publicly funded hospitalisations that involved opiate-related conditions and/or opiate poisoning as the reason for admission or as an additional diagnosis. There was a steady rise in the total number of hospitalisations each year (940 in 1996, 1665 in 1998) which is believed to be due to increased reporting of opiate dependence and opiate abuse as additional diagnoses rather than representing a significant increase in opiate-related harm. The figures for total opiate-related hospitalisations are therefore not comparable over time.

Females made up 56 percent of total opiate-related hospitalisations.

Table 81: All publicly funded hospitalisations with an opiate-related condition or poisoning, numbers and rates by ethnicity, sex and year, 1996–98

		1996		1997		1998	
		No.	Rate*	No.	Rate*	No.	Rate*
Māori	*Male:*	36	18.2	73	25.9	59	25.6
	Female:	51	17.4	74	25.5	113	38.4
	Total:	87	18.2	147	25.7	172	31.9
Non-Māori	*Male:*	400	22.3	511	27.4	658	35.2
	Female:	453	24.9	692	36.6	835	43.5
	Total:	853	23.5	1203	31.9	1493	39.3
Total	*Male:*	436	21.9	584	27.5	717	33.3
	Female:	504	22.9	766	34.9	948	42.9
	Total:	940	22.3	1350	31.1	1665	38.0

*Rates per 100 000 population, age-standardised to Segi's world population
Source: New Zealand Health Information Service

Māori made up 10 percent of all hospitalisations from 1996 to 1998 involving opiate-related conditions and/or poisoning.

The 1998 age-standardised hospitalisation rate for Māori males (25.6 per 100 000 population) was 27 percent less than the rate for non-Māori males (35.2 per 100 000 population). The Māori female hospitalisation rate in 1998 (38.4 per 100 000 population) was 50 percent greater than the Māori male rate but slightly lower than the non-Māori female rate (43.5 per 100 000 population).

Opiate-related hospitalisations by age

The age group with the highest hospitalisation rates of Māori males (48.4 per 100 000 population) and non-Māori males (72.8 per 100 000 population) was the 30-to-34-year age group (Figure 32).

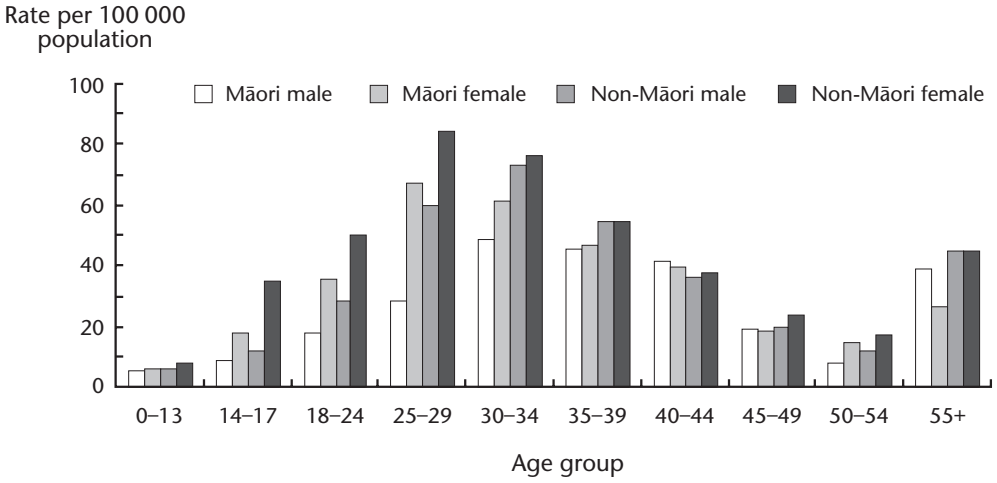

Figure 32: *All publicly funded hospitalisations with an opiate-related condition or poisoning, average age-specific rates by ethnicity, sex and age, 1996–98 combined*

The highest hospitalisation rate for Māori females (66.9 per 100 000 population) and for non-Māori females (84.4 per 100 000 population) was in the 25-to-29-year age group.

Females had higher hospitalisation rates than males for most age groups, and non-Māori were hospitalised at higher rates than Māori for most age groups. The group aged 55 years and over had hospitalisation rates significantly higher than the preceding groups (45 to 49 years and 50 to 54 years).

Opiate-related principal diagnosis

The numbers of hospitalisations where the principal diagnosis was an opiate-related condition rose over the period 1996 to 1998 (Table 82). The hospitalisation rate in 1996 (6.6 per 100 000 population) rose to 7.5 per 100 000 population in 1997 and to 9.0 per 100 000 population in 1998. Because of the relatively small numbers involved, these rates should be treated as indicative only.

Table 82: Publicly funded hospitalisations with a principal diagnosis of an opiate-related condition, numbers and rates, 1996–98

	1996		1997		1998	
	No.	Rate*	No.	Rate*	No.	Rate*
All opiate-related hospitalisations	252	6.6	293	7.5	347	9.0
Poisoning by opiates and related narcotics	118	3.3	130	3.5	156	4.2
Opiate dependence or abuse	110	2.8	135	3.3	145	3.6
Other diagnoses	24	0.7	28	0.7	37	1.1

*Rates per 100 000 population, age-standardised to Segi's world population
Source: New Zealand Health Information Service

The two opiate-related conditions with the highest number of hospitalisations over the 1996 to 1998 period are shown in Table 82. "Poisoning by opiates and related narcotics" was the condition with the highest number of hospitalisations for 1996–98. The age-standardised hospitalisation rate for poisoning by opiates and related narcotics rose from 1996 (3.3 per 100 000 population) to 1998 (4.2 per 100 000 population).

Drug dependence syndrome had the second largest number of hospitalisations over the period 1996–98. The age-standardised rate per 100 000 population for this condition rose from 2.1 in 1996 to 3.3 in 1998.

Figure 33 shows the distribution of hospitalisations with a principal diagnosis of poisoning by opiates and related narcotics or drug dependence syndrome. These diagnoses were the two most common opiate-related principal diagnoses. The distribution demonstrates that hospitalisations due to opiate dependence are more common in the group aged 18 to 39 years, with a peak in the 25-to-29-year age group.

In contrast, hospitalisations with a principal diagnosis of poisoning due to opiates and related narcotics are more evenly distributed across a larger range of age groups.

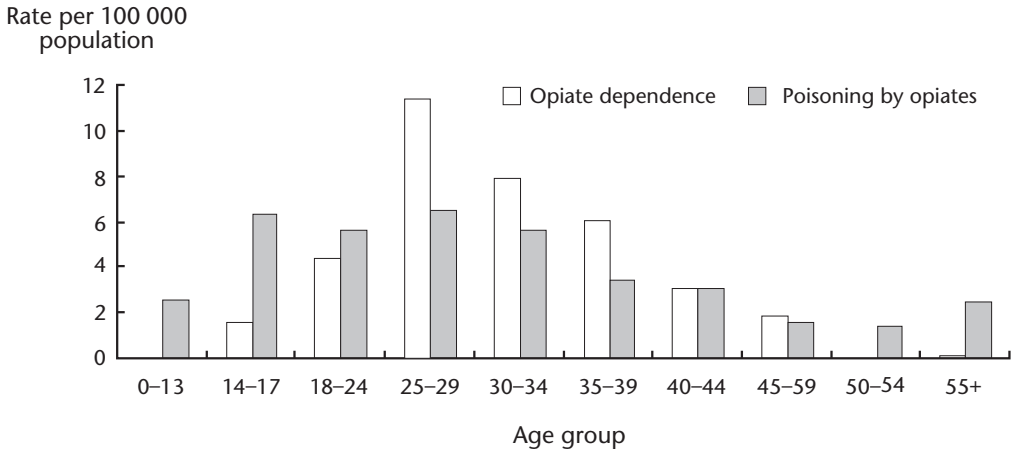

Figure 33: *Publicly funded hospitalisations due to opiate dependence and poisoning by opiates and related narcotics, average age-specific rates, 1996–98 combined*

HALLUCINOGEN[1] *USE*

The next most frequently used class of illicit drugs after marijuana was hallucinogens. In the 1998 National Drugs Survey, 13 percent of survey respondents aged 15 to 45 years stated that they had tried hallucinogens at some time. Six percent stated that they had used these drugs in the past 12 months. Users were likely to be young and male. Seven percent of males aged 15 to 45 years and 13 percent of both sexes aged 18 to 24 years had used hallucinogens in the previous 12 months.

Table 83 shows that use of hallucinogens approximately doubled between the 1990 and 1998 Regional Drugs Surveys. The biggest increase (from 2 percent to 5 percent of the sample) is in use of LSD in the previous year. The proportion that had ever tried LSD also doubled. The percentage of males who had ever tried LSD increased from 8 percent in 1990 to 14 percent in 1998. The percentage of 18-to-24-year-olds that had used LSD in the previous year grew from 5 percent in 1990 to 11 percent in 1998.

Table 83: Usage levels of hallucinogens, percentage of total sample, 1990 and 1998

	Ever tried		Used last year	
	1990	**1998**	**1990**	**1998**
Any hallucinogens	7.8	15.9	2.7	6.6
LSD	5.5	11.6	1.6	4.9
Mushrooms	4.4	9.1	1.5	2.5
Ecstasy	0.9	4.2	0.4	2.1
Other hallucinogens	2.3	3.0	0.4	0.5

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drugs Surveys[2]

[1] A drug that can cause hallucinations when consumed (eg, LSD).

[2] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Table 8.1.

There were also increases in use of hallucinogenic mushrooms and of ecstasy. In 1990, 1 percent of 18-to-24-year-olds had used ecstasy in the previous year; in 1998, 4 percent had used ecstasy in the previous year.

HALLUCINOGEN-RELATED MORTALITY

Hallucinogen-related conditions

The conditions that are used to define hallucinogen-related conditions as the underlying cause of death are drug psychoses[1] , hallucinogen dependence syndrome, non-dependent abuse of hallucinogens, and poisoning by hallucinogens. There was one death of a male in the group aged 14 to 17 years in 1994 due to non-dependent abuse of hallucinogens. The hallucinogen involved was datura flowers. There were no other deaths in the 1990–96 period where hallucinogens alone were the underlying cause of death.

There were two deaths (both males) in the period 1990–96 where a combined drug dependence or abuse (involving a hallucinogen) was the underlying cause of death. In both these cases cannabis was also consumed. One of these combination cases involved magic mushrooms with cannabis and alcohol. The other death involved LSD and cannabis.

External causes of death

This section of the report examines deaths due to external events where the deceased was reported to have had hallucinogens in their blood at the time of the injury or poisoning that led to their death. The recording of presence of hallucinogens is sourced from post-mortems, coroners' findings, police reports and other relevant information sources.

There were four deaths in the period 1990–96 where a hallucinogen was detected or reported to have been consumed and may have contributed to the cause of death. All four of these deaths occurred in 1995 or 1996. Two of these deaths involved datura, the other two LSD. All four deaths were males aged between 14 and 29 years. The two deaths involving datura were both due to accidental drowning/submersion. One of the deaths involving LSD was a suicide by motor vehicle exhaust gas. The other was an accidental fall with possible LSD involvement.

HALLUCINOGEN-RELATED HOSPITALISATIONS

The number of hospitalisations due to hallucinogen-related conditions or hallucinogen poisoning is relatively small. For this reason no breakdown into principal diagnosis, additional diagnosis, or external cause of injury or poisoning categories has been done.

Table 84 presents figures for all discharges from hospital where one or more hallucinogen-related conditions were diagnosed or where hallucinogen poisoning was involved.

Over the three-year period from 1996 to 1998 there were 343 publicly funded hospitalisations that involved hallucinogen-related conditions and/or hallucinogen poisoning as the reason for admission or as an additional diagnosis. The rise in the total number of hospitalisations (92 in 1996, 128 in 1998) is believed to be due to increased

[1] The category "drug psychoses" includes all drugs other than alcohol. These deaths are classified to hallucinogens where the supplementary text field specifies a hallucinogen as the cause of the psychoses. The supplementary text field is used to provide further information regarding the circumstances of death in cases where the classification does not adequately convey all relevant information.

Table 84: All publicly funded hospitalisations with a hallucinogen-related condition or poisoning, numbers and rates by ethnicity, sex and year, 1996–98

		1996		1997		1998	
		No.	Rate*	No.	Rate*	No.	Rate*
Māori	*Male:*	14	4.6	23	7.4	23	7.2
	Female:	8	2.5	8	2.6	16	4.9
	Total:	22	3.6	31	4.9	39	6.0
Non-Māori	*Male:*	47	3.3	64	4.6	69	5.0
	Female:	23	1.8	28	2.3	20	1.6
	Total	70	2.5	92	3.5	89	3.3
Total	*Male:*	61	3.6	87	5.1	92	5.4
	Female:	31	1.9	36	2.4	36	2.3
	Total	92	2.7	123	3.8	128	3.9

*Rates per 100 000 population, age-standardised to Segi's world population
Source: New Zealand Health Information Service

reporting of hallucinogen dependence and hallucinogen abuse as additional diagnoses. As a result of this the figures for total hallucinogen-related hospitalisations are not comparable over time.

Māori made up 27 percent of all the hospitalisations from 1996 to 1998 involving hallucinogen-related conditions and/or poisoning. Males accounted for 70 percent of total hallucinogen-related hospitalisations.

The 1998 age-standardised hospitalisation rate for Māori males (7.2 per 100 000 population) was 44 percent greater than the rate for non-Māori males (5.0 per 100 000 population). The Māori female hospitalisation rate in 1998 (4.9 per 100 000 population) was 32 percent less than the Māori male rate and over three times the non-Māori female rate (1.6 per 100 000 population).

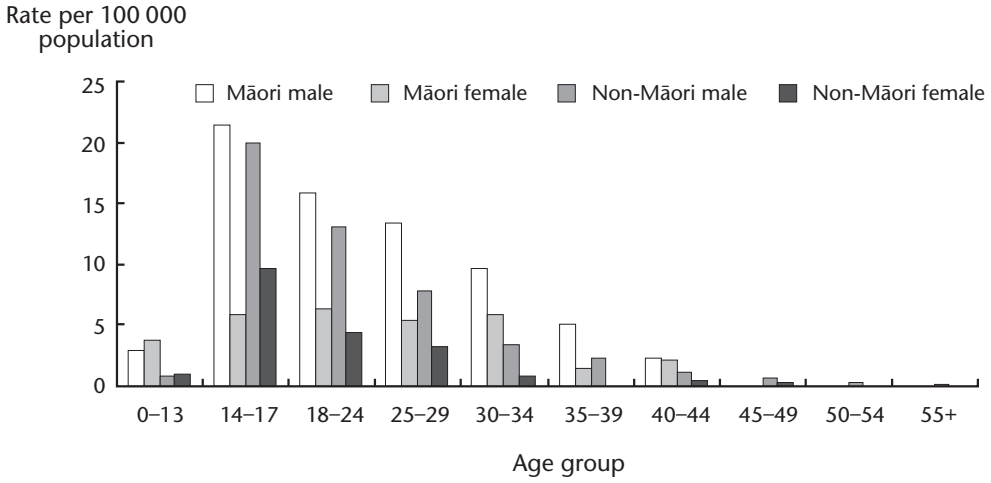

Figure 34: *All publicly funded discharges with a hallucinogen-related condition or poisoning, average rates by ethnicity, sex and age, 1996–98 combined*

Hallucinogen-related hospitalisations by age

The distribution of hospitalisations involving hallucinogen-related diagnoses or poisoning is concentrated in the younger age groups (Figure 34). The age group with the highest hospitalisation rates of Māori males (21.5 per 100 000 population) and non-Māori males (20.0 per 100 000 population) was the 14-to-17-year age group.

The highest hospitalisation rate for Māori females was in the 18-to-24-year age group (6.4 per 100 000 population), whereas for non-Māori females it was in the 14-to-17-year age group (8.9 per 100 000 population).

Māori had higher hospitalisation rates than non-Māori for almost all age groups.

STIMULANT[1] USE

In the 1998 National Drugs Survey, 9 percent of those surveyed (11 percent of men, 7 percent of women) had used stimulants at some time. One subcategory of stimulant is cocaine. Fewer than 1 percent had used cocaine in the previous 12 months. Crack, a variant of cocaine, and ice, a form of methamphetamine, are also in use in New Zealand but in 1998 were only used by a very small percentage (fewer than 1 percent) of people. Eight percent of respondents stated that they had used stimulants other than cocaine or methamphetamine, and 3 percent had used them in the past 12 months. Common stimulants recorded in other surveys are amphetamines and diet pills.

The use of stimulants (including crack and cocaine) also increased in the 1990s. The proportion who had tried any kind of stimulant increased by 6 percentage points between 1990 and 1998 to 11 percent having tried these drugs. Two percent of the sample stated in 1990 that they had been users in the previous year. By 1998 this had risen to 4 percent.

As shown in Table 85, the increase was mainly in the "other stimulants" category. This category includes amphetamines and some other substances. There was some increase in use of cocaine, but little detectable change in use of crack and ice.

Table 85: Usage levels of stimulants, percentage of total sample, 1990 and 1998

	Ever tried		Used in previous year	
	1990	**1998**	**1990**	**1998**
Any stimulants	5.0	11.0	1.6	4.2
Cocaine	2.6	4.4	0.4	1.1
Crack	0.5	0.8	0.2	0.2
Ice	0.1	0.3	0.0	0.1
Other stimulants	3.6	9.6	1.2	3.9

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drugs Surveys[1]

[1] A drug that can stimulate/accelerate the central nervous system (brain, brainstem and spinal cord).

[2] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Table 8.2.

STIMULANT-RELATED MORTALITY

There were no deaths over the period 1990–96 where a stimulant was recorded as the underlying cause of death. There were no deaths due to external causes where a stimulant (cocaine or amphetamine) was detected and recorded.

STIMULANT-RELATED HOSPITALISATIONS

This section presents statistics on publicly funded hospitalisations where there was a diagnosis of a stimulant-related condition and/or poisoning by a stimulant. The hospitalisations are of inpatients and day patients only. See the explanatory notes on page 109 for further information about hospitalisation statistics. Stimulants include cocaine and amphetamines (including "speed").

The number of hospitalisations due to stimulant-related conditions or stimulant poisoning is fairly small in relation to other drugs. For this reason all hospitalisations will be looked at as one group with no breakdown into principal or additional diagnosis, or external causes of injury or poisoning.

Over the three-year period from 1996 to 1998 there were 109 publicly funded hospitalisations that involved stimulant-related conditions and/or stimulant poisoning as the reason for admission or as a secondary diagnosis. There was a rise in the total number of hospitalisations each year (18 in 1996, 46 in 1998) but because of the small numbers involved this should be treated as indicative only.

Māori made up 14 percent of all hospitalisations from 1996 to 1998 involving stimulant-related conditions and/or poisoning. Females made up 53 percent of total stimulant-related hospitalisations.

Twenty-three of the 109 stimulant-related hospitalisations were due to cocaine, and the rest were due to amphetamines.

Other drugs

KEY FACTS

Use

- In the 1998 National Drug Survey, approximately 2 percent of those surveyed stated that they had ever tried tranquillisers for recreational purposes, with a similar proportion having ever tried solvents. Fewer than 1 percent had used tranquillisers in the previous 12 months and fewer than 1 percent used solvents in the previous 12 months.
- Of 994 sporting-related drug tests undertaken in the period from 1 July 1997 to 30 June 1998, only 12 doping infractions were detected and only four competitors failed to provide samples.
- Seventy-one percent of top sports competitors have been tested at least once in their history as competitors. Forty-four percent of competitors have been tested once in the last 12 months.

Mortality

- There were 148 deaths in the period 1990 to 1996 where depressant-related conditions were the underlying cause of death. Thirty-five of these deaths were specifically due to solvents.

Hospitalisations

- Over the three-year period from 1996 to 1998 there were 9271 publicly funded hospitalisations that involved depressant-related conditions and/or poisoning by a depressant as the reason for admission or as a secondary diagnosis. Of these hospitalisations, 531 involved a solvent-related condition and/or poisoning.

DEPRESSANT[1] USE

The 1998 National Drug Survey showed that 22 percent of surveyed respondents (28 percent of men, 17 percent of women) had ever tried drugs other than alcohol, tobacco, or marijuana. Nine percent of respondents (12 percent of men, 6 percent of women) had used these drugs in the previous 12 months. Figure 1 (page 6) shows relative use of licit and illicit drugs.

According to the drug survey, about 2 percent of those surveyed stated that they had ever tried tranquillisers for recreational purposes. Fewer than 1 percent had used tranquillisers in the previous 12 months (Table 86).

Table 86: Frequency of using licit and illicit drugs other than alcohol and tobacco, percentage of total sample, 1998

	Ever	Previous 12 months	Current
Marijuana	50	20	15
Any hallucinogens	13	6	4
Any stimulants	9	3	2
Kava	8	3	1
Any opiates	4	1	1
Tranquillisers	2	1	1
Solvents	2	<1	<1

Source: Alcohol and Public Health Research Unit, 1998 National Drug Survey[2]

Table 87: Usage levels of solvents, tranquillisers, and of hypodermic needles, percentages of total sample, 1990 and 1998

	Ever tried		Used last year	
	1990	1998	1990	1998
Solvents	0.9	1.8	0.2	0.3
Tranquillisers	1.8	2.1	0.6	0.4
Hypodermics	0.9	1.1	0.1	0.1

Source: Alcohol and Public Health Research Unit, 1990 and 1998 Regional Drug Surveys[3]

[1] Any drug that depresses the central nervous system (not to be confused with the psychological state of depression, as a depressant can increase mood and decrease inhibitions).

[2] Field, A, Casswell S. 1999. *Drugs in New Zealand: National Survey, 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figures 6.1–6.6.

[3] Field, A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys, 1990 and1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Table 8.4

About 2 percent of the survey sample had ever tried solvents, and fewer than 1 percent had used solvents in the previous 12 months.

Some classes of drug, particularly the opiates, are administered by hypodermic needle. Only about 1 percent of respondents had ever taken drugs by this means.

Data from the 1990 and 1998 Regional Drug Surveys show that the proportion of people who had ever tried solvents increased slightly in the 1990s, as shown in Table 87. Other changes in use were not statistically significant.

COMMUNITY CONCERNS ABOUT ILLICIT DRUGS AND SOLVENTS[1]

How the community ranks illicit drug use as a problem is shown in Figure 35. This graph suggests that illegal drugs other than marijuana were of about the same level of concern as was alcohol (page 22), and of higher concern than were marijuana (page 69) and tobacco. Unlike the concern about marijuana, tobacco and alcohol, which increased between 1990 and 1998, concern about illegal drugs and solvents diminished over this period.

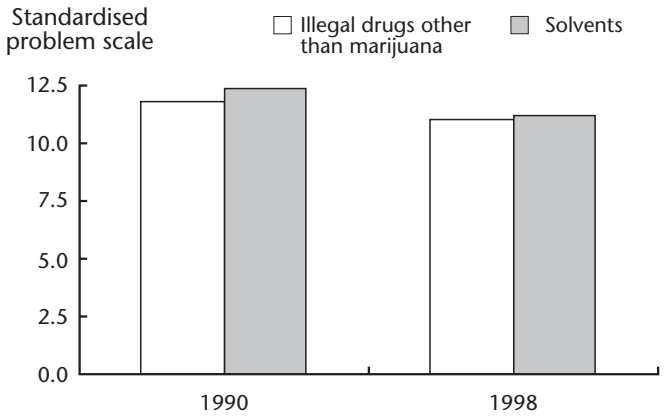

Figure 35: *Perceived seriousness of illicit drugs and solvents use as a community problem, 1990 and 1998*

Source: Alcohol and Public Health Research Unit, 1998 National Drug Survey[2]

DEPRESSANT-RELATED MORTALITY

Depressant-related conditions

The conditions that are used to define depressant-related conditions as the underlying cause of death are drug psychoses, drug dependence, drug abuse, and poisoning (intentional and unintentional) by solvents, sedatives or tranquillisers.

Deaths of males due to depressant-related conditions declined from 18 deaths registered in 1990 to 11 deaths registered in 1996. Female deaths due to depressant-related conditions in 1990 (five deaths) were less than one-third of the 1990 male figure. Female deaths due to depressant-related conditions fluctuated between 1991 (10 deaths) and 1996 (13 deaths), with seven deaths registered in 1994.

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[1] For example, petrol, LPG or glue.

[2] Field, A, Casswell S. 1999. *Drugs in New Zealand: National Survey, 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland. Figure 10.1.

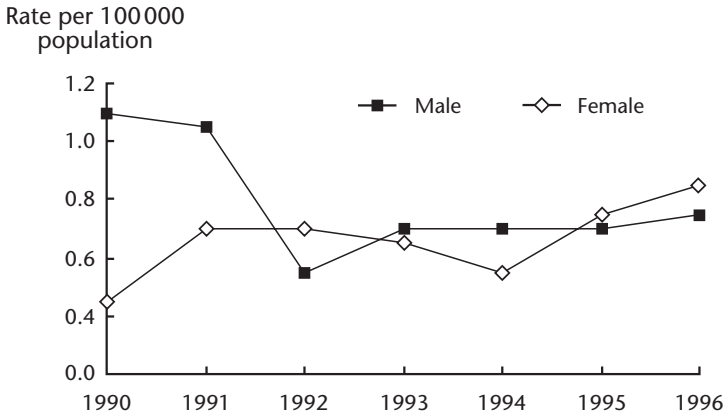

Figure 36: *Deaths due to depressant-related conditions, by sex, 1990–96*

Source: New Zealand Health Information Service

Deaths where solvents were the underlying cause of death made up 24 percent of all depressant-related deaths (35 deaths out of 148) over the 1990–96 period. Nineteen of the deaths due to solvent-related conditions were due to drug dependence or drug abuse where solvents were specified as the drug. The rest were due to accidental poisoning and suicides where solvents were the main substance leading to death, or were one of a mix of substances.

Deaths due to external causes

This section of the report examines deaths due to external events where the deceased was reported to have had a depressant in their blood at the time of the injury or poisoning that led to their death. It excludes deaths where the depressant was the cause of death, as these are covered in the section above. The recording of presence of depressants is sourced from post-mortems, coroners' findings, police reports and other relevant information sources.

Table 88 shows deaths due to external causes (eg, motor vehicle accidents, falls, suicides) where a depressant (including solvents) was recorded as present in the blood of the deceased or reported as having been used. There were 74 deaths over the period 1990 to 1996 where a depressant had been consumed by the deceased prior to dying of external causes. Over 60 percent of these deaths (45 deaths) were males.

Table 88: Deaths due to external causes where a depressant is recorded as being in the blood of the deceased, by age group at death and sex, 1990–96 combined

	Total	0–13	14–17	18–24	25–29	30–34	35–39	40–44	45–49	50–54	55+
Male:	45	2	3	12	6	4	5	2	5	0	6
Female:	29	0	2	2	4	2	5	1	0	3	10
Total:	74	2	5	14	10	6	10	3	5	3	16

Source: New Zealand Health Information Service

There were 21 deaths due to external causes over the period 1990–96 where a solvent had been used by the deceased but was not the underlying cause of death. These deaths have been included in the figures for depressants above. Sixteen of these deaths were of males. Over 75 percent of these deaths where the presence of solvents was recorded were in the group aged 14 to 29 years.

DEPRESSANT-RELATED HOSPITALISATIONS

This section presents statistics on publicly funded hospitalisations where there was a diagnosis of a depressant-related condition and/or poisoning by a depressant. The hospitalisations are for inpatients and day patients only. (See the explanatory notes on page 109 for further information concerning hospitalisation statistics.) Depressants in this report include solvents (eg, petrol, LPG, and glue), sedatives and tranquillisers.

Table 89 presents figures for all publicly funded hospitalisations where one or more depressant-related conditions were diagnosed or where poisoning by a depressant was involved.

Table 89: All publicly funded hospitalisations with a depressant-related condition or poisoning, by ethnicity, sex and year, numbers and rates, 1996–98

		1996		1997		1998	
		No.	Rate*	No.	Rate*	No.	Rate*
Māori	*Total:*	370	67.8	415	71.8	452	76.4
	Male:	149	80.2	172	62.3	191	67.7
	Female:	221	54.6	243	80.7	261	84.9
Non-Māori	*Total:*	2432	70.3	2786	78.2	2816	77.1
	Male:	914	56.1	981	57.3	1053	61.1
	Female:	1518	84.0	1805	98.9	1763	92.7
Total	*Total:*	2802	68.8	3201	77.9	3268	78.0
	Male:	1063	59.7	1153	58.5	1244	62.7
	Female:	1739	77.4	2048	97.0	2024	92.8

*Rates per 100 000 population, age-standardised to Segi's world population.
Source: New Zealand Health Information Service

Over the three-year period from 1996 to 1998 there were 9271 publicly funded hospitalisations that involved depressant-related conditions and/or poisoning by a depressant as the reason for admission or as a secondary diagnosis.

Māori made up 13 percent of all the hospitalisations from 1996 to 1998 involving depressant-related conditions and/or poisoning. For the total population, males made up 37 percent of total depressant-related hospitalisations.

The 1998 age-standardised hospitalisation rate for Māori males (67.7 per 100 000 population) was 11 percent greater than the rate for non-Māori males (61.1 per 100 000 population).

The Māori female hospitalisation rate in 1998 (84.9 per 100 000 population) was 25 percent greater than the Māori male rate but 8 percent lower than the non-Māori female rate (92.7 per 100 000 population).

Table 901 presents age-standardised rates per 100 000 population and numbers for all publicly funded hospitalisations where a solvent-related condition and/or poisoning by a solvent was reported. These figures have been included in the hospitalisation figures for depressants presented earlier. Solvents include glue, petrol, petroleum-based solvents, non-petroleum-based solvents, and liquefied petroleum gas (LPG). There were 531 hospitalisations over the period 1996–98 where a solvent-related condition and/or poisoning by a solvent was involved.

Table 90: All publicly funded hospitalisations with a solvent-related condition or poisoning, by ethnicity, sex and year, numbers and rates, 1996–98

		1996		1997		1998	
		No.	Rate*	No.	Rate*	No.	Rate*
Māori	*Total:*	60	5.2	63	10.3	49	7.7
	Male:	40	6.4	42	14.0	30	9.6
	Female:	20	3.8	21	6.8	19	5.9
Non-Māori	*Total:*	125	5.3	114	4.7	120	4.8
	Male:	81	6.8	76	6.1	73	5.7
	Female:	44	3.7	38	3.4	47	3.8
Total	*Total:*	185	5.2	177	5.7	169	5.3
	Male:	121	6.7	118	7.4	103	6.4
	Female:	64	3.7	59	4.0	66	4.3

*Rates per 100 000 population, age-standardised to Segi's world population.
Source: New Zealand Health Information Service

The distribution of hospitalisations involving depressant-related conditions or poisoning is spread fairly evenly across all age groups, with the highest rates being found among 25-to-34-year-olds (Figure 37). The group with the highest hospitalisation rates of Māori males (133.2 per 100 000 population) and non-Māori males (103.7 per 100 000 population) was the group aged 25 to 29 years.

The 25-to-29-year age group had the highest hospitalisation rates for both Māori females (174.9 per 100 000 population) and non-Māori females (163.9 per 100 000 population).

Depressant-related principal diagnosis

The number of hospitalisations where the principal diagnosis was a depressant-related condition rose slightly over the period 1996 to 1998. The age-standardised hospitalisation rate in 1996 (30.8 per 100 000 population) rose 3 percent to 31.6 per 100 000 in 1998 (Table 91).

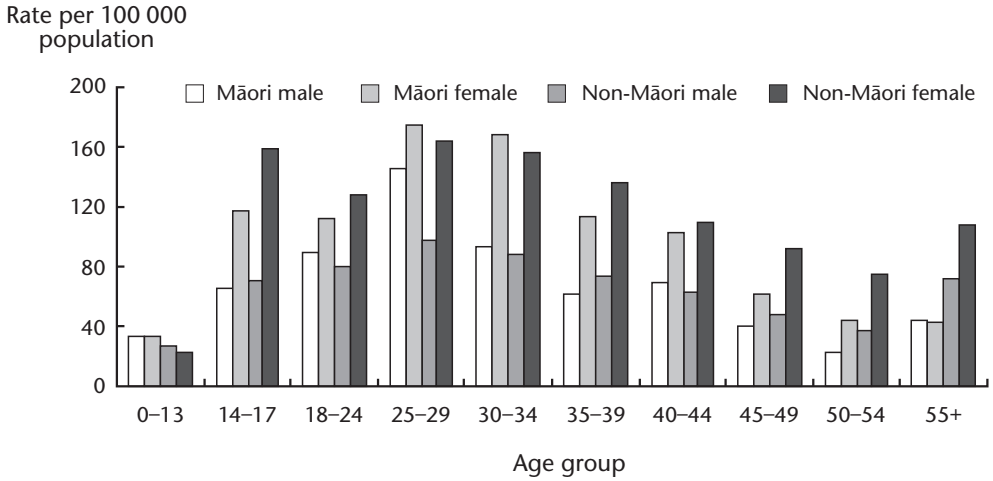

Figure 37: *All publicly funded hospitalisations with a depressant-related condition or poisoning, by ethnicity, sex and age, 1998*

Source: New Zealand Health Information Service

The most common depressant-related principal diagnosis over this period was poisoning by tranquillisers. Poisoning by sedatives and hypnotics was the second most common diagnosis. Depressant abuse or dependence made up a fairly small proportion of hospitalisations for depressant-related conditions.

Table 91: Publicly funded hospitalisations with a principal diagnosis of a depressant-related condition or poisoning, numbers and rates, five leading diagnoses, 1996–98

	1996		1997		1998	
	No.	**Rate***	**No.**	**Rate***	**No.**	**Rate***
All depressants	1124	30.8	1164	30.8	1206	31.6
Poisoning by tranquillisers	667	17.7	730	18.6	778	20.1
Poisoning by sedatives and hypnotics	282	7.5	289	7.7	290	7.2
Toxic effect of petroleum products	58	2.2	35	1.3	43	1.6
Toxic effect of solvents other than petroleum-based	51	1.9	45	1.6	37	1.4
Depressant abuse or dependence	48	1.1	39	0.9	32	0.7
Other	18	0.4	26	0.7	26	0.7

*Rates per 100 000 population, age-standardised to Segi's world population

Source: New Zealand Health Information Service

STEROIDS AND SPORTS DRUGS

Of 994 tests undertaken in the period from 1 July 1997 to 30 June 1998, only 12 doping infractions were detected and only four competitors failed to provide samples. This represented a slight increase on the number of positive tests or refusals in 1996/97 (11).

The New Zealand Sports Drug Agency (NZSDA) conducts an annual survey of athletes to meet government and international agency requirements. As well as testing for the presence of performance-enhancing or sports drugs, athletes are questioned in a telephone survey on the likelihood of testing, the process of drug testing and satisfaction with the testing programme.

Table 92: Doping infractions and failure to provide a sample, 1 July 1997 to 30 June 1998

Sport	Offence*	Penalty†
Body Building		
New Zealand Federation:		
	3 × refusal	3 × 1-year ban
South Pacific Natural Physique:		
	Stimulant – Ephedrine (USA)	Interim suspension (International Federation to hear)
Motorcycling		
	Marijuana	1-year ban
	Stimulant – Phentermine	6-month ban
Rugby League		
	Stimulant – Phentermine	3-month ban
	Stimulant – Pseudoephedrine (Aust)	No penalty
Rugby Union		
	Stimulant – Pseudoephedrine (Aust)	2-week suspension
	Anabolic agent – Metenelone	2-year ban
Softball		
	Stimulant – Pseudoephedrine	Warning
Speedway		
	Stimulant – Pseudoephedrine & Ephedrine (USA)	Warning
	Refusal	2-year ban
	Stimulant – Pseudoephedrine	Warning
Touch Rugby		
	Stimulant – Pseudoephedrine & Ephedrine	Warning
Weightlifting		
	Anabolic agent – Stanozolol	2-year ban

* Bracketed country is nationality of competitor if not New Zealander.

† As notified by sporting body.

Source: New Zealand Sports Drug Agency

Seventy-one percent of competitors had been tested at least once by the NZSDA in their history as competitors as at June 1998. This represents a significant improvement on the number tested in the period to June 1997 (46 percent).

Approximately two-fifths (44 percent) of competitors were tested once in the period July 1997 to June 1998, and 14 percent were tested twice or more.

Explanatory notes

RATES

There are three main ways of calculating rates:

- *Age-specific* rates show the number of events as a proportion of the population in an age group in a particular year.
- *Crude* rates refer to the total number of events as a proportion of the total population. They do not adjust for differences in the age distribution of groups being compared.
- *Age-standardised* rates adjust for differences in the age distribution of the populations being compared. They are calculated by multiplying the age-specific rates by a standard population. This allows for valid comparison of rates between different populations (eg, Māori/non-Māori) and of the same population over time.

TOBACCO USE

Differences in definitions of tobacco smoking

Cigarette smoking (Census 1981, 1996), Health Survey 1996/97: Refers to the active smoking of any tobacco products, including manufactured and hand-rolled cigarettes (excluding cigars, pipe tobacco and cigarillos). It does not include the smoking of any other substances, such as herbal cigarettes or marijuana, but does include the smoking of home grown tobacco in cigarette form.

Cigarette smoking refers to active smoking and does not include passive smoking — the unintentional inhalation by non-smokers of tobacco smoke introduced into the atmosphere by smokers. The consumption of tobacco products by other means, such as chewing, is also excluded.

Tobacco smoking (1992/93 Health Survey): The 1992/3 question asked, Q121, was: "*Would you describe yourself as a tobacco smoker, an ex-smoker or a non-smoker?*" This definition is not restricted to cigarette smoking.

Adjustment for age and sex

The figures for the Health Survey data are not adjusted for age and sex. Health surveys often adjust for age because health status is strongly related to age, while health-risk behaviours and health-related actions such as the use of health services are influenced by both age and sex. Therefore, when prevalence estimates for various sub-populations are compared, the differences observed can (at least in part) be due to differences in age and sex structures.

Seasonal effects in cigarettes and tobacco available for consumption

The cigarette and tobacco quarterly series are highly variable. This is due to the fact that excise on cigarettes and tobacco has been indexed to the rate of inflation on 1 December each year since 1995 (before 1995 it was on a six-monthly basis). Thus there tends to be a larger volume of cigarettes and tobacco passed through Customs before the excise increases.

ALCOHOL AND DRUG USE AND EFFECTS

Data sources

While some information on alcohol production and consumption can be obtained from sources such as the Census of Population and Dwellings, the Household Economic Survey and production statistics, information on drinking behaviour comes from specialised sample surveys. These surveys have been conducted by the Alcohol and Public Health Research Unit (APHRU) of the University of Auckland. In order to describe drinking behaviour in New Zealand, information has been drawn from the following surveys:

- **1995 National Alcohol Survey**. This survey sampled 4232 people aged between 14 and 65 years.
- **1998 National Drug Survey**. This survey sampled 5475 people aged between 15 and 45 years.
- **Regional Drug Surveys**. Surveys on alcohol, tobacco, marijuana and other drugs were conducted in two regions — Auckland and Bay of Plenty — in 1990 and 1998. These sampled approximately 5000 people aged between 15 and 45 years.
- **Annual Auckland Alcohol Surveys**. These have been conducted every year since 1990, and the latest year's data available is 1998. They sample between 1000 and 1500 people aged between 14 and 65 years.
- **Surveys with Māori**. There have been two published reports:
  Te Ao Waipiro (1997). This was derived from the 512 Māori interviewed in the 1995 National Alcohol Survey. This survey made possible a separate analysis of Māori alcohol consumption and publication of the results. Analysis is generally along the same lines as for the general population, except that broader age groupings had to be used.
  Te Ao Taru Kino (2000). This report is based on two national samples of Māori surveyed in 1998 — a sample of 446 Māori from the 1998 National Drug Survey, and a separate sample of 1147 Māori obtained through electoral roll information. When combined, the total number of Māori interviewed was 1593. *Te Ao Taru Kino* discusses and describes Māori use of drugs, including alcohol and tobacco.
- **Surveys with Pacific peoples**. The Annual Auckland Survey of alcohol consumption also allows a limited analysis of alcohol among Pacific peoples. A total of 760 Pacific peoples have been interviewed since 1990. There is a sufficient number of cases for analysis when they are aggregated, but there are insufficient for disaggregation by year so as to analyse change over time. There is also insufficient data for analysis of Pacific peoples' use of drugs other than alcohol.

Survey methodology

All of the above surveys were conducted by computer-assisted telephone interviews (CATI). Household telephone numbers were selected using a stratified random-digit dialling method. Stratification was on a geographical basis, and census data was used to determine relative sizes of these strata. For the New Zealand-wide surveys, the sample was stratified into 32 geographical units based on both geographic regions and level of urbanisation. For the Regional Drug Surveys, the sampling was apportioned between Auckland and Bay of Plenty. Telephone numbers were randomly selected by computer within these geographical strata. For the Annual Auckland Alcohol Survey, telephone

numbers were randomly selected by computer from the free-calling Auckland metropolitan region. The exception to random-digit dialling was the methodology used for part of the 1998 Māori sample. This identified Māori by matching the electoral roll with the telephone directory, and then sampled randomly within that frame. More detail about sampling methodology can be found in the appendices of Wyllie, Millard and Zhang[1] and Field and Casswell[2], and in Dacey and Moewaka Barnes[3].

Standardisation of community concern

This information was obtained from the Regional Drugs Surveys — of the greater Auckland area and the Bay of Plenty region — in 1990 and 1998. A scale from 1 for "not a problem" to 10 for "a serious problem" was used. While all respondents differentiated between alcohol and other drugs in their level of concern, some respondents rated all of these substances towards the low end of the scale, while others rated all drugs towards the high end of the scale. For this reason, the level of response was standardised.

Analysis and transformation of data

Any changes over time or differences between population groups reported in the text are statistically significant. Differences were examined using parametric or non-parametric statistical tests as appropriate. All analysis was done with SAS software.

DRUGS AND CRIME

Source of information

The information on prosecutions and convictions was obtained from the Ministry of Justice's databases of charges and cases finalised in each year from 1990 to 1998. The information for these databases was obtained from the Case Monitoring Subsystem of the Law Enforcement System (LES) of the former Wanganui Computer.

The information of those in prison was obtained from the biennial Census of Prison Inmates. Information for each census was obtained from the Custody/Supervision Subsystem of LES, from prison records, and from interviews with inmates.

Charges and cases

Information on prosecutions is based on charges. However, information on convictions is based on cases. Several charges for the same person were combined to form a case if they had the same first court hearing date or the same final court hearing date. One offence was chosen to represent the case, and this was the offence that attracted the most serious sentence. If several sentences were imposed for one case, information on the most serious offence is presented.

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[1] Wyllie A, Millard M, Zhang J-F. 1996. *Drinking in New Zealand: A National Survey, 1995*. Auckland: Alcohol and Public Health Research Unit, University of Auckland.

[2] Field A, Casswell S. 1999. *Drug Use in New Zealand: Comparison Surveys 1990 and 1998*. Auckland: Alcohol and Public Health Research Unit, University of Auckland.

[3] Dacey B, Moewaka Barnes H. 2000. *Te Ao Taru Kino: Drug Use Among Māori, 1998*. Auckland: Whariki Māori Health Research Group, University of Auckland.

Outcome

The outcome of prosecutions include: proved charges involving young offenders which are finalised in the Youth Court that are not recorded as convictions, discharge without conviction under Section 19 of the Criminal Justice Act 1985 after the offender is found guilty or pleads guilty, and not proved charges where the charges were withdrawn, dismissed, discharged, struck out, not proceeded with or acquitted.

Ethnicity

The LES records the ethnicity for offenders in the categories of Caucasian, Māori, Pacific Island, Negro, Indian, Asian, and Other. No allowance is made for offenders who wish to specify more than one ethnic group.

Type of offence

Cannabis offences are analysed in three categories: using cannabis, dealing in cannabis and other cannabis offences. The category "use cannabis" includes the use of cannabis and possession of cannabis other than for supply. Convictions for the importation, cultivation, or possession of cannabis for supply are included in the category "deal in cannabis". "Other cannabis" offences are mainly offences relating to the possession of pipes or other drug-related utensils.

Offences for drugs other than cannabis are analysed in the same three categories: using, dealing, and other offences. The category "using" includes the use and possession of drugs other than for supply. Convictions for the importation, cultivation, or possession of drugs for supply are included in the category "dealing". "Other drug" offences include the sale, manufacture, or importation of drugs.

MORTALITY INFORMATION

Source of information

Every death occurring in New Zealand is required to be registered within three days after the day of burial in a city or borough, or seven days in any other case. The New Zealand Mortality Registry (maintained by the New Zealand Health Information Service) receives a copy of all death registrations in New Zealand, and this provides demographic data relating to the deceased.

A copy of all death certificates is also received, as well as coroners' findings, post-mortems, newspaper cuttings, police reports, and reports from various other organisations such as the Maritime Safety Authority. This information is used by the Mortality Registry to code the cause of death and any contributing factors.

Causes of death

The classification of causes of death used by the mortality registry is the Australian Version of the International Classification of Diseases, 9th Revision (2nd edition), Clinical Modification (World Health Organization ICD-9-CMA-II).

The selection of the cause of death in New Zealand, where more than one cause of death is entered on a death certificate, is in accordance with the WHO Mortality Rules for Selection of the Underlying Cause of Death. This is largely determined from the

statement of the certifying doctor, but reference is also made to all post-mortem reports received and cancer registrations.

On some occasions hospital case summaries are compared with the entries on the death certificate. Information is also obtained from letters to certifying doctors, coroners' records, the Land Transport Safety Authority, Water Safety New Zealand, and Media Search.

Where the death is due to an external cause such as an accident or poisoning, it is the external cause and not the resulting injury that is coded as the cause of death. However, if the poisoning is the result of an overdose where the drug was taken for recreational purposes (drug abuse) or due to dependence, then the cause of death will be "non-dependent abuse of drugs" or "drug dependence syndrome".

Deaths involving drugs

Some of the codes for dependence, abuse, or poisoning do not specify exactly what drug was involved. In these cases the supplementary information field was examined to ascertain the drug in question.

Deaths due to external causes that involved drugs were all determined by the specification of a drug in the supplementary text field.

HOSPITALISATION INFORMATION

Source of data

The hospitalisation data reported in this publication was extracted from the National Minimum Dataset (NMDS) maintained by the New Zealand Health Information Service. The NMDS contains demographic and clinical data on all discharges of publicly funded inpatients and day patients.

All hospitalisations with a discharge date in the years 1996 to 1998 and an alcohol-related or drug-related diagnosis or poisoning code were extracted. A number of these conditions (eg, pancreatitis) were only potentially related to alcohol or drugs. If the record also contained a diagnosis of alcohol or drug dependence or abuse, or alcohol or drug poisoning, then the diagnosis was deemed to be due to alcohol or drugs. Also, the description that accompanied the code in the hospital discharge data was checked for mention of alcohol or drugs as the cause of the condition. Some hospitals will manually override the automatically generated description to add in additional information in this way.

It should be noted that these figures do not include outpatient or Accident and Emergency contacts with hospitals where the patient was not formally admitted. They do include transfers to other facilities and readmissions of the same person, and so are not a count of individuals.

Type of data

The diagnosis and poisoning data reported to the NMDS by hospitals falls into three main groups.

- **Principal diagnosis**. The principal diagnosis is the condition that was determined, after examination, to be chiefly responsible for the admission to hospital. This principal diagnosis may be a secondary condition to another condition. For example,

a cancer sufferer may start suffering from anaemia as a result of the cancer or treatment. If the anaemia is the reason the patient was admitted to hospital, then this will be coded as the principal diagnosis and the cancer will be coded as an additional diagnosis.

- **Additional diagnosis**. An additional diagnosis is a condition that was reported to the NMDS in addition to the principal diagnosis. These can be either a condition that existed in addition to the principal diagnosis or a condition that arose during the stay in hospital. Up to 24 additional diagnoses can be reported for each stay in hospital.
- **External cause of poisoning**. Every hospitalisation that involves a diagnosis that was brought on as a result of an external cause of injury or poisoning will contain an external-cause code. This external-cause code may relate to the principal diagnosis or to an additional diagnosis and may have occurred before the admission to hospital or during the stay in hospital. These codes supply information regarding the circumstances of the injury or poisoning (eg, motor vehicle crash, assault, suicide, self-inflicted poisoning). Poisoning by drugs or alcohol being used recreationally (abuse) or due to dependence do not have a code for external cause of poisoning — they are coded as a condition, using the appropriate code for alcohol or drug abuse or dependence.

Ethnicity

Hospital ethnicity data for the period used is based upon the concept of self-identification, with up to three ethnic groups able to be recorded. Prioritised ethnicity was used to analyse hospitalisations by ethnic group.

CONTACT DETAILS

For further information, updated figures, or more specific details regarding the statistics presented in this publication please contact the relevant organisation.

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