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## Alcohol Consumption and Alcohol-related Health Outcomes

### Key points

- Total alcohol consumption per person has decreased 25 percent since 1980, although there has been a slight increase in the past year.
- The decline in alcohol consumption since 1980 may have reached a plateau in recent years.
- Between 1996 and 1997, per capita spirit consumption increased by 36 percent, while both wine and beer consumption fell by 4 percent.
- The increase in spirit consumption in the past year is attributed to the increase in ready-mixed spirit-based drinks.
- Alcohol-related mortality rates have declined 38 percent between 1980–82 and 1994–96, probably reflecting the decline in overall per capita alcohol consumption over that period.
- The rate of decline needs to increase to meet the year 2000 alcohol-related mortality target.
- Strategies that have reduced consumption of alcohol include the excise tax legislation, which keeps the real price of alcohol stable by increasing the price of alcohol in line with inflation.

### TARGETS

To reduce the overall consumption of alcohol by the general population to 8.7 litres of pure alcohol per adult per year or less by the year 2000.

To reduce the age-standardised alcohol-related mortality rate to 3.5 per 100 000 or less by 1995, and to 2.2 per 100 000 or less by the year 2000.

### Target derivation

The targets were set in the document *Alcohol: The Public Health Commission's advice to the Minister of Health 1993–1994* (PHC 1994a). The targets were based on an analysis of available data, trends and strategies.

The consumption target was to reduce the overall consumption of alcohol in the general population by 10 percent or more between 1992 and the year 2000. Other alcohol consumption targets were suggested, but no suitable baseline data existed at that time.

The alcohol-related health outcome target was to reduce the number of people dying from alcohol-related (primary cause) conditions by 15 percent (or more) between 1990 and 1995, and 45 percent (or more) between 1990 and the year 2000.

It was acknowledged at the time that the alcohol-related health outcome target did not provide a complete picture of all aspects of alcohol-related harm.

The alcohol-related health outcome target was revised in 1997 by replacing the number of deaths with age-standardised mortality rates, as rates are a more meaningful measure to monitor changes over time.

The target to reduce the percentage of fatal intoxicated drivers (see Road Traffic Injuries section) was also proposed in *Alcohol: The Public Health Commission's advice to the Minister of Health 1993–1994* (PHC 1994a).

## Indicators

### *Consumption*

Estimated total alcohol available for consumption per person aged 15 years and over.

### *Alcohol-related health outcomes*

Deaths due to alcohol-related (primary cause) conditions. These are the ICD-9-CM codes of alcoholic liver disease and cirrhosis (571.0–571.3); alcoholic cardiomyopathy (425.5); alcohol-dependence syndrome, including alcoholism (303); alcoholic gastritis (535.3); alcohol poisoning (E860); alcoholic psychoses (291); and alcohol abuse (305.0).

## Data sources

### *Consumption*

The amount of alcohol available for consumption is calculated by Statistics New Zealand from production for domestic consumption, plus imports, less exports. It does not include the consumption of home-brewed alcohol. Alcohol available for each person aged 15 years and over is calculated using these data and Statistics New Zealand quarterly population estimates. The most recent data available are for 1997.

### *Alcohol-related health outcomes*

NZHIS mortality data. The latest available data are provisional for 1996.

## Related targets

- Road traffic injuries
- Youth suicide
- Ischaemic heart disease
- Stroke

## Health impact

Associations have been found between levels of per capita alcohol consumption and health, social and economic outcomes (PHC 1994a). Alcohol is the most commonly used recreational drug in New Zealand (Black and Casswell 1993).

A 1995 survey of drinking patterns of New Zealanders aged 14–65 found 87 percent of respondents had consumed alcohol in the last year (Wyllie et al 1996). Men consumed 73 percent of the alcohol. The top 10 percent of drinkers, most of whom (83 percent) were male, drank almost half of the alcohol consumed.

Males aged 18–24 years were over-represented in this group, comprising 33 percent of the heaviest drinkers, but only 9 percent of the survey. Fifty percent of females who drank heavily (in the top 10 percent) were also in the 18–24-year age group.

Seventy-four percent of men reported that they consumed at least six or more 15 ml drinks at least annually, 41 percent monthly and 21 percent at least weekly. Female drinkers were asked how often they consumed four or more 15 ml drinks; 57 percent did so at least annually, 22 percent at least monthly and 8 percent at least weekly.

Three or more harmful effects in the past year were experienced by 24 percent of male and 12 percent of female drinkers. Twelve percent were drinking more than they were happy with (15 percent of male and 9 percent of female drinkers).

Compared to the general population fewer drinkers were Māori; however, the mean annual volume of alcohol consumed was higher for Māori (Dacey 1997). Māori drank much higher quantities on an occasion – almost double the level of the general population. Māori reported more problems experienced as a result of both their own and other people's drinking.

A recent survey of Aucklanders' drinking habits reported that between 1990 and 1996 the number of drinkers has dropped but the amount consumed has increased. This pattern was more pronounced among low-income people and teenagers (Alcohol and Public Health Research Unit 1998).

Adverse impacts of alcohol consumption on health include an increased risk of certain types of cancer (of the liver, mouth, pharynx, larynx, oesophagus, breast, and possibly colorectal cancer). High levels of alcohol consumption also increase the risk of high blood pressure and haemorrhagic stroke, cardiac conditions other than ischaemic heart disease, and liver cirrhosis (Anderson 1996). For all of the adverse outcomes, the higher the consumption of alcohol the higher the risk of the outcome.

In addition, high levels of alcohol consumption are linked to mental disorders such as alcoholism and alcohol psychoses. High levels of intoxication during pregnancy can lead to birth defects in infants, including foetal alcohol syndrome and foetal alcohol effects. Alcohol also plays a role in unsafe sexual behaviour, criminal offending and adverse social consequences. Alcohol is a significant risk factor for many types of unintentional and intentional injury (eg, drowning, falls and assault).

In 1997, 25 percent (n = 74) of the drivers killed in motor vehicle crashes had a blood alcohol level in excess of the legal limit. This is down from the 1996 total of 84 (30 percent) drivers who died with a blood alcohol level in excess of the legal limit (see section on Road Traffic Injuries).

Much discussion has revolved around the so-called 'U-shaped curve' or 'J-shaped curve' of alcohol-related mortality in industrialised countries (Criqui 1990; Marmot and Brunner 1991; Labry et al 1992; Rehm and Sempos 1995). The effect of alcohol is protective for ischaemic heart disease when used in moderation. Higher risks are found among non-drinkers and heavy drinkers, where the risk increases with increasing consumption of alcohol.

However, in the younger age groups there is a linear relationship between alcohol consumption and all-cause mortality (Anderson 1996; Scragg 1995) due to the proportion of deaths from injuries in these age groups. In the older age groups the J-shaped relationship can be found. As the older ages contribute more to overall mortality, the overall pattern appears J-shaped.

Most of the epidemiological studies are of males aged 40 years and over (Anderson 1996). Jackson (1996) found that the relationship between moderate alcohol consumption and all-cause mortality depends on the individual's underlying risk of death due to other causes. Only for middle-aged and older people, who have high absolute risk from ischaemic heart disease, does alcohol's protective effect outweigh its adverse effects.

In New Zealand, a recent Treasury discussion paper calculated that a conservative estimate of external costs associated with alcohol were in the range of \$432 million to \$713 million per annum (Hall 1996).

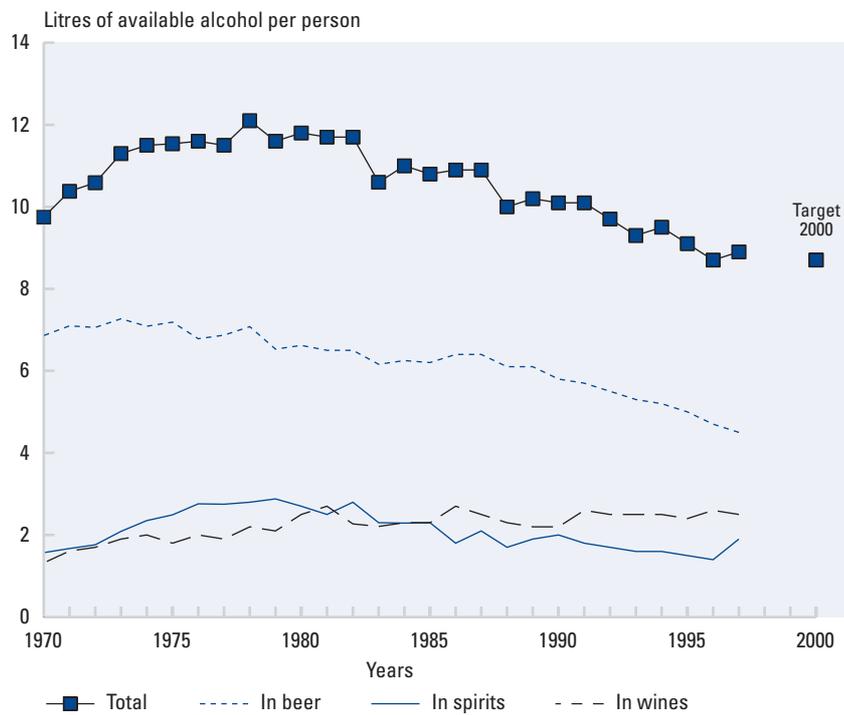
### Progress toward the targets

Alcohol is most commonly consumed in beer (51 percent), followed by wine (29 percent) and spirits (21 percent).

Total alcohol consumption per person aged 15 years and over has fallen by 25 percent since 1980, and 13 percent since 1989, though the amount of available alcohol for consumption per person seems to have plateaued in recent years (Figure 54). Wette et al (1993) suggest that price has been a major determinant of alcohol consumption in New Zealand. The fall in consumption of alcohol in New Zealand since 1989 is likely to reflect the adjustment of alcohol excise tax to inflation.

In 1996 available alcohol consumption per person was at its lowest level, at 8.7 litres per person, achieving the target for the year 2000. However, in 1997, the estimated total alcohol consumption per person aged 15 and over increased to 8.9 litres, an increase of 2 percent. This slight increase in consumption per person may indicate that the decline in alcohol consumption in recent years has reached a plateau.

**Figure 54:** Estimated alcohol consumption, per person aged 15 years and over, 1970–97

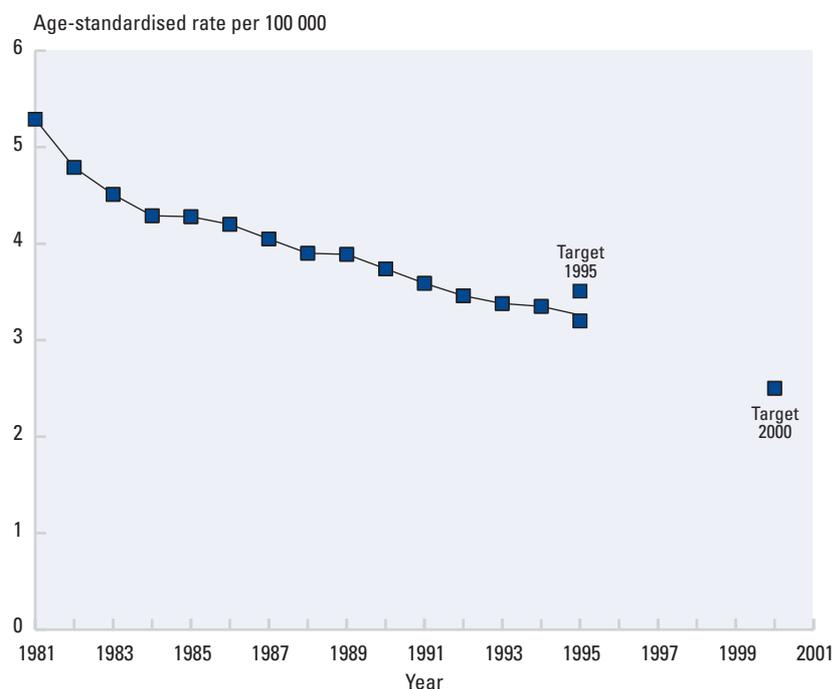


Source of data: Statistics New Zealand

Most of the increase in alcohol consumption was in spirits, which increased from the previous year by 36 percent, while alcohol in beer and wine consumption both fell by 4 percent. Statistics New Zealand attributes the increase in spirit consumption to the increased availability of pre-mixed spirit-based drinks (SNZ 1998a).

In 1996 an estimated 146 people died from the specific alcohol-related diseases considered. Around half of these deaths were due to alcoholic liver disease and cirrhosis. The overall age-standardised mortality rate from these causes at 3.31 per 100 000, has declined by around 38 percent between 1980–82 and 1994–96 (Figure 55). The decline in alcohol-related (primary cause) deaths reflects the decline in alcohol consumption over the same period. The 1995 target, of 3.5 per 100 000, was achieved. The average rate for 1994–96 needs to decline by around 8 percent annually to meet the target in 2000.

**Figure 55:** Alcohol-related (primary cause) mortality rate (three-year rolling average), 1980–96



In 1996 most alcohol-related (primary cause) deaths occurred in males (70 percent), and 72 percent occurred in people aged more than 50 years. Twenty-one of the deaths were Māori males and seven were Māori females. This is a substantial increase from earlier years due to major changes in the coding of ethnicity which occurred in the latter part of 1995 (see Use of Ethnicity Data section).

In 1996 Māori males had the highest mortality rate from alcohol-related diseases, at 14.2 per 100 000, more than three times as high as non-Māori males. But caution must be made in interpreting this information as numbers for Māori are low and only one year of data is available using the new definition of ethnicity.

## Assessment

### Data quality

The volume of alcohol available per person aged 15 years and over is a measure of the amount of alcoholic beverage released to the market and therefore available for consumption. This measure is not necessarily indicative of total actual consumption, as this information does not account for any changes in levels of stock pending sale. However, it is unlikely that the level of stocks held changes substantially from year to year. No information is available to measure any change in level of stocks of alcohol held pending sale and therefore not yet consumed.

### Limitations of measure

Annual consumption figures provide only an estimated mean consumption for each person aged 15 years and over and will include non-drinkers. Also, this does not include home-brewed alcohol, which is estimated to be around 3 percent of the absolute available alcohol (Wyllie et al 1996).

The target measure provides no information regarding differences in alcohol consumption between population subgroups or patterns of alcohol consumption. Patterns of alcohol consumption – for instance, ‘binge drinking’ – as well as the total quantity consumed are important in influencing some health outcomes.

Alcohol-related disease mortality is used as an indicator of the total burden of alcohol on health. The measure used to monitor the target is ‘diseases due to alcohol-related (primary cause) conditions’. This includes alcoholism, alcoholic liver disease and cirrhosis, alcohol poisoning, alcoholic psychoses and alcohol abuse. It does not include the contribution of alcohol to deaths from road traffic injuries, other injuries, cancer, cardiovascular diseases and other conditions. Therefore the measure does not provide a complete picture of all aspects of alcohol-related harm, but provides an indicator suitable for monitoring trends. The target does not adequately represent the difference between Māori and non-Māori alcohol-induced ill health because of the small number of Māori deaths.

### Interpretation of trend

Alcohol consumption has declined steadily since 1980, and seems to have reached a plateau in 1997. As the target is close to being achieved only a small decrease is required to reach the target in 2000.

The target to reduce the number of deaths from specific alcohol-related causes is unlikely to be met based on current trends.

Alcohol-related (primary cause) death rates have declined gradually since 1980. However, unless the rate of decline increases to around 8 percent per year it is unlikely the year 2000 target will be met.

### Strategies

Legislation	<p>Drink-driving legislation and enforcement, together with changing social attitudes to drinking and driving, have contributed to the decrease in alcohol consumption and alcohol-related harm over recent years.</p> <p>The Sale of Liquor Act 1989 places restrictions on where, when and to whom alcohol can be sold. These include days and times of sale and the purchaser’s age.</p> <p>In 1996–97 the Sale of Liquor Act 1989 was reviewed by the Liquor Review Advisory Committee to establish whether it was meeting its objective of establishing a reasonable system of control over the sale and supply of liquor to the public with the aim of contributing to the reduction of alcohol abuse. The review recommended a number of changes to the Act, such as lowering the minimum drinking age to 18 and permitting Sunday trading (Ministry of Justice 1996). These proposed changes were introduced into Parliament in September 1998, and the final vote on the bill is expected to happen by mid-1999.</p>
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Legislation ( <i>cont'd</i> )	<p>The Alcohol Advisory Council (ALAC) was established by legislation in 1976 to promote moderation in the use of alcohol and to reduce misuse. ALAC's 1995–98 strategic plan includes the promotion and monitoring of policy, research, public health and treatment programmes and other initiatives, for a variety of settings and populations.</p>
Policy	<p>Currently there are no health warnings on the labels of alcoholic beverage containers (as are required in the US), nor are there any labels which specify container content in terms of 'standard drinks' (as required in Australia). Standard drinks labelling will be reviewed over the next few years to align New Zealand food standards with those of Australia.</p> <p>The <i>National Drug Policy</i> (Ministry of Health 1998f) focuses attention on drug issues and acts as a mechanism for co-ordinating the government response to those issues. Part I of the <i>National Drug Policy</i> focuses on tobacco and alcohol, and Part II on illicit and other drugs (including cannabis). The goal of the policy, 'as far as possible within available resources, is to minimise harm caused by tobacco, alcohol, illicit and other drug use to both individuals and the community' (Ministry of Health 1998f).</p> <p>An Inter-Agency Committee on Drugs and a Ministerial Committee on Drug Policy have been established under the National Drug Policy to manage the implementation of an intersectoral work programme to address drug-related harm in New Zealand.</p> <p>ALAC is co-ordinating the development of a National Alcohol Strategy, in collaboration with a wide range of stakeholders. The strategy will support the <i>National Drug Policy Part 1: Tobacco and alcohol</i> (Ministry of Health 1996f).</p> <p>ALAC funds a number of health promotion programmes and produces education resources which deal specifically with foetal alcohol syndrome (FAS) and foetal alcohol effects (FAE).</p>
Taxation and price	<p>A key factor in the decline of alcohol consumption has been taxation, as price is a major determinant of alcohol consumption (Wette et al 1993). Alcohol excise tax is adjusted annually based on changes in the consumer price index. As a result, the inflation-adjusted cost of alcohol has stayed the same in recent years.</p>
Public health programmes	<p>Services provided by HHSs include promotion of host responsibility, last-drink surveys, alcohol and safer sex programmes, and antenatal education.</p> <p>Strategies are being implemented by ALAC to reduce heavy drinking among sports people. The focus is on the effect of alcohol on sporting performance.</p> <p>ALAC has an ongoing national multi-media campaign, which began in the 1996–97 financial year, and focuses on excessive drinking. The campaign also includes messages for women who are pregnant or who are planning pregnancy.</p> <p>A campaign is being funded by ALAC aimed at reducing binge drinking among teenagers. To support this campaign ALAC has launched a Web site (<a href="http://www.alcohol.org.nz">www.alcohol.org.nz</a>) incorporating an interactive game, and information.</p>

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<p>Public health programmes <i>(cont'd)</i></p>	<p>ALAC is continuing with the development of its Host Responsibility campaign and programmes to promote responsible drinking environments. This includes messages about moderation in the use of alcohol, including the option of choosing not to drink in various situations, or ever.</p> <p>The Manaaki Tangata programme recognises that both tangata whenua and manuhiri have an equal responsibility to promote safer drinking practices, and offers a resource kit for Māori to assist them to develop and implement safer alcohol policies.</p> <p>ALAC conducts ongoing research reviewing the impact of alcohol advertising and health promotion messages.</p> <p>The Police support alcohol-related harm reduction through publicising the risks of drinking and driving (in association with LTSA) and through random breath-testing and enforcement of the Sale of Liquor Act 1989.</p> <p>The Ministry of Education and ALAC are currently working together to strengthen drug education programmes in schools, including development of guidelines for the purchase of such programmes.</p> <p>The New Zealand Drug Foundation, which is funded under contract by the HFA, is an umbrella organisation of organisations working in alcohol and other drug fields. It includes alcohol information on its Web site (<a href="http://www.nzdf.org.nz">www.nzdf.org.nz</a>) and in regular information bulletins sent out to its wide membership.</p>
<p>Training</p>	<p>During 1995–96 ALAC undertook a major review of the alcohol education and training needs of professionals in health and other fields. Implementation of the recommendations is planned during 1997–98 and subsequent years.</p> <p>ALAC has commissioned the preparation of guidelines for working with young people experiencing drug problems.</p>

### Target revision

Although the target was achieved in 1996, consumption levels have since increased slightly and are now above the target. Development of a new target is recommended for beyond the year 2000.

Additional targets which monitor adverse effects of alcohol are being developed and will be monitored next year.