

# MENTAL HEALTH IN NEW ZEALAND FROM A PUBLIC HEALTH PERSPECTIVE

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MANATU HAUORA



# CHAPTER 23: SUICIDE AND PARASUICIDE

KEREN SKEGG

Suicide is strongly associated with psychiatric disorder and psychological distress. Causes are still poorly understood but are clearly multifactorial.

The relationship between suicide, episodes in which a person survives deliberate self-harm, and the relatively common experience of suicidal thoughts, is unclear. Although a wish to die is commonly described by survivors, most neither wish nor expect death to be the outcome. Unlike ‘attempted suicide’, the term ‘parasuicide’ avoids ascribing intention, and usually refers to any episode of deliberate self-harm that is survived. Nonetheless, survivors are at greatly increased risk of later suicide. Nordentoft and colleagues (1993) found that by 10 years after a self-poisoning admission to a hospital 10.6 percent had committed suicide – a risk 30 times that of the general population.

Only half of male suicides and three-quarters of female suicides may be officially recorded (O’Donnell and Farmer 1995), and under-recognition is even commoner for parasuicide (Diekstra 1993).

## OCCURRENCE

### SUICIDE

In 1993, 349 male and 94 female deaths in New Zealand were attributed to suicide, with rates of 20.5 per 100 000 for men and 5.4 for women. Comparison across ethnic groups requires age standardisation and awareness of the substantial under-recording of Māori ethnicity on death certificates. Age-standardised suicide rates (Segi’s World Population) for 1984 to 1993 for people identified on death certificates as Māori were 12.2 per 100 000 for men and 2.3 for women, while the rates for Pacific people were 8.5 and 2.0 – all much lower than those for the remainder of New Zealanders.

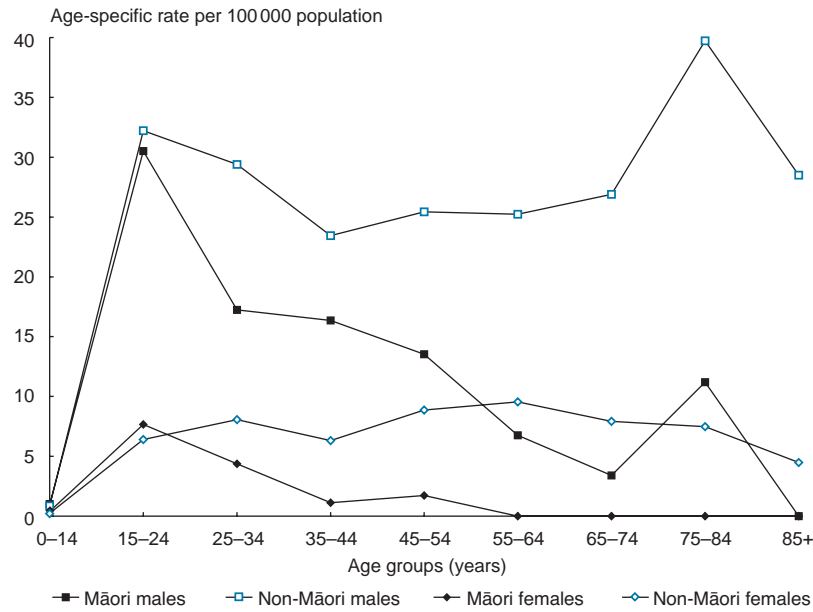
### YOUTH SUICIDE

Here an alarming pattern can be seen. Whereas in most developed countries suicide risk increases steadily with age, this is no longer the case in New Zealand, as can be seen in Figure 23.1. New Zealand and Australia are the only Western countries in which youth suicide rates are actually higher than total suicide rates (Pritchard 1992). Figure 23.2 shows trends in youth suicide rates: for men aged 15–24 years, suicide rates have almost quadrupled since the early 1970s. The 1993 rates were 39.4 per 100 000 for males and 5.9 for females. New Zealand recorded the highest suicide rate for those aged 15–24 years of the OECD countries, closely followed by Finland. The Australian rate was considerably lower. The context of the New Zealand and Finnish youth suicide rates is very different as Finnish suicide rates increased with age and the rate for the total population was more than double

that of New Zealand. In New Zealand, suicide was the second commonest form of death in people aged 15–24 years, accounting for one in five deaths in young men. The 20–24 years age group carry greater risks than adolescents, with suicide rates for men and women aged 20–24 years at 53.5 and 7.8 per 100 000 respectively, compared with 24.8 and 4.6 in those aged 15–19 years (Pritchard 1992).

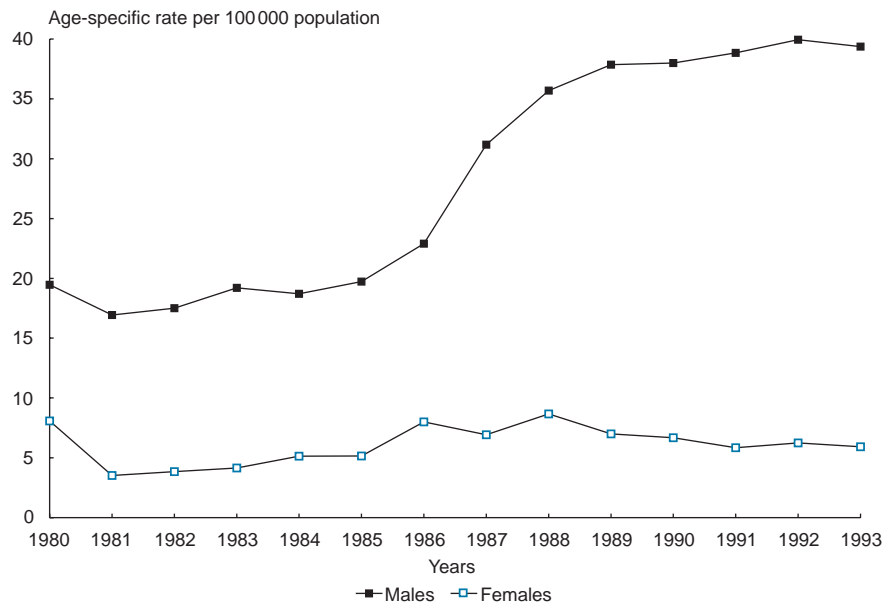
In contrast to the rates for all ages combined, suicide rates for young Māori are very similar to those of young non-Māori, as can be seen in Figure 23.1. The true rates are probably higher.

**Figure 23.1: Mortality rates due to suicide, by age group, sex and ethnicity, aggregated for 1984–1993**



Source: New Zealand Health Information Service

**Figure 23.2: Mortality rates due to suicide, ages 15–24 years, by sex, 1980–1993**



Source: New Zealand Health Information Service

## PARASUICIDE

There were 1219 male and 2067 female hospital discharges resulting from parasuicide in 1994, giving rates of 73.3 per 100 000 for men and 120.8 for women. When rates for Māori, Pacific people and other New Zealanders are compared, those for Pacific people were clearly the lowest, whereas Māori rates were higher than non-Māori. However, comparison is limited by the lack of confidence in the determination of ethnicity by health services.

Rates for 15–24-year-olds were more than double those of the total population, at 175.2 per 100 000 for males and 294.7 for females, with Māori rates again being higher than non-Māori, whereas the rates for Pacific people were lower.

## IMPACT ON CAREGIVERS

There has been little scientific study of the impact of suicide on those caring for the victim. In addition to the expected grief, there will often be the special pain of believing that the death indicated that the care offered was in some way lacking. Sequelae include being at increased risk of suicide and sometimes encountering negative attitudes (Ness and Pfeffer 1990). Spouses may be either better or worse off afterwards than before (Shepherd and Barraclough 1974).

## RISK FACTORS AND PREDICTORS FOR SUICIDE AND PARASUICIDE

As mentioned previously, a history of parasuicide is itself a predictor of completed suicide.

### DEMOGRAPHIC FACTORS

#### *Sex, Age and Ethnicity*

See above.

#### *Marital Status*

##### *SUICIDE*

Married people experience the lowest risks followed by single people, with the widowed (especially men) and divorced carrying the highest risks (Smith et al 1988).

##### *PARASUICIDE*

Petronis and colleagues (1990) found that divorced and separated people had rates 11 times higher than those not in this category.

## *Occupation, Socioeconomic Status and Unemployment*

### *SUICIDE*

Suicide risk varies with occupation. Despite certain professional occupations carrying high risks, higher risks have been found in the lowest socioeconomic class (Kreitman et al 1991; Charlton et al 1993), and in the unemployed in whom the nature of the association remains highly problematic (Platt 1984). Particularly debated is the extent to which the link may be because people with psychiatric illnesses are more likely to be unemployed.

### *PARASUICIDE*

This behaviour is associated with socioeconomic disadvantage and unemployment (Platt 1984; Beautrais et al 1996c).

### *Sexual Orientation*

It is widely believed by community groups that gay and lesbian youth are at increased risk of suicide and parasuicide. Moscicki (1995) has challenged this perception and emphasised that careful objective investigation is required.

## PSYCHIATRIC ILLNESS

### *Suicide*

An in-patient psychiatric diagnosis has been shown to be the strongest predictor of suicide, with an odds ratio of 11.3 (Allebeck and Allgulander 1990). Over 90 percent of people who commit suicide were suffering from a psychiatric disorder, with depression being the commonest condition (Barraclough et al 1974). Even recent studies of young people (Marttunen et al 1991; Lesage et al 1994) have found suicide to be rare in the absence of psychiatric disorder, although in addition to the expected depression they found much substance abuse and conduct or personality disorder, and a number of adolescent boys studied by Marttunen's group had 'adjustment disorder', a term for psychological distress rather than a major mental illness. Comorbidity is common, particularly having two or more of depression, personality disorder and substance abuse.

In the course of a psychiatric episode, the most dangerous periods are at the beginning of the acute phase and after discharge (Appleby 1992). Goldacre and colleagues (1993) found the risk of suicide in the first four weeks after discharge is 213 times that of the general population for men and 134 times for women. The lifetime risk of suicide is of the order of 15 percent for people with affective disorder, 10 percent for people with schizophrenia (Hawton 1994) and 5–10 percent for people with borderline personality disorder (Frances et al 1986).

### *Parasuicide*

About a third of these people meet criteria for a formal psychiatric diagnosis (Hawton 1994). Petronis and colleagues (1990) found that for major depressive illness and active alcoholism, the relative risks are 41 and 18 respectively.

## PHYSICAL ILLNESS

An excess of physical illness has been found among people completing or attempting suicide (Hawton 1987). People with acquired immunodeficiency syndrome (AIDS) are at greatly increased risk of suicide (Marzuk et al 1988). There is also a high risk of self-harm in asymptomatic individuals with HIV infection (Gala et al 1992). Epilepsy is also associated with increased risk (Hawton 1994). Often psychiatric illness may be the mediating factor between the physical illness and suicide or parasuicide.

## SOCIAL AND FAMILY FACTORS

Social factors have been recognised as relevant to suicide since Durkheim's (1897) observations about high suicide rates in societies in which individuals were not sufficiently integrated or regulated. A social factor common to both suicide and parasuicide is socioeconomic disadvantage (Gunnell et al 1995). A number of adverse characteristics of the social environment (such as parental divorce) are usually correlated with the risk of both suicide and parasuicide in the young, but the causal mechanisms remain obscure (Diekstra et al 1995). The same sorts of factors may increase vulnerability to psychiatric disorder in the young, which in turn increases the risk of suicide. Rates of attempted suicide are elevated in adolescents from disadvantageous childhood and family circumstances (Fergusson and Lynskey 1995; Beautrais et al 1996c).

Adolescents who harm themselves are more likely to have been sexually abused (de Wilde et al 1992) and women who were sexually abused as children are more likely to harm themselves as adults (Romans et al 1995).

For suicide, another risk factor is a family history of suicide, either through biological vulnerability or a shared family environment.

## PSYCHOLOGICAL FACTORS

### *Suicide*

Hopelessness during an episode of illness seems to predict suicide in the long term (Beck et al 1985; Fawcett et al 1990; Rifai et al 1994). Two clusters of personality traits are common among adolescents who committed suicide – irritable-aggressive and anxious-perfectionistic (Shaffer and Hicks 1994).

### *Parasuicide*

For suicidal adolescents, Diekstra and colleagues (1995) concluded that evidence for a core cognitive organisation (such as cognitive rigidity or polarised thinking) is still weak, but subgroups might have particular cognitive styles. They believed, however, that these probably played at most a minor role once serious depressive disorder, misuse of alcohol and drugs and a family history of suicidal behaviour were taken into account. They commented that perhaps only a subgroup of suicidal adolescents are highly impulsive, and thought the substance use of suicidal adolescents suggested a preference for palliative coping reactions.

## SITUATIONAL FACTORS

For both suicide and parasuicide, there is likely to have been some situational factor that, combined with pre-existing factors such as psychiatric illness, resulted in the event occurring. Sometimes the psychiatric disorder may have caused the life event (Heikkinen et al 1995).

### *Life Events*

Adverse life events precede suicide more commonly in the young, and in men, and the type of event varies with the phase of development of the individual (Rich et al 1991; Graham and Burvill 1992; Heikkinen et al 1995). Marttunen and colleagues (1991) found that almost half of their group of adolescents had experienced a stressful event within 24 hours of death. Such events include acute disciplinary crisis, rejection or humiliation (Shaffer et al 1988).

### *Exposure to Suicide*

Time-space clustering of suicide and parasuicide sometimes occurs and is primarily a phenomenon of youth (Gould et al 1989; Gould et al 1994), with clusters accounting for 1–5 percent of all suicides in young people (Centers for Disease Control and Prevention 1988). Family members or peers may be involved, and suicides publicised through the media have been related to increases in suicide in some studies, although this remains an area of controversy (Platt 1994).

### *Being in Custody*

Prisoners are at increased risk of suicide, particularly in New Zealand in recent years, with a relative risk of 8.2 in male prisoners compared with unconfined men (Skegg and Cox 1991). Suicide in custody accounts for a quarter of all suicides in Māori men aged 15–49 years, but only 1.7 percent of suicides in non-Māori (Skegg and Cox 1993). This difference could be explained by the disproportionate number of Māori men in custody. Some of the risk in prisoners is likely to be related to psychiatric disorder, but the effects of incarceration are almost certainly important.

### *Availability of Means for Suicide*

Differences in suicide rates can relate to differences in the accessibility of lethal methods (Marzuk et al 1992). In the United States, one of the strongest situational risk factors is the presence of a firearm in the home (Moscicki 1995). In New Zealand this method accounts for a lower proportion of suicides (19 percent of men and 7 percent of women in 1993) and the risk cannot be assumed to be the same.

### *Intoxication*

A person vulnerable to suicide could impulsively make the final decision while intoxicated by alcohol or by illicit drugs. One-third of people who had committed suicide in Western Australia had a positive blood alcohol reading (Hayward et al 1992).

## AN INTEGRATIVE APPROACH

The Canterbury Suicide Project is a recent case control study of those making medically serious suicide attempts and those who completed suicide compared to control subjects. Current publications have focused on those who have made serious suicide attempts and further papers are in preparation or in press. They found that the risk of a suicide attempt increased with increasing psychiatric morbidity (Beautrais et al 1996b) and that in youth (aged 13–24 years) the risk of serious suicide attempts increased with the extent of exposure to childhood adversity, social disadvantage and psychiatric morbidity, each of these factors making independent contributions to the risk of a serious suicide attempt, with the overall risk increasing in a non-linear fashion, so that the aggregate risk was greater than the sum of the individual risks (Beautrais et al 1996c; Beautrais 1996). Such a perspective perhaps allows a greater focus on the number and severity of overall risk factors rather than particular focus on a certain type of risk factor in planning preventive strategies.

## PROTECTIVE FACTORS

Most people at risk of suicide, even in the highest risk groups, do not actually kill themselves. Linehan and colleagues (1983) composed a ‘reasons for living’ inventory after surveying a street sample and found six primary reasons for living if suicide was contemplated. The most important, clinically, was concerns for children. The other factors were survival and coping beliefs, responsibility to family generally, fear of suicide (including pain), fear of social disapproval, and religious or moral objections.

### *Children*

The protective value of children has been demonstrated for both suicide and parasuicide (Wenz 1982; Appleby 1991; Hoyer and Lund 1993).

### *Religion*

Kerkhof and Kunst (1994) commented that ‘the protective power of collective moral values and religion against suicide seems to be greatly neglected. Even for those not religiously oriented, religion provided through the centuries a structure in society which enables individuals to give meaning to their lives.’

### *Social Support*

Heikkinen and colleagues (1993) considered a supportive social network to act as a protective factor. Even a twice-weekly telephone call appeared to protect against suicide in the elderly (De Leo et al 1995).

### *Type of Society*

A number of countries with strong religious adherence and prohibitions against suicide (eg, Greece, Egypt, Bahrain) have low suicide rates, but as they also differ from New Zealand in many other ways, it is difficult to ascertain which features are the key ones. It has been suggested that the very low rate of adolescent suicide in Greece might be related to strong family ties (Beratis 1991). Within New Zealand, the lower suicide rates of older Māori people (particularly women) compared with non-Māori are striking and could be related to their greater involvement in Māori cultural life compared with young Māori women (Murchie 1984).

## YOUTH SUICIDE: POSSIBLE REASONS FOR HIGH NEW ZEALAND RATES

Many Western countries have experienced rising youth suicide rates. Suggested explanations are likely to apply to New Zealand as well: higher prevalence of depression in recent generations of young people, increased use and misuse of alcohol and psychoactive drugs, suicidal models in the mass media, possible increase in family conflict and decline in parental support associated with changes in family structure, and changing circumstances in society as a whole (Diekstra et al 1995). Social change of this sort has been extensive in New Zealand, with weakening of the traditional family structure, loosening of traditional social norms such as those limiting premarital sexual relationships, and diminution of religious belief and shared moral values. Durkheim's term of 'anomie' or 'normlessness' would apply well, and may be even more pronounced in New Zealand than in countries that are less secular or have more of a sense of continuity with the past. Young Māori in particular have been alienated from their cultural heritage.

Young New Zealanders show high levels of risk-taking behaviour as exemplified by high rates of ex-nuptial births and motor vehicle accidents. In order to explain why New Zealand youth suicide rates are far higher than those of superficially similar countries such as England, such features need to be considered. Without a long tradition of an 'underclass', and raised with high expectations, young New Zealanders might feel particularly disillusioned and unsupported when they experience problems such as unemployment (Deavoll et al 1993; Pritchard 1995).

Young men with poor social circumstances and disrupted social relationships are at increased risk of suicide (Allebeck and Allgulander 1990). As much as half of the recent increase in suicide in younger men in England and Wales could be accounted for by the increased numbers remaining single or becoming divorced (Charlton et al 1993). New Zealand men might be particularly reluctant to talk about problems and seek help. The break-up of a relationship could create particular vulnerability if it simultaneously deprived a young man of his sole confidante.

There are no clear explanations for New Zealand's exceptionally high youth suicide rates, but factors which need to be explored further include psychiatric disorder, patterns of substance use (including cannabis), the secular and 'normless' nature of New Zealand society, and psychological aspects of New Zealand youth such as risk-taking and help-seeking behaviour.

## STRATEGIES FOR SUICIDE PREVENTION

Gunnell and Frankel (1994) summed up the problem in their recent review of evidence for suicide prevention: 'No single intervention has been shown in a well conducted randomised controlled trial to reduce suicide.' They tabulated possible interventions, along with the quality of evidence and the percentage reduction in suicides that could be estimated for each. Their table provides a valuable basis for discussion of possible interventions for New Zealand (see Table 23.1).

**Table 23.1: Effect of and exposure to possible suicide prevention strategies**

<i>Setting and intervention</i>	<i>Exposure to intervention</i>	<i>Estimated reduction in total suicides (%)</i>	<i>Quality of evidence*</i>
<b>Primary health care</b>			
GP education and guidelines on the treatment of depression	25% of all suicides consult in week before, 40% in month before suicide. (GP sees patient in week before suicide once every eight years.) GPs fail to recognise 50% of cases of severe depression.	Uncertain †	II/III
Improved prescribing; selective serotonin re-uptake inhibitors	9 million antidepressant prescriptions per year	4 ‡	III
<b>Secondary health care</b>			
Screening questionnaires	Whole population, potentially 10–15% suicides	0	II
Increased care around time of discharge		2–3 ‡	III
Multidisciplinary audit (GP and psychiatric)	Those presenting to psychiatrist and GPs before suicide	Uncertain ¶	III
Improved access (contact phone numbers, regular review, etc)	Prevalence of suicide ideation 1–3% of population per year	Uncertain	III
Provision of alcohol and drug services	28% men and 11% women drink above recommended levels; 15–25% of those committing suicide have a history of alcoholism	Uncertain	III
Attempts to maintain contact with those defaulting from follow-up	Former psychiatric patients	Uncertain	III/IV
<b>Public health measures</b>			
<b>Health promotion:</b>			
Encourage exercise	Whole population	Uncertain	III/IV
Sensible drinking	Whole population	Uncertain	III/IV
Stress management	Whole population	Uncertain	III/IV
<b>Suicide hotspots:</b>			
Improved safety measures	All those who are actively suicidal (5% of suicides are by jumping; 70% of these jump from manmade structures)	1–2 ‡	III
Design of underground transport		< 1	III

[Continued on next page]

Table 23.1: [Continued from previous page]

<i>Setting and intervention</i>	<i>Exposure to intervention</i>	<i>Estimated reduction in total suicides (%)</i>	<i>Quality of evidence*</i>
<b>Public health measures [continued]</b>			
<b>The media:</b>			
Reinforcement of reporting guidelines	Whole population	1 ‡	III
Reinforcement of guidelines on fictional portrayal of suicide and parasuicide	Whole population	1 ‡	III
<b>Government and industry:</b>			
Strategies to reduce unemployment	6% of working population unemployed (1991)	1–2 ‡	III
Alcohol taxation	Whole population	Uncertain	III
Drug availability and packaging legislation	Actively suicidal people (1–3% of population/year)	2 ‡	III
Car exhaust design and catalytic converters	Actively suicidal people (1–3% of population/year)	7 §	III
Plastic bag design	Actively suicidal people (1–3% of population/year)	< 1 ‡	III
Firearm availability	Actively suicidal people with access to guns (3% of suicides)	1 ‡	III
<b>Professional bodies and voluntary agencies:</b>			
Counselling and support (Samaritans, Cruse, National Farmers Union, CAB, Relate, prison support groups, etc)	High risk professional groups (1%) and actively suicidal people	1 <sup>  </sup>	IV
Increased outreach support to identified high risk callers	High risk callers to Samaritans	0	III/IV
School based programme	Children of school age	0	III/IV
†	Gotland studies suggest that a 20–48% reduction may be achieved; these figures are for the year following the education programme and were obtained for an island population cared for under the Swedish health care system. Not comparable to British setting; findings inconclusive.		
‡	Estimate based on information available on proportion of suicides in a high risk group or proportion using a particular method, assuming alternative methods not used by 25–30%.		
§	Car exhaust gases used in 22% of suicides; if one third of these individuals did not use another method, 7% reduction would result. This will occur with the transition to catalytic converters.		
	Estimate based on findings of age and sex specific reduction in suicide areas covered by suicide prevention centres in United States.		
¶	Bristol Confidential Inquiry found seriousness of suicide risk not fully appreciated in 75% of suicides by inpatients and recent inpatients.		

[Continued on next page]

**Table 23.1:** [Continued from previous page]

*	Quality of evidence (US Preventive Task Force classification):
I	Evidence obtained from at least one properly designed randomised controlled trial.
II-1	Evidence obtained from well designed controlled trials without randomisation.
II-2	Evidence obtained from well designed cohort or case-control analytic studies, preferably from more than one centre or research group.
II-3	Evidence obtained from multiple time series with or without intervention. Dramatic results from uncontrolled experiments (such as the results of the introduction of penicillin in the 1940s) could be regarded as this type of evidence.
III	Opinions of respected authorities, based on clinical experience; descriptive studies; reports of expert committees.
IV	Evidence inadequate owing to problems of methodology (sample size; length or comprehensives of follow-up; conflicts of evidence).

Source: Gunnell and Frankel 1994. (Table III). The table is reproduced here with the kind permission of the authors, and the British Medical Journal.

## SUICIDE PREVENTION IN PRIMARY HEALTH CARE

General practitioners (GPs) or other primary health care workers might be able to prevent some suicides. One study has found lower suicide rates in regions with more physicians (Rihmer et al 1993).

Another study that gave GPs an educational programme on depression showed that afterwards, more antidepressants were prescribed and the suicide rate declined (Rutz et al 1992). Suicide rates were, however, already declining before the programme began (MacDonald 1993). A major limitation of this approach is that only people who are in contact with GPs are potentially able to benefit, and young people are less likely to have seen a GP before suicide (Vassilas and Morgan 1993). In New Zealand, where the proportion of young people committing suicide is so much higher than in Britain, this is likely to severely limit the usefulness of this approach. Moreover, in New Zealand people must pay to visit a GP.

A more promising focus in primary care could be patients with a previous psychiatric history, as 50 percent of this group had seen their GP within 15 days of death (Matthews et al 1994).

It has been suggested that about 4 percent of suicides could be avoided with improved prescribing among GPs, including using selective serotonin re-uptake inhibitors (SSRIs) in preference to tricyclics because of their much lower toxicity in overdose (Gunnell and Frankel 1994). Doubt has recently been cast, however, on the importance of which type of antidepressant is used (Jick et al 1995).

## PSYCHIATRIC SERVICES AND SUICIDE PREVENTION

Since psychiatric patients are 'the group above all others at high risk of suicide' (Appleby 1992), the provision of first-rate psychiatric services (including alcohol and drug services) ought to have potential for suicide prevention. Indeed, it has been suggested that better treatment of mental illness is a more realistic aim than trying to prevent suicide (Wilkinson 1994). Treatment needs to be accessible to all, including Māori people and young people, for whom traditional services may need to be modified.

Deficiencies in patient care can be addressed through multidisciplinary audit. A Confidential Enquiry into Homicides and Suicides by Mentally Ill People has been established in the UK, and a similar system should be considered here. The need for improved care around the time of discharge has been highlighted (Goldacre et al 1993), and could possibly reduce suicide rates by 2–3 percent.

Patients in community psychiatric care have a high suicide rate (Cantor et al 1992) and there has been concern expressed for young patients who might have been permanently hospitalised in earlier decades (Haugland et al 1983). Although not advocating 'reinstitutionalisation', these authors regarded suicide as an unintended negative side-effect of the deinstitutionalisation movement that required thoughtful remedies. It is important to maintain sufficient in-patient resources (Morgan 1994) and there is some evidence for this from Italian suicide rates in the period following psychiatric reforms (Williams et al 1986).

In 1990 New Zealand began improving its forensic psychiatric services by implementing some of the recommendations of the 1988 Mason Report (Mason et al 1988). Whether these changes will be sufficient to reduce prison suicide rates remains to be seen.

## LEGISLATIVE STRATEGIES

Most attempts to limit the means for suicide involve legislative change. This approach reflects Silverman and Maris's (1995) 'injury control model'. It might have particular potential for reducing youth suicides, since these may more often be impulsive. The main argument against this approach is that a person intent on suicide might simply use an alternative method instead. There is conflicting evidence from different studies (Marzuk et al 1992; Ohberg et al 1995).

### *Firearms*

Carrington and Moyer (1994) noted a decline in both firearm and total suicide rates following enactment of gun control laws in Ontario. In the US the presence of a gun in the home was associated with an increased risk of suicide (Kellerman et al 1992). Although a study in Canterbury, New Zealand, was inconclusive (Beautrais et al 1996a), a possible effect should not yet be ruled out. One simple approach would be to ensure that the present law requiring firearms to be locked away is enforced. Adapting Gunnell and Frankel's calculation to the proportion of New Zealand suicides that are related to firearms suggests potential for preventing 4 percent of suicides.

### *Car Exhausts*

Clarke and Lester (1987) found that the rate of car exhaust suicides declined following the introduction of emission controls, and suggested catalytic converters could be an important element in suicide prevention. Since this method accounts for 19 percent of all suicides in New Zealand, laws requiring catalytic converters and modification to the design of exhaust pipes in older cars could have the potential to reduce suicides by 5–6 percent.

### *Alcohol Taxation or Sales Restriction*

Recent declines in suicide rates in former Soviet republics have been partly attributed to strict limitations on the sale of alcohol (Varnik 1991; Varnik and Wasserman 1992). Whether this would work in New Zealand is not known.

### *Availability of Medicines*

Hawton and colleagues (1996) advocated limiting the number of tablets in an individual preparation of paracetamol. Limiting prescription quantities of particularly toxic drugs might also help. In New Zealand the present system for prescription charges encourages larger scripts. If repeat prescriptions did not attract a prescription charge or dispensing fee, some fatal self-poisonings could be prevented. Since poisoning with solid or liquid substances accounts for a smaller proportion of suicides in New Zealand than in the UK (26 percent of women and only 6.6 percent of men), any reduction in suicide would be less than the 2 percent suggested by Gunnell and Frankel.

### *Diversion from Custody*

It is important not only to provide humane care for prisoners and do all that is possible to prevent suicide, but also to minimise the use of custody. With a quarter of all suicides in Māori men aged 15–49 years occurring in custody, there is clearly scope for prevention.

### *Plastic Bag Design*

Gunnell and Frankel thought a small reduction in suicides in the UK could result if suicide by suffocation was made more difficult. In New Zealand this method is scarcely used, so this approach would not be helpful.

## EDUCATION

Campaigns aimed at the general public, such as the Defeat Depression Campaign in Britain, might be a way of reaching young people with no psychiatric contact, who are unlikely to contact a GP when suicidal (Vassilas 1994). Another aim of education could be to reduce the stigma attached to psychiatric illness (Hawton 1994) so that people would be less inhibited about seeking help.

### *Curriculum-based Programmes*

Education can also be aimed at particular groups, such as secondary-school pupils. When the Centers for Disease Control in the US asked experts to name suicide prevention programmes for young people that were thought likely to be effective, school-based education programmes figured strongly, despite little evidence for benefit and some danger of harm (Centers for Disease Control and Prevention 1994). A particular concern is that some curriculum-based programmes have given inaccurate information (Shaffer 1994). Because of the current lack of evidence for effectiveness and the potential for harm, it would be wiser to aim education in schools at risk factors such as substance abuse rather than suicide *per se* (Garland and Zigler 1993). When projects are evaluated, any effect on parasuicide could be included in the outcome measures.

The Centers for Disease Control and Prevention (1994) encouraged suicide prevention programmes aimed at young adults (aged 20–24 years), since their risks are higher than school-aged people. This group are not as accessible, but tertiary institutions and courses aimed at preparing youth for employment contain large numbers of young people.

## CASE-FINDING

Trying to prevent suicide by 'case-finding' was another approach frequently encountered by the Centers for Disease Control and Prevention (1994). School pupils might be screened, or school and community 'gatekeepers' such as teachers, counsellors, clergy, and health care providers could be trained to recognise young people at risk of suicide. Such programmes should ensure strong links with existing mental health resources, in order to have mental health care available for young people identified as suicidal. Shaffer (1994) believed that direct case-finding might be more effective than relying on outside observers, and described a screening instrument being tested in New York City. Where appropriate, the student would be interviewed by a clinician and connected with a clinical service. If this proves to be successful it could be worth using in New Zealand in schools and tertiary institutions and in places where at-risk youth are receiving education or support.

## MINIMISING SUICIDE BY 'CONTAGION'

When the media abstain from publicising cases of suicide, rates may fall (Sonneck et al 1992). The New Zealand media have generally been careful but some recent exceptions emphasise the need for continuing vigilance in this matter (Steering Group on Youth Mental Health and Suicide Prevention 1994). Although potentially dangerous, media messages can at times be positive (Simkin et al 1995). Guidelines can be used to reduce the likelihood of 'copycat' suicides after a suicide (Rivers 1995)

## ALLEVIATING SOCIAL PROBLEMS

The social conditions prevailing in a country may affect the risk of suicide (Diekstra et al 1995). There can be no certainty that attempting to alleviate social problems such as unemployment will reduce suicide rates, but since these problems deserve attention anyway, efforts should be made. Hawton (1994) believed prevention of unnecessary family breakdown to be relevant to suicide prevention in the young.

## COUNSELLING AND SUPPORT AGENCIES

Shaffer and Hicks (1994) concluded that crisis centres have no, or at best, very limited effects on the suicide rate. Counselling services with other goals (eg, Relationship Services) are not using resources that might otherwise be deployed for suicide prevention, and may play a small part in averting suicide.

The Centers for Disease Control and Prevention (1994) believed that peer support programmes (designed to foster peer relationships and competency in social skills) could be worth using in at-risk young people.

## SECONDARY PREVENTION OF PARASUICIDE

Negative findings for secondary prevention are believed to relate partly to methodological problems (Cantor 1994). In some subgroups, episodes of repetition might be preventable (Gunnell and Frankel 1994). No studies have looked exclusively at identifying and treating repeaters early (Appleby and Warner 1993).

If standard care for parasuicide patients is unsatisfactory, any prospect of preventing repetition or completed suicide will be diminished. The Royal College of Psychiatrists (1994) recently produced a consensus statement on the general hospital management of adult deliberate self-harm. Similar guidelines would be worth adopting in New Zealand, perhaps in one region to begin with, with careful evaluation of any effect on parasuicide or suicide rates.

## CONCLUSIONS

Many risk factors and some protective factors have been established for suicide. The presence of psychiatric disorder (including substance abuse and personality disorder) emerges as a key factor, in the absence of which suicide rarely occurs. Most people with psychiatric disorders do not, however, commit suicide. It is the interaction of this factor with other influences, both social and personal, that leads to suicide. Much research is needed to understand how this occurs.

Little is yet known about the prevention of suicide and this area, too, requires intensive research. As Gunnell and Frankel (1994) point out, the problem is not that effective interventions exist but are under-used: the problem is that there is no evidence that current strategies do work. It is therefore imperative that any strategy adopted for suicide prevention is stringently evaluated (Coggan et al 1995). Ideally, strategies could be tried in some regions of New Zealand first so that other regions could act as controls. Unless the population involved in an intervention is large, it will be impossible to assess whether it has prevented any suicides.

The most promising way forward lies in using a combination of approaches. First, the prevention, recognition and treatment of psychiatric disorder, including substance abuse, needs to be improved. This should include attention to care following psychiatric discharge. Secondly, a variety of legislative strategies could be employed to make it more difficult for people to commit suicide, including modifying the design of car exhausts, firearm controls, and removing charges for repeat prescriptions. A third aspect would be to address social adversity since this is clearly a risk factor, although it is not yet possible to specify which aspects are causal.

Youth suicide should be identified as a particular focus for preventive efforts. Whether specific suicide targets are valuable is a moot point. Pursuing a target that is not accompanied by strategies that make it achievable may be a fruitless exercise. On the other hand, a national target does have the advantage of focusing attention on a problem. Whether or not New Zealand identifies a specific target of suicide reduction, action needs to be taken to prevent as much as possible of this wastage of human life.

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