

NATIONAL SUICIDE PREVENTION STRATEGIES

In 1996, the United Nations published guidelines to assist and stimulate countries to develop national strategies aimed at reducing morbidity, mortality, and other consequences of suicidal behaviour. These guidelines emphasised the need for inter-sectorial collaboration, multi-disciplinary approaches, and continued evaluation and review. The United Nations identified several elements that should increase the effectiveness of suicide prevention strategies, including:

- *Support from government policy,*
- *A conceptual framework,*
- *Well established aims and goals,*
- *Measurable objectives,*
- *Identification of organisations capable of implementing objectives,*
- *Ongoing monitoring and evaluation.*

Furthermore, the United Nations advocated a number of activities and approaches to meet the aims of national strategies, including:

- *Promote the early identification, assessment, treatment and referral of persons at risk of suicidal behaviours for professional care;*
- *Increase public and professional access to information about all aspects of preventing suicidal behaviour;*

- *Support the establishment of integrated data collection system, which serves to identify at-risk groups, individuals, and situations;*
- *Promote public awareness with regard to issues of mental well-being, suicidal behaviour, the consequences of stress and effective crisis management;*
- *Maintain a comprehensive training programme for identified gatekeepers (e.g. police, educators, mental health professionals);*
- *Adopt culturally appropriate protocols for the public reporting of suicidal events;*
- *Promote increased access to comprehensive services for those at risk for, or affected by, suicidal behaviour;*
- *Provide supportive and rehabilitative services to persons affected by suicide/ suicidal behaviour;*
- *Reduce the availability, accessibility, and attractiveness of the means for suicidal behaviour;*
- *Establish institutions or agencies to promote and coordinate research, training and service delivery with respect to suicidal behaviour.*

Taylor et al. (1997) reviewed suicide prevention policies worldwide and found that five countries either had comprehensive national strategies for suicide prevention or were in the process of establishing such a strategy. These countries were Australia, Finland, New Zealand, Norway, and Sweden. A national strategy was defined by a set of integrated activities that were multifaceted. Several countries also had what Taylor et al. (1997) termed ‘prevention programmes’, which consisted of one or more targeted activities with no planned coordination between activities. Countries with prevention programmes were the Netherlands, England, United States, France, and Estonia. Since Taylor’s review, comprehensive national strategies have evolved in England, the United States, Denmark, and most recently Germany.

Finland was the first country to develop a national suicide prevention strategy, which commenced in the mid 1980's. The Finnish strategy was implemented in four stages, commencing with a comprehensive analysis of 1,397 suicides to identify appropriate target groups and issues (1986-1991), and followed by the creation of an action programme (1992), implementation of the programme (1992-1996), and evaluation (1997-1998) (Upanne, 1999).

In 1995, Australia's Commonwealth Department of Health and Aged Care published the *National Youth Suicide Prevention Strategy*. The administration of the strategy was co-ordinated by the Department of Health and Aged Care with an ongoing consultation process involving a broad range of government and non-government stakeholders (Mitchell, 2000). In 1999, a *National Suicide Prevention Strategy* (NSPS) was introduced to build on the former *National Youth Suicide Prevention Strategy* (NYSPS). This is administered by the Australian Government Department of Health and Ageing.

Sweden established the National Council for Suicide Prevention in 1993, followed by the founding of the Swedish National Centre for Suicide Research and Prevention of Mental Ill-Health in 1994. A national programme to develop suicide prevention was drawn up by the Swedish National Centre for Suicide Research, the Swedish National Board of Health and Welfare and the National Institute of Public Health over the period 1993 – 95. This programme is now implemented across the whole country, and consists of individual and population strategies. The National Council for Suicide Prevention is responsible for initiating, monitoring and evaluating Sweden's suicide prevention programme, which was published in 1995.

In 1994 the Norwegian Government provided funding for the development and implementation of *The National Plan for Suicide Prevention* over a 5-year period from 1994 to 1998. The Norwegian Board of Health was responsible for implementing Norway's *National Plan for Suicide Prevention*.

In 1998, New Zealand's *Youth Suicide Prevention Strategy* was published, following collaboration between the Ministry of Youth Affairs, Ministry of Maori Development, and the Ministry of

Health. The Ministry of Youth Affairs has had the responsibility of implementing the Strategy since 2001.

In 2002, the Department of Health in England published the *National Suicide Prevention Strategy* for England. The Strategy follows the earlier publication of the *Our Healthier Nation Strategy*, which sets a target of a 20% reduction in suicide mortality by 2010. The National Institute will head the implementation of the *National Suicide Prevention Strategy* in England.

The United States Surgeon General made a ‘call to action’ on suicide prevention in 1999. The collaboration of researchers, clinicians, survivors and other stakeholders has led to the development of *The National Strategy for Suicide Prevention*. The Strategy’s Goals and Objectives for Action were published by the Department of Health and Human Services in 2001.

COMPONENTS OF NATIONAL SUICIDE PREVENTION STRATEGIES

National suicide prevention strategies differ in the target groups that are emphasised. For example, strategies in Norway and England focus strongly on the needs of high-risk individuals, whereas both the Australian and New Zealand Strategies have a broader public health focus. Australia’s first national strategy and New Zealand’s current strategy primarily address the needs of young people, while Finland, Norway, Sweden and Australia’s second *National Suicide Prevention Strategy* have a lifespan approach.

Despite differences in target populations, the themes covered in the various countries strategies have considerable similarity. Table 14, expanded from Taylor’s review (1997), shows themes of suicide prevention strategies for a variety of countries. Detailed information was not obtainable on the contents of Sweden’s strategy. Particular themes are evident across all countries that have implemented national suicide prevention strategies. All countries incorporate improved detection and treatment of mental illness as a core feature of their strategies, with a particular emphasis on depression. Reducing access to lethal means, improved reporting of suicide in the media, school-based programmes, treatment of drug and alcohol misuse, enhanced access to mental health services, and training for professionals are

components of all national suicide prevention strategies. However, countries differ in the relative weight given to each component. For example, Australia's *National Youth Suicide Prevention Strategy* placed a strong emphasis on early intervention programmes that aim to address risk factors for suicide, Finland's strategy identified substance misuse as a central feature of its activities, and the strategies in Norway and England give considerable attention to follow-up treatment for high-risk individuals. The majority of countries have also included post-vention, systematic assessment of attempted suicide, crisis intervention services, and work and unemployment activities. Finland is the only country to incorporate activities targeting physical illness.

Table 14. Comparison of National Suicide Prevention Strategies

Component	Finland	New Zealand	Norway	Australia*	England	United States
Detection and treatment of depression/other mental illness	+	+	+	+	+	+
Reduced access to lethal means	+	+	+	+	+	+
Media and public education	+	+	+	+	+	+
School-based programmes	+	+	+	+	+	+
Alcohol and drugs	+	+	+	+	+	+
Enhanced access to mental health services	+	+	+	+	+	+
Training	+	+	+	+	+	+
Post-vention	+	+	+	+	+	-
Physical illness	+	-	-	-	-	-
Assessment of attempted suicide	+	+	-	+	+	+
Crisis intervention	+	-	+	+	+	-
Work and Unemployment	+	+	+	-	+	-

* Refers to *National Youth Suicide Prevention Strategy*

IMPACT OF NATIONAL SUICIDE PREVENTION STRATEGIES ON SUICIDE RATES

Figures 65 through 68 shows the rates of suicide for all ages and adolescents (15-24 years) in countries with national suicide prevention strategy and the years in which the national suicide prevention strategy was implemented. The implementation of strategies was preceded by substantial increases in suicide rates among males and static rates among females in Finland, Australia, and Norway (adolescence and all ages). Sweden was witnessing declining rates prior to the introduction of their plan in males and females. In the years following the introduction of a strategy, reductions in suicide among males occurred in Finland and Australia, and increased or stabilised in Norway and Sweden. Rates in young females increased in Norway and Sweden following the implementation of their national strategies.

Figure 65. Suicide rates before and after the implementation of the National Youth Suicide Prevention Strategy in Australia.

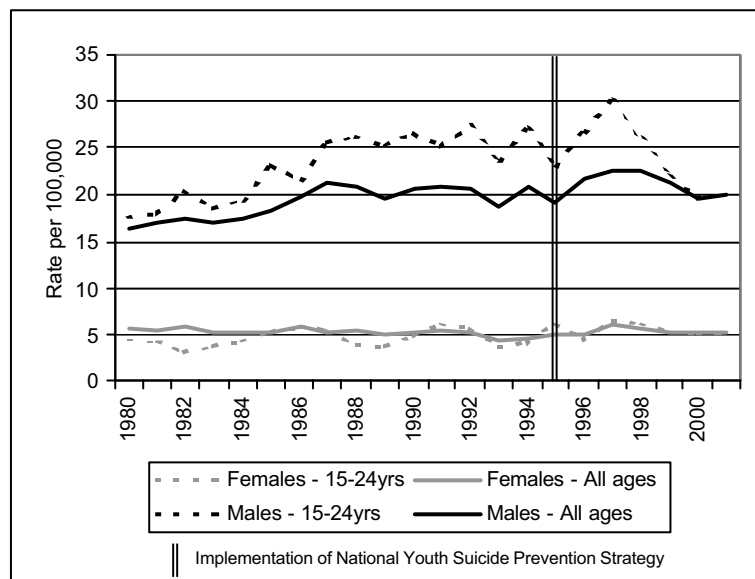


Figure 66. Suicide rates before and after the implementation of the National Suicide Prevention Strategy in Finland.

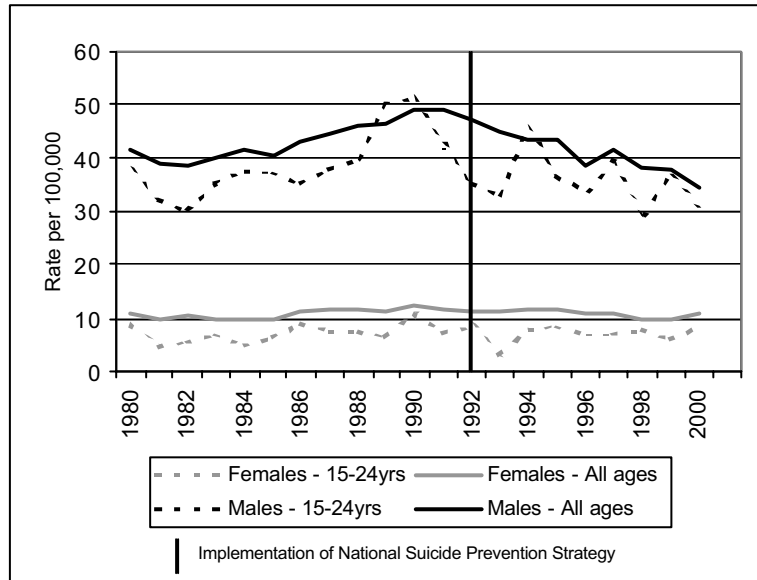


Figure 67. Suicide rates before and after the implementation of National Suicide Prevention Strategy in Sweden.

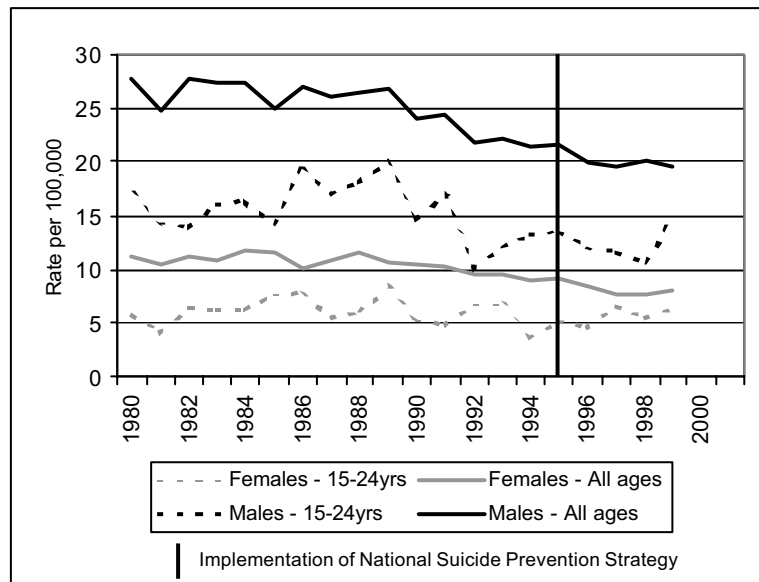
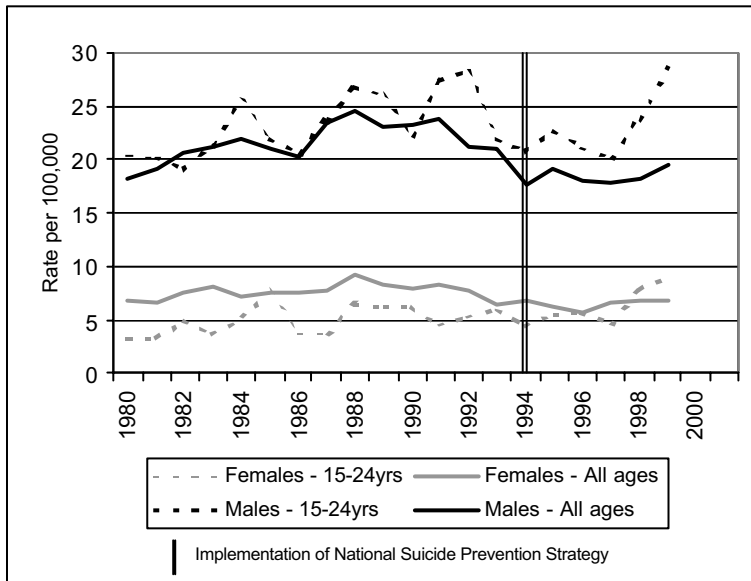


Figure 68. Suicide rates before and after the implementation of National Suicide Prevention Strategy in Norway.



To examine the impact of national suicide prevention plans on suicide mortality, the average rates and trends in the five years before and after the implementation of the strategy were compared². Analysis considered changes in rates and trends for all ages and for the 15-24 year age group. For example, in Australia, the average rate for the 1990 through 1994 was compared to the average rate for 1995-1999. Average rates are calculated based on the aggregated numbers and populations for the 5-year period. Trends were calculated via linear regression and indicate the direction and magnitude of the slope created by rates in the 5-year period. The direction (upward or downward) is indicated by the presence of a symbol + or – while the value of the slope indicates the magnitude or the trend. T-values indicated whether the change in average suicide rates or slopes are significant ($p < 0.05$) or non-significant (n.s.).

² A statistically significant reduction in the slope of post-implementation suicide mortality trends as compared to that related to pre-implementation suicide mortality trends was adopted as an indicator of a probable positive impact of national suicide prevention strategies. It should be noted, however, that the correlational nature of the present study and analysis does not allow us to draw reliable conclusions regarding the presence of a causal relationship between national suicide plans and suicide mortality trends. Furthermore, the adopted indicator of impact was based on the assumption that the suicide mortality trends observed across five years before the implementation were stationary (i.e. would have remained the same across time if the national suicide prevention strategies had not been introduced).

Adolescents

Table 15 presents a summary of analysis for the impact of national suicide prevention strategies on suicide rates among adolescents. In Norway, there was a significant change in suicide mortality trend among adolescent females following the introduction of the national strategy. Mortality trends changed from a negative slope (indicating declining rates) before the plan to a positive slope (suggesting increasing rates) after. Similar but non-significant changes in slope (from negative to positive) were revealed in Australian females, Norwegian males, and Swedish males and females. In Finland, male and female rates appeared to continue the upward trend that was evident in the years preceding the national strategy implementation. This analysis suggests that national suicide prevention strategies have had little or no impact on reducing suicide rates among the young.

All ages

Table 16 provides a summary of the all-ages analyses involving the implementation of national suicide prevention strategies. Analysis of trends before and after the adoption of strategies yields varying results for different countries. Among Australian females, the suicide mortality trend increased after the implementation of the national youth strategy. In Finland, changes from positive slopes preceding the implementation to negative slopes following were revealed. In Norway and Sweden (among males and females), downward trends were evident in the five years before the national suicide prevention strategies were introduced. Subsequently, downward slopes remained, but of smaller magnitude, suggesting a possible stabilising effect. Thus, based on these findings, with the possible exception of Finland, reductions in suicide mortality were not associated with the implementation of national strategies.

Table 15. Changes in average suicide rates and trends following the implementation of national suicide prevention strategies, 15-24 years.

Country (year implemented)	Average rate and (95% CI) for 5 years before	Average rate and (95% CI) for 5 years after	Trend [slope and (SE)] for 5 years before	Trend [slope and (SE)] for 5 years after	Difference between slopes [t-value and (p)]
Australia (1995)*					
Females	4.87 (2.82 – 6.94)	5.75 (4.08 – 7.43)	-0.37 (.31)	0.01 (.31)	-1.68 (ns)
Males	25.96 (24.61 – 27.30)	25.57 (22.76 – 28.38)	-0.07 (.54)	-0.31 (1.13)	0.13 (ns)
Finland (1992)					
Females	7.98 (6.42 – 9.53)	6.90 (4.97 – 8.83)	0.28 (.61)	0.21 (.78)	0.06 (ns)
Males	44.20 (38.77 – 49.63)	36.85 (32.34 – 41.35)	1.99 (1.90)	0.11 (1.84)	0.22 (ns)
Norway (1994)					
Females	5.62 (4.47 – 5.86)	5.60 (4.44 – 6.77)	-0.16 (.27)	0.58 (.34)	-3.31 (.02)
Males	25.12 (22.48 – 27.75)	21.70 (20.40 – 23.00)	-0.20 (1.07)	0.34 (.49)	-0.33 (ns)
Sweden (1995)					
Females	5.42 (4.24 – 6.59)	5.63 (4.90 – 6.37)	-0.18 (.46)	0.31 (.23)	-1.48 (ns)
Males	13.36 (11.02 – 15.71)	12.50 (11.05 – 13.95)	-0.79 (.84)	0.14 (.59)	-0.74 (ns)

*National Youth Suicide Prevention Strategy.

Table 16. Changes in average suicide rates and trends following the implementation of national suicide prevention strategies, all ages.

Country (year implemented)	Average rate and (95% CI) for 5 years before	Average rate and (95% CI) for 5 years after	Trend [slope and (SE)] for 5 years before	Trend [slope and (SE)] for 5 years after	Difference between slopes [t-value and (p)]
Australia (1995)*					
Females	5.04 (4.64 – 5.45)	5.35 (4.97 – 5.73)	-0.21 (.11)	0.07 (.15)	-7.09 (<.001)
Males	20.35 (19.48 – 21.22)	21.42 (20.10 – 22.75)	-0.16 (.34)	0.54 (.44)	-0.98 (ns)
Finland (1992)					
Females	11.80 (11.48 – 12.12)	11.36 (10.97 – 11.74)	0.09 (.12)	-0.07 (.15)	3.67 (.01)
Males	47.08 (45.31 – 48.85)	43.56 (40.77 – 46.35)	1.17 (.25)	-1.85 (.39)	11.46 (<.001)
Norway (1994)					
Females	7.74 (7.08 – 8.41)	6.42 (6.01 – 6.83)	-0.41 (.14)	-0.02 (.17)	-6.72 (<.001)
Males	22.44 (21.34 – 23.54)	18.12 (17.62 – 18.62)	-0.60 (.29)	-0.03 (.20)	-3.81 (.009)
Sweden (1995)					
Females	9.71 (9.16 – 10.27)	8.24 (7.67 – 8.81)	-0.38 (.05)	-0.32 (.14)	-2.44 (.05)
Males	22.79 (21.58 – 24.00)	20.16 (19.48 – 20.84)	-0.76 (.23)	-0.34 (.19)	-3.81 (.009)

*National Youth Suicide Prevention Strategy.

Limitations

There are several limitations to the current analysis. Firstly, the wide variation in suicide rates in a five-year period results in a large degree of error in any statistical analysis. These fluctuations mean that substantial decreases in suicide mortality can fail to reach statistical significance. Secondly, determining the most appropriate point of 'implementation' of a strategy is an imprecise task. Particular activities may be well underway before the introduction of a formal strategy has been developed that ties these activities together. On the other hand, it may take several years before all the elements of a strategy are put into effect. Thirdly, only a small number of countries have implemented suicide prevention strategies. With the exception of Sweden, the introduction of the each country's strategy followed historically unprecedented levels of suicide mortality that may have been unsustainable in the long term. Hence, a contraction in rates may be misconstrued as evidence for an effective intervention. Additional analysis over a longer period and with a greater number of countries will be needed in the future to draw more convincing conclusions. Such an analysis will probably not be feasible for a further five to ten years as strategies in countries such as the England, Germany, New Zealand, and the United States come into effect.

While enthusiasm for anti-suicide activities is increasing throughout the world, this analysis suggests that declines in suicide seen in Australia and abroad cannot be validly attributed to the introduction of national suicide prevention strategies. Even if national plans are partly responsible for recent reductions, the component of those plans that have contributed to the reduction cannot currently be identified. There is little evidence to support the efficacy of any particular approaches or strategies. The effectiveness of prevention activities in reducing suicide mortality and morbidity has been the subject of recent literature reviews and commentaries (De Leo, 2002ab; Gunnell & Frankel, 1994; Hawton et al., 1998). These documents indicate that scientifically sound evaluations of suicide prevention activities are scarce. Those evaluations that do exist generally lack sufficient sample size to detect meaningful effects and have inadequately defined outcome measures and control conditions.

Limiting access to means is an approach to suicide prevention that has the strongest evidence for efficacy in suicide prevention (Gunnell & Frankel, 1994) and is a core component of all national suicide prevention strategies. Potentially beneficial activities in this regard include detoxifying domestic (De Leo et al., 2002b; Kreitman, 1976) and car exhaust gases (Toseland, 1999; McClure, 2000), limiting the quantity of medications per pack (Hawton et al., 2001) and reducing prescriptions of lethal medications (Buckley et al., 1995; Ohberg et al., 1995), erecting barriers on bridges (Cantor & Hill, 1990), and limiting firearm ownership (Brent et al., 1991; Lambert & Silva, 1998). The rationale of restricting access to means is that by delaying death a person has an opportunity to reconsider their actions. However, the utility of these approaches have not been subjected to controlled studies and some have argued that restricted methods may be substituted by other more readily available methods (Amos et al., 2001; Lester, 1991; Rich et al., 1990). At any rate, restricting commonly used methods such as hanging is unrealistic beyond institutional settings such as prisons and hospitals (Cantor et al., 1996; Jordan et al., 1987).

Improved detection and treatment of depression has also been suggested as a potentially efficacious approach to suicide prevention, and is also a major component of all suicide prevention strategies. An educational programme for general practitioners coincided with a 60% reduction in suicide mortality on the island of Gotland in Sweden (Rutz et al., 1989, 1992). However, suicide mortality rates were found to rise in the years following the education programme, suggesting other factors may have contributed to the initial reduction. Furthermore, this investigation may have been biased by the small size of the populations involved, and consequently by the extremely limited number of cases that defined as positive the outcome of the programme (two cases). In addition, the experience apparently had results only with female subjects (General Practitioners were educated for recognition and treatment of depression, and since female patients consult more frequently than males with their doctor, this may have contributed to explain results).

Promising approaches to prevention of suicide include problem solving therapy (Hawton et al., 1998), emergency access cards (Morgan et al, 1993), dialectical behaviour therapy (Linehan, 1993), neuroleptic medication (Montgomery et al, 1983), and telephone active outreaching in the aged (De Leo et al, 1995; 2002c). However, these approaches need further examination through large-scale controlled trials to demonstrate their effectiveness. To date, most studies on the effectiveness of suicide prevention activities have used deliberate self-harm as an outcome measure. While deliberate self-harm is a significant risk factor for suicide, it is not analogous to completed suicide. Activities that have been shown to be effective in preventing self-harm must be evaluated for their potential to prevent suicide deaths before being widely adopted.