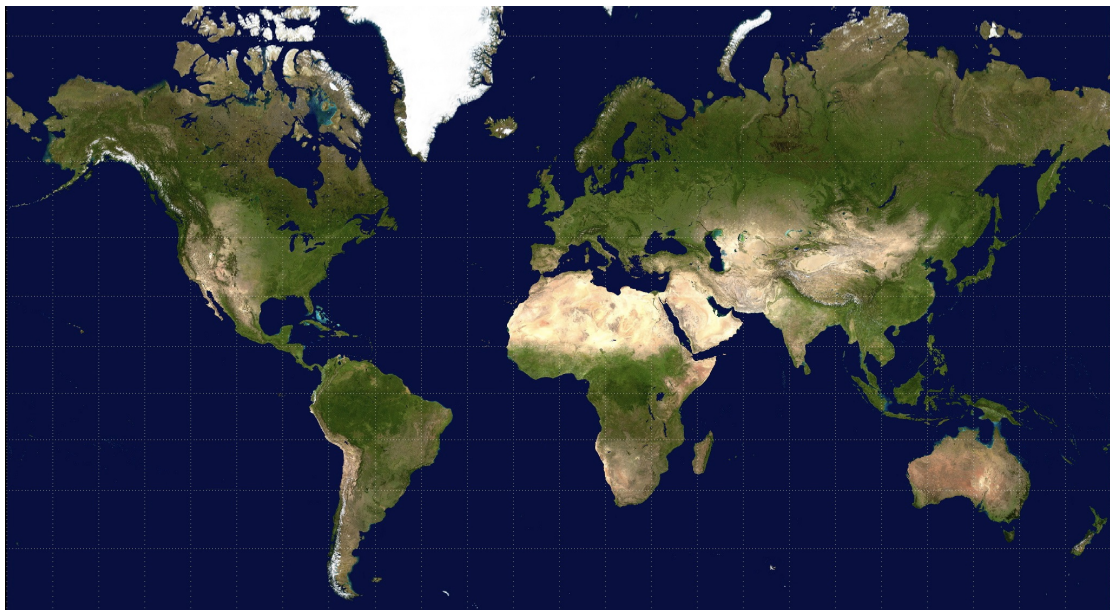


---

NATIONAL  
SUICIDE  
PREVENTION  
STRATEGIES  
A Comparison



The University of Queensland

# NATIONAL SUICIDE PREVENTION STRATEGIES

## A Comparison © 2009

Graham Martin OAM, MD, FRANZCP, DPM

Andrew Page, PHD

The University of Queensland

This final draft document is copyright.

It was prepared for the Department of Health and Aging, Canberra. It must not be quoted without written permission from DOHA.

Mercator projection of the Earth. Source image from NASA's Earth Observatory "Blue Marble" series (public domain).

---

## INDEX

Introduction	5
Critiques of Strategies	8
On Evidence	10
The Strategies	17
Finland, 1992	21
Norway, 1994	25
Australia, 1995	29
Sweden, 1997	35
New Zealand, 1998	39
France, 2000	45
United States, 2001	49
England and Wales, 2002	55
Scotland, 2002	59
Japan 2000	65
Canada	69
Summary	73
References	79
APPENDIX: National Suicide Rate Changes (Tables 1-12)	83
APPENDIX: Percentage annual change in suicide rates (Tables 13,14)	87



---

## NATIONAL SUICIDE PREVENTION STRATEGIES

### A Comparison

Have suicide prevention strategies from other countries had different outcomes compared to the Australian Suicide Prevention Strategy? Can national strategies from other countries inform further strategic planning for Australia? Can we demonstrate that national strategies have an impact on suicide rates?

### **Introduction**

Suicide is a behaviour, sometimes planned over time, but often impulsive. It can sometimes be predicted, but often is quite unpredictable. There are many life patterns that may lead to suicide. These may include the bright young person from a caring family who seems to be happy and successful but at a moment in time has some 'bruise' to their sense of self and decides and acts within minutes; the person whose life has always seemed to be in chaos, where the struggle against exclusion frequently gets to be too much, and the attempt to find relief and solace in medication was misjudged; the middle-aged woman with severe depression, not yet responding to treatment and support where a chronic sense of hopelessness and nihilism leads to the carefully made decision; the person with a psychotic illness who appears to be improving, is released from an inpatient unit and goes home to find their life is unchanged, and the spectre of long term illness has added more burden; the elderly man who has lost a spouse, his work and a sense of meaning, and feels that life is over.

Along the pathway to suicide, there are many risks that can increase the likelihood of suicide, or bring the likelihood forward. Risks may be biological (as in the gene which controls serotonin synthesis, and therefore depression); or risks may come from family or social interaction (for example from violence or abuse); or risks may be related to societal factors (such as chronic unemployment or social exclusion); or cultural (for instance at least in the first

---

and second generations, Greek migrants may have a very low risk compared to those who migrate from the Baltic States). One very common risk is the abuse of alcohol – we know that more than 80% of suicides have alcohol in their blood stream, while nearly 25% have levels of alcohol that normally cause drunkenness (Smith, Branas and Miller, 1999). On the other hand, there are protective factors that may support someone with even the most intrusive of suicidal thoughts, or mitigate some of the other risks. As an example we know that connectedness to other people is highly protective against suicide in the context of suicidal thinking.

Any national strategy purporting to be comprehensive has to manage this complexity. The full picture from biological risk and protection to societal risk and protection must be fully understood and integrated, and strategies put in place at all relevant levels, and for all appropriate contexts. As an example, for people with emerging, florid or improving illness, health staff interacting with them must have relevant training, requisite skill, and proper supports in the system to provide the most protective yet least restrictive context enabling improvement.

Increasing external protective factors and reducing internal or external risks may not be enough. The decision to suicide is an internal matter, and it is internal strengths, resilience, optimism and values that may work together to deny the decision to suicide. There is a need for us to better understand mental health or mental wellness (also known as social and emotional (and spiritual) wellbeing, and how this can be developed or enhanced to increase the chances of a decision to live – even in the face of great pain, emotional turmoil, or an apparently hopeless future.

So a national strategy needs to be multi faceted, multimodal, operate at all levels of government, and from bureaucracy through to society, community, family and the individual. Importantly there must be clarity about who takes responsibility for what, and there is a need for sound knowledge, clear communication and good decision making around what other portfolios, policy and strategies may

---

have some indirect impact on suicide rates in Australia. As an example of this, research exists to suggest that countries with a drug and alcohol policy (but no suicide prevention policy) may have just as great success in reducing suicide rates as those with suicide prevention policy (Burgess et al., 2004). The best solution here is of course to have both kinds of policies/strategies with a clear understanding of how they interact to avoid duplication of funding and activity.

Australia can rightly claim to have done all that is possible to bring together those who have spent a lifetime trying to understand suicide and its prevention with those from government who have the capacity to bring dollars to the table, as well as oversee the process and outputs from funded programs under a strategy. In addition, throughout the National Youth Suicide Prevention Strategy (1995-1999), the Living is for Everyone (LiFe) Strategy (2000-2005), and the current LiFe Strategy (2006-2010), there has been a progressive emphasis on evaluation, reporting and high level discussion to draw in new or important elements. If there are differences between the Australian Strategies and the strategies from other countries, then these may be matters of substance where elements have been included or excluded depending on evidence or expert opinion, or the differences may be more of emphasis. Of importance, relatively new countries like Australia, New Zealand, Canada and the US have all had to take into account that rates of suicide in the native or indigenous populations have all been higher in the past 10 years. This may not be true for European countries where populations are more homogeneous, and indigenous peoples historically more integrated, less identifiable.

The key measure of success is, of course, the reduction in the incidence of suicides in a given country's population (usually given as a figure of X per 100,000 per annum). There are problems with this measure that may make comparisons somewhat complex; countries differ, methods of suicide may vary between cultures, and coronial decisions about suicide may vary from country to country. So, although most countries have adopted the International Classification of Disease (ICD) categories of suicide to be consistent with the World Health Organisation, some countries may not have accepted this or find

---

such categorization problematic. Many countries do not report suicide on an annual basis. Many Islamic countries are reticent to report suicides. As another example of complexity, gun ownership in the US has led to a category of provoked suicide - that is the person (victim) may have provoked another (the perpetrator) to shoot them (sometimes called 'suicide by cop'); this is open to considerable difficulties in interpretation. Then there are questions about the categorization of so-called suicide bombers; are they primarily about suicide as a political act, or rather a form of homicide?

The word strategy may mean a single intervention; much of the available literature uses the term in this way. Conversely, in this paper we are using the term to mean a mix of individual strategies organised under a national policy and/or *national strategy*. We will examine some literature on Evidence; this is not meant to be a comprehensive review, but rather a brief up to date view of what eminent international suicidologists are recommending should be considered for National Strategies. We will then review current national strategies across the world; this will include some statistical analysis of pre-strategy rates compared to post-strategy rates for individual countries.

### **Critiques of Strategies**

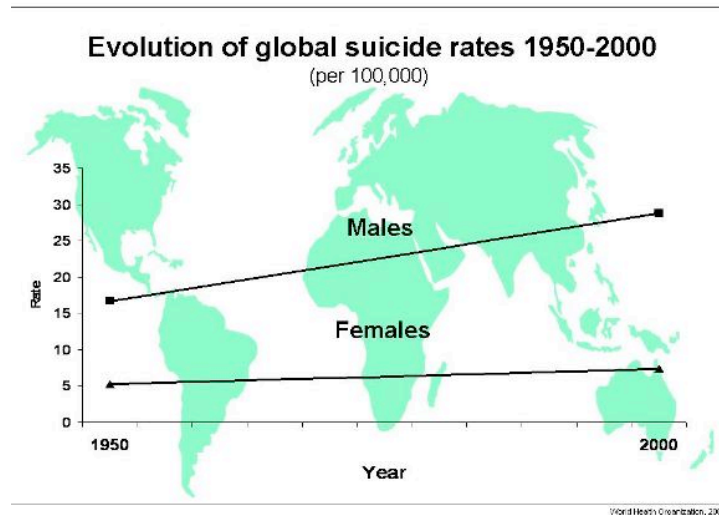
In any critique of national strategies, it must be remembered that in general, in both males and females, suicide is increasing worldwide. In 2002, 877,000 suicides were reported, (WHO, 2003). In the WHO media release for Suicide Prevention Day 2009, (WHO, 2009) they note:

“In the last 45 years suicide rates have increased by 60% worldwide. Suicide is among the three leading causes of death among those aged 15-44 years in some countries, and the second leading cause of death in the 10-24 years age group; these figures do not include suicide attempts - which are up to 20 times more frequent than completed suicide.”



Suicide worldwide is estimated to represent 1.8% of the total global burden of disease in 1998, and 2.4% in countries with market and former socialist economies in 2020.

Figure 1. Evolution of Global Suicide Rates 1950-2000



While the chart above was published in 2002, it does demonstrate the overall upward worldwide suicide trend graphically. However, what it does not show is that in 2009 the World Health Organisation stated that almost one million people die from suicide each year, suggesting a rise from their estimate of 2002 (877,000); so the trend of increasing worldwide suicides continues. WHO translates the current 'global' mortality rate of 16 per 100,000, to one death every 40 seconds. Australia is therefore not alone in the need to combat suicide as a cause of death.

When we come to analyse changing rates in any single country after a strategy begins, it must be stressed that any changes *are against a background of increasing worldwide rates*. Of course with any given country we cannot assume that an upward trend prior to a strategy was always going to continue.

Conversely, because a change in direction occurs at some time after a strategy, we cannot necessarily assume that it is the strategy (or some specific part of it) that has made the difference. Political landscapes change, socio-economic circumstances change, and cultural beliefs can change. It may be some third

---

factor which has produced both the thinking that led to strategy development and, at the same time, led to some socio-economic change which in turn reduced suicide rates. Of course what we were looking for in this analysis of several national strategies is some sort of pattern of association that might be independent of political or socio-economic change.

### **On Evidence**

In a seminal report by Gunnell and Frankel (1994) the authors noted: “No single intervention has been shown in a well conducted randomised controlled trial to reduce suicide”. Gunnell and Frankel (1994) drew broadly on the literature, noting that there were 2 main areas of endeavour, the first being specific strategies that had been subject to research. Unfortunately they had to note that the quality of the research at that time was not good, with only two randomised controlled trials. The other area addressed factors in suicide rates that might be potentially modifiable; here they had to note that little research had been completed. The paper was thorough, and as specific as possible in noting levels of evidence for various strategies, and the percentage of lives which might be saved if we were able to get the strategies right.

Overall, they concluded: “The greatest potential seems to arise from limiting the availability of methods. In particular it is likely that the introduction of the catalytic convertor will lead to reduced lethality of car exhausts and reductions in suicide using this method. General practitioner education programmes, the effectiveness of lithium and maintenance antidepressants, and limits on the quantity of medicines available over the counter or on prescription should all be evaluated. Particular high risk groups include people recently discharged from psychiatric hospitals and those with a history of parasuicide.” They continue: “This review of the available evidence offers little support for the aspiration that the posited (UK) targets can be achieved on the basis of current knowledge and current policy.”

---

In 2004, Guo & Harstall, in a commissioned report for the Health Evidence Network (HEN) for the WHO Regional Office for Europe, reported: “Due to the limited evidence and the heterogeneity of the interventions, it is not possible to determine if one single intervention was more effective than another. A broad array of suicide preventive interventions addressing different risk factors at various levels will be required.” When considering risks for suicide, they relied quite heavily on Beautrais’ (2000) report on risk commissioned by the Australian Government.

They reviewed over 30 prevention programs using a classic scientific review process, where they found ten systematic review papers including more than 110 studies, three of which were meta-analyses. For a descriptive framework Guo & Harstall used the spectrum of intervention categories from Mrazek & Haggerty (1994). They concluded that of the primary interventions, school-based suicide prevention programs had been shown to be effective in building personal skills, and reducing suicidal behaviours. Of the treatment programs, problem solving, and other cognitive behavioural therapy programs (eg dialectical behaviour therapy) were effective. Like many before them, they called for a better evaluation framework.

The most recent review by Mann et al. (2005) used a consensus approach from 23 international experts from 15 countries, each of whom reviewed all available search data on suicide completion, attempts and ideation. They based their findings on 10 systematic reviews and meta-analyses, 18 randomised controlled studies, 24 cohort studies, and 41 population based studies. In their conclusion they note: “National suicide prevention strategies have been proposed despite knowledge deficits about the effectiveness of some common key components. The relative impact of different strategies on national suicide rates is important for planning but difficult to estimate.”

They continue: “...the most promising interventions are physician education, means restriction, and gatekeeper education. Many universal or targeted educational interventions are multifaceted, and it is not known which components produce the desired outcome, or there may be longer-term trends in

---

suicide rates that are not captured by the studies.” They do acknowledge (with cautions) that screening, psychotherapy, ‘chain of care’ improvements, and media strategies may be of importance. In the body of the paper they also acknowledge that “suicide rates in 27 countries fell most markedly in countries that had the greatest increase in selective serotonin reuptake inhibitor prescriptions” though curiously this does not rate a mention in the conclusions.

Of note, the paper is somewhat dismissive of the US Air Force Suicide Prevention Program (Knox et al., 2003), categorising it as a gatekeeper program. They do, however, record in a table on ‘Postintervention Decrease in Total Suicide Rates’ (Table 3, p 2070, Mann et al., 2005) that the program achieved the largest percentage drop in the Annual Rate of Suicide, but do not comment further.

Knox takes them to task on this (Knox & Caine, 2006) noting that the USAFSPP is distinctive because of its adoption of an integrated framework consisting of 11 initiatives in a comprehensive approach. Mann then replies in the same journal: “...reports from this admirable program have not provided data on its effects on help-seeking behaviour, treatment delivery, or any measures that might give an indication as to which of its components provided benefit”.

So, from the scientific point of view, a program is not worth acknowledging unless we have solid evidence about which specific parts are contributing to the overall result – a reductionist argument long-lived in the scientific literature. The dilemma here is that we are still at a stage of suicide prevention where we have inadequate scientific information about many individual strategies that might be used in integrated programs, or many aspects of integrated suicide prevention programs. Do we do nothing? Should we only ever include individual strategies in a National Strategy where the scientific evidence has become sufficient? If we were to do this, it would fly in the face of common sense. In addition, we would only ever utilise those individual strategies that are essentially about risk reduction – because these are the only strategies for which scientific evidence has become sufficient.

---

One area that might suffer if we took such a reductionist view would be that of population-based 'Universal' strategies, simply because these are complex and costly to evaluate, and it may be difficult to remove confounding variables from the evaluations. Another broad area would be that of strategies or programs using a protective factor approach, because this again is an area where we have a long way to go before we have scientifically acceptable randomised controlled trials or meta-analyses of randomised controlled trials. Of note, suicidologists have become much more cognisant of the relative impact of risks at the population level, having taken into account measures of population attributable risk (PAR) (Krysinska & Martin, 2009), used previously in public health (Benichou, 2001). But as we note in this recent paper on PAR, we are still yet to be clear about the relative population level impacts of *protective* factors; although a 'preventive fraction' (PF) approach was used by Knox et al. (2003) in the USAFSPP study. There is emerging work that may provide some scientific sense of the relative contributions of risk versus protective factors in suicide at the population level (Li et al., currently under review), but there is still a long way to go if we are to satisfy the scientific community.

Even where we do seem to have reasonable evidence, any interpretation about causality may be complex and arguments will continue. As an example, we think we know that antidepressants (particularly Selective Serotonin Reuptake Inhibitors - SSRIs) not only improve depression, but also reduce the likelihood of suicide attempts (eg Simon et al., 2006). Increased SSRI prescribing appears to have reduced suicide rates in some countries (eg Isaacson, 2000). However, autopsy studies of people prescribed antidepressants and who later suicide, often show a complete absence of antidepressants in the system prior to death, and recent research has disputed the direct causal effect on suicide rates, noting that rates began to fall *prior to* the onset of increased use of antidepressants (Reseland et al., 2006). This again may suggest that a third factor is involved. Perhaps with increased awareness of suicide and its prevention in a country, more people seek help and more are therefore prescribed antidepressants. However, it is actually the increased knowledge that help is at hand, and the act

---

of help-seeking that leads to the reduction. Increased prescribing is associated, but may not be causal.

A similar example exists with psychotherapy. We think we know that Psychotherapy and psychosocial treatments (eg Cognitive Behavioural Therapy or Dialectical Behavioural Therapy) for mental disorders reduce suicidal behaviour (eg Brown et al., 2005). However, recent work suggests the impact of psychotherapy in a community or population could be simply the availability of psychotherapists (as a proxy for relevant healthcare services) in that community as much as the actual therapy (Kapusta et al., 2009). Perhaps people have heard that increased or improved services are available, and are more likely to stop and think, and then possibly seek help rather than going through with an impulsive act. Both of these cases suggest the importance of the third factor (help-seeking) as a possible cause of reduced suicide. At this point, these ideas are perhaps in the realm of conjecture, and deserve to be further evaluated. But if it were true it might make sense of why increased knowledge for the community and for professionals can make a difference, particularly when increased or improved services are available.

In the meantime, we must acknowledge that many National Strategies have been developed on the best available evidence added to the best available wisdoms of experts and practitioners in the field. We can, to a certain extent, compare the approaches, despite the fact they are more similar than different. Given that some National Strategies have been going for in excess of five years we can begin to look at the long-term impact of the strategies on rates of suicide. One way to do this is to consider the average rates before compared to the average rates after institution of a strategy. This may be complex to interpret given the fact that suicide in general is increasing around the world, and many countries had rapid increases in suicide rates up to the point where a strategy was put in place. Even where there have been reductions, they may not on average yet be to a level below the mean of rates prior to the introduction of a strategy. Do we take this to mean the strategy has failed, or can we take into account some hypothetical continuation of the rise based on an extension of the slope of the

---

rise before strategy introduction (and our background understanding of the steady rise in worldwide rates).

We can go further, and make a comparison of the relative slopes of suicide (ie is the rate generally going up or down) from before to after the beginning of a strategy, and make some estimate of the significance of any difference between these slopes. Again the interpretation of this may be complex because there are so many other broad political and socio-economic factors occurring in nations alongside any given strategy (as noted above). As we present each of the countries, their strategy, and their suicide rates, we must caution the reader that we have not at this time made any allowance for confounding population level factors. This is a piece of work that will need to be done to gain a more exact idea of the impact of each strategy per se.

It is likely that there will continue to be ongoing scientific criticisms of large-scale integrated programs unless there is good quality evaluation of each and every element of a program, and unless we can satisfy the scientific community that we understand which elements may be playing the most significant role. However, it may be that even if certain elements apparently make a major contribution alone, it is possible that they cannot operate in the absence of the other elements in an integrated program. There is an urgent need for high-level support for a review of evaluations of strategies as a whole taking into account any alternate possible explanations of change derived from socio-political change, and other confounders perhaps having nothing directly to do with the suicide prevention strategy.

Finally, the conclusion of this section of the report is that there is a need for governments to ensure that quality evaluations are completed for any and all strategies overall, as well as for the individual program elements. If we do not do this, we are unable to learn from our history, and may be at risk of repeating history – that is programs that do not work (or actually caused harm), or conversely of ignoring programs that might work because they were not sufficiently evaluated.

This is complex work, and we continue to learn about the best ways to evaluate programs. As an example, in Australia it is crucial that we investigate relevant programs in Aboriginal and Torres Strait communities. This endeavour must be shared, the community will have every right to own any results produced, and we may need to accept levels of evidence which at this time may not be acceptable to the Cochrane Collaboration. These issues are pertinent when we come to consider that what may be of most importance for suicide prevention in Indigenous Australians are improvements in emotional, spiritual, family and community wellness, and not improvements in access to services – so difficult to create and manage in truly remote communities (See Krysinska et al., 2009).



## The Strategies

The first question to be answered is “How do we choose which countries to compare in terms of a National Strategy?”

In 2002, the World Health Organisation reported on 38 European countries with national suicide prevention initiatives. They noted: “The comprehensiveness and coordination of national suicide prevention activities vary considerably between the countries. In Bulgaria, Denmark, Finland, France, Ireland, Norway, Sweden and the United Kingdom, national programmes with a variety of strategies have been established.

Table 1. Level of (European) national action on suicide prevention (adapted from WHO, 2002)

<b>Countries with comprehensive national suicide prevention programmes (2002).</b>	<b>Official documents</b>	<b>Government Approved</b>
Bulgaria	+	-
Denmark	+	+
Finland	+	-
France	+	-
Ireland	+	+
Norway	+	+
Sweden	+	+
United Kingdom	+	-
<b>Countries with national strategies and a draft national programme (2002).</b>		
Estonia	-	-
Lithuania	+	+
Slovenia	-	-
<b>Countries with plans for national action (2002).</b>		
Austria	-	-
Germany	+	-
Iceland	-	-
Poland	-	-

Programmes are here understood as concise action plans, combining various specific national strategies in order to achieve predefined goals and objectives, whereas national strategies are defined as different preventive approaches

---

established nationally in different settings. Estonia, Lithuania and Slovenia report having different national suicide prevention strategies and also having started to draft national programmes. The remaining countries with national initiatives report having strategies at the national level. In 3 out of 20 countries, suicide prevention activities on county or community level are official documents (Table 1) and 4 countries have started to prepare plans for national action.”

There is a problem for us here with terminology. WHO used the word Programme to describe comprehensive targeted suicide prevention with national government or parliamentary approval. Many National Strategies including our own Australian LiFe Strategy call what WHO would call a ‘programme’, a *Strategy*. WHO reserves the term strategy for a focused part of a program, or a standalone action which may be at the national level, but is not on its own a comprehensive program of work.

The WHO report (2002), continues “A variety of strategies to improve health care services are included in all national suicide prevention initiatives. These range from projects to increase the consciousness of health care providers about early detection of suicide risk and adequate treatment, to improved access to mental health services, to improvements in crisis intervention and telephone crisis lines.” Having made the point that a national programme should include not just health care service improvement, but also a range public health approaches, they note: “Public health suicide prevention activities, including responsible media policy and regulations controlling access to means of suicide, are carried out in less than one third of the countries” (ibid, page 10).

However, in general there are more similarities between national strategies than differences, although as noted elsewhere (Beautrais, 2006), key national issues have driven relevant unique aspects of strategies. In China and Sri Lanka, pesticides have been a major focus. In Finland and other Nordic countries, the focus has been on mental illness as well as reduction in alcohol consumption. In the US, the relatively easy access to firearms has meant that the US Suicide Prevention Strategy has targeted firearm education. More recently, deaths from

---

charcoal burning have influenced emerging strategies in a number of Asian countries (WHO, 2007).

We examined the national strategies of Finland (1992), Norway (1994), Australia (1995), Sweden (1997), New Zealand (1998), France (2000), United States (2001), England and Wales (2002), Scotland (2002) – all of whom are accepted as having comprehensive funded strategies ('programmes' in WHO terms). For comparison, we have also included Japan, which launched a national program in 2000, but where the primary responsibilities for suicide prevention were left to Prefectures. We also included Canada, where there has been a wide range of suicide prevention strategies driven by individual researchers and also by the Canadian Association for Suicide Prevention (2004), but where a national strategy has not formally been accepted by parliament.

In part, our choices were driven by practical issues. One issue was that strategies should have been in place for a sufficient length of time to enable a meaningful analysis of available data. In practice this meant countries where we could gain at least five years of publicly available data post-strategy (and for preference at least 2 years for the second five years of a strategy). We excluded Ireland from this current analysis because the 'Reach Out' Irish National Strategy was launched in 2005, even though a set of programs had been put in place following the 1998 report of the Irish Suicide Prevention Task Force.

We excluded other countries, for instance Germany (*Nationales Suizidpräventionsprogramm für Deutschland*, 2004), because at the time of writing we were unable to get a satisfactory English translation, and despite summaries elsewhere (WHO eBriefing, 2007).

For each country, in addition to the text description of the national strategy, we will present 4 Figures:

Overall male rates with 15-24 male rates by year; overall female rates with 15-24 female rates by year; male rates (overall and 15-24 yrs) prior to, and after (grey) the strategy; female rates (overall and 15-24 yrs) prior to, and after (grey) the strategy.

---

In addition, we provide an analysis of the slope for each of males overall, females overall, young males (aged 15-24 yrs) and for young females (aged 15-24)

- from 1950 to the start of any given strategy which provides part of the story of the figures
- for a period pre-strategy equivalent to the post-strategy period
- for the post-strategy period

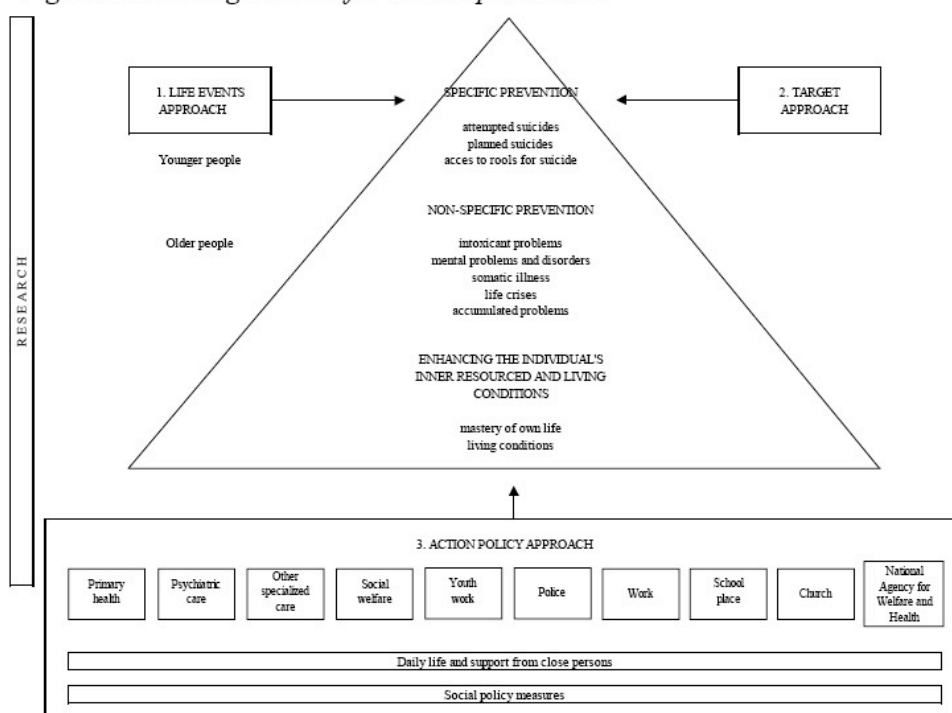
Data is drawn from the World Health Organisation mortality database (<http://www.who.int/healthinfo/morttables/en/index.html>). For pre-strategy rates of suicide we have utilised as much data as exists; we suggest that only taking a few years prior to the strategy gives an erroneous picture of events, and may be misleading. We are interested in long-term trends – if you like, the long term ‘slope’ that can be attached to rates over many years.

Based on practical experience of the NYSPS and subsequent strategies in Australia, the early years of a strategy may not immediately create active mature programs on the ground leading to measurable outcomes. We must be careful not to expect or demand too much, too early. If we do we are likely to jump to conclusions and be dismissive of strategies in general. We take the view that we should (where possible) consider the first 5 years from a point where programs seem to have been active, but place more weight on the continuation of any trends from 5 years on. For these reasons, we have not at this time reviewed the Irish National Strategy (Health Service Executive, 2005) or the proposed Greenland Strategy presented to their parliament in 2004 (Proposal, 2004)

## Finland, 1992

Finland began national suicide prevention work in 1986 with funding for a large study of completed suicides. This led logically to identification of target groups and issues, a national strategy formulated in 1991, and the creation in 1992 of a program of action (Stakes, 1993). The evaluation was completed in 1998 (Upanne, 1999). Overall the 'project' appears to have been an evolving or formative one; there were goals, but these evolved as each step of the program was tried. The authors reflect that many of the overarching goals reflected the targets emerging from available scientific literature on suicide prevention, but that the Finnish program has been criticized for being too general.

Figure 2. A strategic model for suicide prevention.



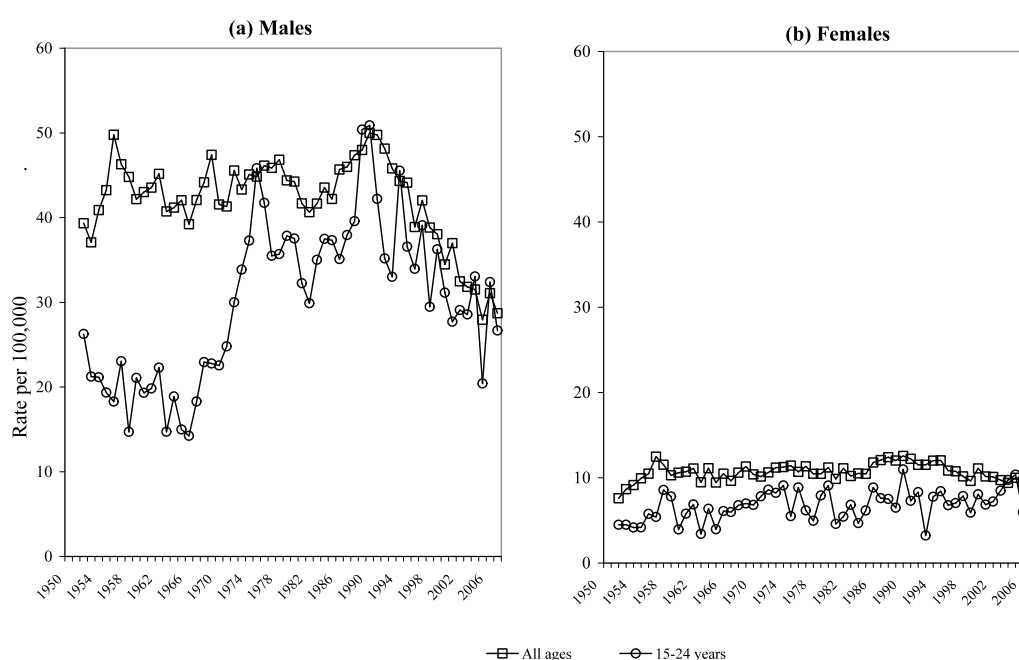
Much of the strategic model seems centred on education about suicide, the pathways of increasing risk toward suicide, the factors which influence suicide, what is possible in prevention, and the specific responsibilities of the individual professional or service. This is community development at a national level, influenced by a clear strategic model, but not necessarily by high level evidence (eg randomized controlled trials or meta-analyses of RCTs). A point that Upanne

et al (1999) make is that their style of national strategy may have come at low cost compared to funding of large scale programs developed to gain evidence.

There were 40 specific projects, implemented in a 'multi-focused, multi-sectoral and multi-professional way' with over 43% of services responding across Finland, and between 20-35% of each professional group taking part. These projects spawned a range of other local projects. What appears to have been important is networking of various services and professional groups around common themes – for instance crisis intervention, particularly with young people, around both specific and non-specific factors increasing suicide risk.

## Outcome

Figure 3: Suicide rates in Finland for all ages (age-adjusted) and youth.



As may be seen in Figure 3, the overall male rate for suicide has been high (by international comparison) since the mid 1950s, with some ups and downs. From 1992 there appears to be a sustained reduction. In 15-24 yr old males, there was a steep rise from the late 1960s, peaking in 1991. From 1992, despite ups and downs, there appears to be a steady lowering of rates back to the level of the 1970s. This is less easy to follow in the overall female rate, which again has been

generally high (by international comparison), peaking in 1992 and then steadily reducing back to levels of the 1950s. The picture is not so good in young women, where rates overall remain high

Figure 4: Suicide rates in Finland for all ages (age-adjusted) and youth, pre- and post-strategy intervention (1992).

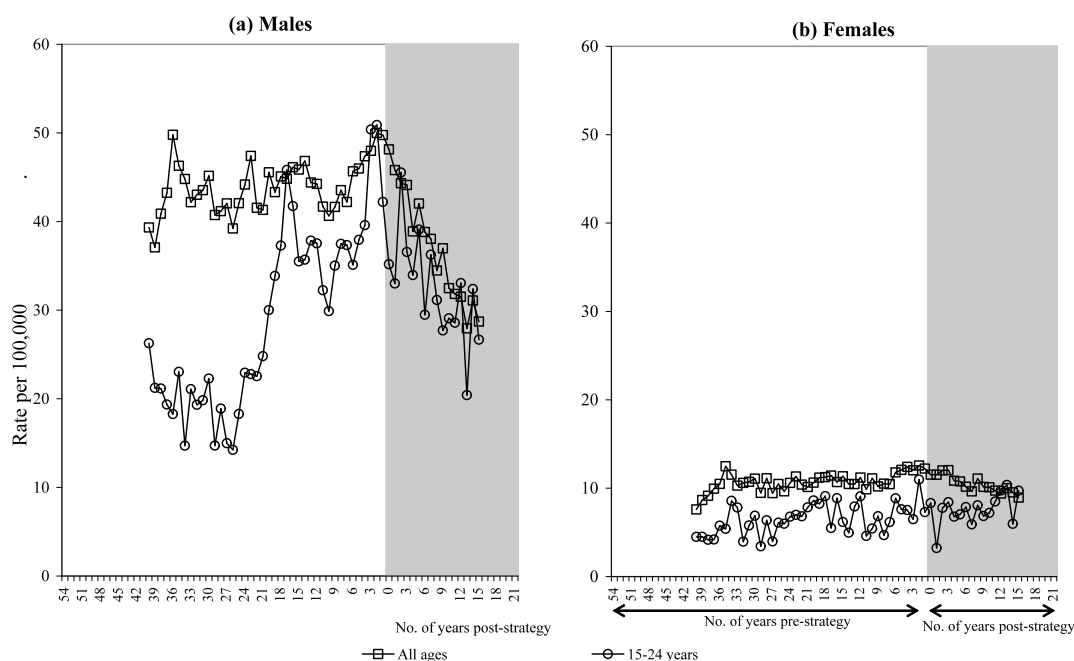


Figure 4 demonstrates the post strategy sustained changes in all but the young female rate.

From Table 2: Finland (see Appendix: Suicide Rate Changes), we can see that the first 5 years post-strategy the mean rate of suicide for males averaged 7.1% higher than the mean pre-strategy rate (43.9 per 100,000 based on over 40 years of rates). Subsequently the mean rate over the next 10 years dropped below the mean pre-strategy rate by 18.7%. The change of the slope from pre-strategy to post-strategy (see Appendix Tables 13 & 14: Percentage annual average change) assists us to see the magnitude of change. Overall from 1950, the slope of change is a steady 1.1% change per annum. In the immediate years before the strategy the slope of change was still increasing at 0.8% per annum; after the strategy the slope shows a reduction of 3.4% per annum ( $p < 0.001$ ). Remember that the 'immediate years' means a time period equal to the post-strategy years.

---

In 15-24 year old males, the mean rate of suicide pre-strategy (again based on over 40 years of climbing rates) was 27.9 per 100,000. This rate is exceeded by an averaged 32.1% during the first 5 years of the strategy, and remains higher than the pre-strategy mean by 8.8% even after 17 years. Again, it is the slope comparison that helps to make sense of the pattern. Pre-strategy, the rate overall was climbing dramatically at 3.1% per annum. In the immediate years before the strategy, this had slowed somewhat to 1.5% per annum. After the strategy, there is a sustained rate reduction of 2.4% per annum ( $p < 0.001$ ), which is significant whether we compare the overall years pre-strategy, or just the immediate years.

In females overall the pre-strategy rate was an average 11.1 per 100,000. This was exceeded by an averaged 11.4% during the first 5 years of the strategy, which subsequently fell to an averaged 4.6%. Again, it is the slope that tells the real story. Pre-strategy, there was an upward slope climbing at a rate of 1.0% per annum for both the overall period, but also for the immediate pre-strategy years. Post-strategy, this changed to a downward slope of 1.7% per annum ( $p < 0.001$ ).

In young females, the pre-strategy rate was an average 6.3 per 100,000. The average rate was 10% higher during the first 5 years of the strategy, and has continued to rise over the next 10 years, now being an average 26.5% above pre-strategy rates. Analysis of the slope suggests an annual rise in the suicide rate pre-strategy of 1.6% per annum for the overall time, but this drops to 1.2% per annum for the immediate years prior to the strategy. Subsequently suicide rates in young females have risen at an average 2.1% per annum post-strategy.

Overall, this analysis (taking into account caveats noted before regarding confounding factors) suggests significant and sustained change in Finnish suicide rates post-strategy, notable in overall male and female rates, and young male rates; but rates remain high. The rate of suicide in young Finnish women seems to be an ongoing challenge.



---

## Norway, 1994

The Norwegian Plan for Suicide Prevention began in 1994, and was completed at the end of 1999 after five years of activity. Evaluation was continuous (formative), and changes were made to the plan as it evolved (Sørås, 2000; Mehlum & Reinholdt, 2001). The overarching aim of the National Plan was that *health services* should contribute to reducing the frequency of suicides in Norway. Under this were five objectives:

- To establish a national and three regional resource communities
- To stimulate more, and (more) systematic research
- To initiate systematic knowledge distribution
- To operate information activities.
- Coordinated treatment programs at Hospitals

The National Suicide Research and Prevention Unit at the University of Oslo was established first, followed by regional centres in Bergen, Trondheim and Tromsø. Even though the four centres developed in slightly different ways, they were found to supplement each other in form and content. Activity levels at the centres have been high and well targeted. In the period prior to the National Plan (1990-93) there were approximately 10 research projects with 20 researchers; from 1997 to 2000 there were 33 research projects with 47 researchers. A wide range of programs evolved, and considerable publication occurred.

The third strategy developed widely disseminated teaching aids and programs professional groups (medical, psychology, nursing, social work and teaching) in contact with suicidal people. Considerable negotiation had to be done with individual Universities and Colleges to focus coursework. 'Living Works' was translated for use with professionals, and achieved good understanding of the issues. There is now a graduate course in suicide and its prevention.

The Suicide Research and Prevention Unit at the University of Oslo managed the national communication program including Internet presentations with a description of the National Plan and the activities under its direction, and information about courses, conferences and research activities. A crisis

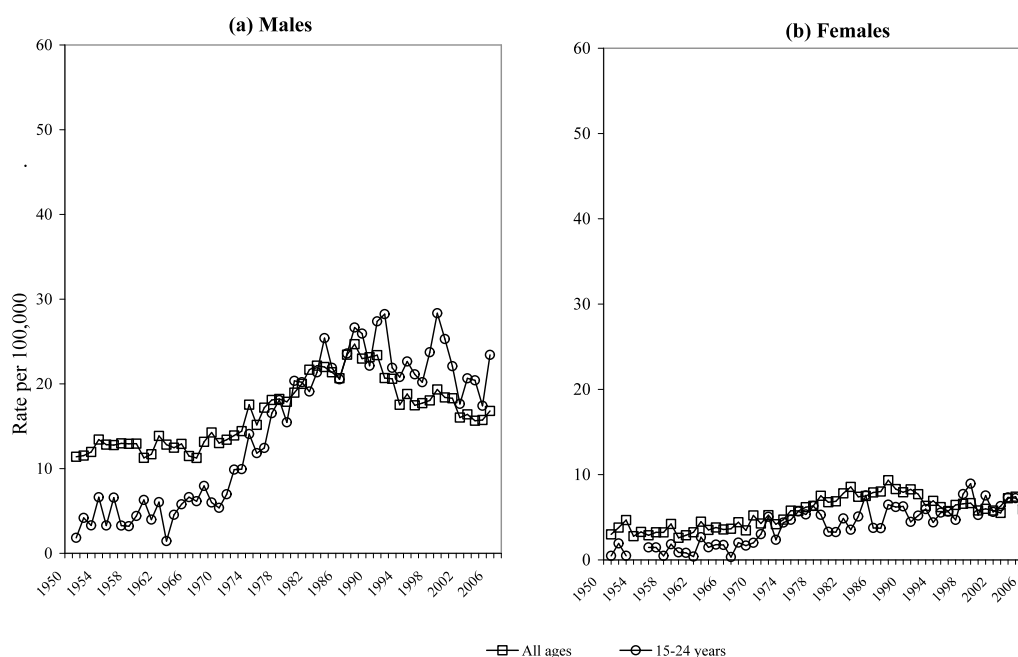
intervention site was created. Brochures were made available for the public; there was involvement of media, and the creation of a journal.

The Norwegian plan spent a substantial portion of its budget on establishing coordinated treatment measures at hospitals. These projects (based on the Bærum model which had operated from 1979) were generally evaluated as having been positively received and appear to have had favorable ripple effects in local communities. As the plan evolved, other groups became the focus of work - suicide survivors, gay and lesbian people, elderly men, young people, and workplace-related problems.

The Norwegian plan for suicide prevention 1994-99 did not initially prioritise suicide prevention through restrictions on access to means of suicide (eg guns, medications and bridges), though this has been considered more recently.

## Outcome

Figure 5: Suicide rates in Norway for all ages (age-adjusted) and youth.



From Figure 5, the overall male rate seems to have peaked in Norway in 1990, and reduced fairly steadily since. The 15-24 yr old male rate peaked in 2000, although smaller numbers make the rates look more erratic. The overall female

rate peaked in about 1989, and the 15-24 yr old female rate seems to have peaked in 2000.

Figure 6: Suicide rates in Norway for all ages (age-adjusted) and youth, pre- and post-strategy intervention (1994).



Figure 6 allows us to review suicide rate changes against the Norwegian Strategy, which began in 1994.

From Table 3: Norway (see Appendix: Suicide Rate Changes), we note the average overall male suicide rate over 40 years pre-strategy was 18.5 per 100,000, having climbed steadily for 30 years. Post-strategy rates remained higher by an average 11.5% over the first 5 years, but have reduced to only 4.3% higher than average pre-strategy rates since then. The young male Norwegian rate also climbed rather spectacularly over the 30 years prior to the strategy with an overall average of 13.2 per 100,000. In the 5 years after the strategy, the rate remained high at an average 64.3% higher than pre-strategy, and in an erratic manner has sustained this average rate at 65.8% above the average pre-strategy rate.

For females of all ages, the pre-strategy average rate was 6.1 per 100,000, having climbed in a similar (if less spectacular) way to the male rate. In the first 5 years

---

post-strategy, the high rates continued at 18.1% above pre-strategy, though this has lessened slightly to 15.5% post-strategy average over the pre-strategy average. Within this, the pre-strategy average rate for 15-24 year old females was 3.3 per 100,000 and remained an average 67.2 % higher in the first 5 years post-strategy, and then rose to double the pre-strategy average rate since. None of this seems very promising, until we look at the comparative slopes of rates from pre-strategy to post-strategy.

For all males pre-strategy, the slope (see Appendix Tables 13 & 14: Percentage annual average change) shows an average annual increase of 2.3%, which slows in the immediate pre-strategy period to 1.1% per annum. Post-strategy there is a decreasing slope of 1.3% per annum average which is a significant drop from the overall pre-strategy rise ( $p < 0.001$ ). Within this, the youth male rate was climbing at 5.8% per annum, slowing in the pre-strategy years to an annual 2.0% and then reversing to a decline post-strategy of an average 0.7% per annum ( $p < 0.001$ ). The all ages female rate increased at an annual 3.0% overall pre-strategy, which slowed in the pre-strategy years to 0.6% per annum. It is now static at no increase for the years post-strategy, which reaches significance if post-strategy rates are compared with the overall pre-strategy average annual increase ( $p < 0.02$ ). Within this the young female rate was climbing at an overall 5.0% p.a. average, and this slowed to 3.3% p.a. in the years pre-strategy, and has slowed further post-strategy to 2.4% average per annum (NS).

There does appear to have been an impact from the Norwegian strategy, with the overall male, young male and overall female rates significantly reversed. Of note, and in some ways similar to Finland, young women (aged 15-24yrs) do not appear to have been overly affected by the strategy, compared with other groups.

---

## Australia, 1995

The National Youth Suicide Prevention Strategy (NYSPS 1995-1999) was funded by the Australian Government to provide a comprehensive and coordinated approach to youth suicide and its prevention in Australia. In the face of rising rates of suicide in young people, there were 4 major goals:

- To prevent premature death from suicide among young people;
- To reduce rates of injury and self-harm;
- To reduce the incidence and prevalence of suicidal ideation and behaviour; and
- To enhance resilience, resourcefulness, respect and interconnectedness for young people, their families and communities.

To attain these Goals, 5 priorities were recognised:

- To provide carefully planned broad population-based interventions
- In partnership with Aboriginal peoples and Torres Strait Islanders, reduce and respond to suicide and self-harm and its impact on their communities
- To enhance recognition and response to suicide and self-harm and related issues in community services
- To improve suicide prevention and support services for individuals at special risk for suicide or suicidal behaviours
- To improve practice and enhance service systems

The Youth Suicide Prevention Advisory Group (July 1995 to June 1998) and the National Advisory Council on Youth Suicide Prevention (from July 1998) oversaw allocation of A\$31 million to over 80 different projects and activities including 42 National Demonstration Projects. Activity areas included *Data*, *Consultation* (several national stocktakes of youth programs, work on the National Coronial Information System), *Research* (3 major reviews of international research, national evaluation), *Education and Training* (5 national reports, 4 general practitioner training programs), *Conferences and Workshops* (including a contribution to the International Association for Suicide Prevention

---

(IASP) Congress, Adelaide, 1997, evaluation workshops, and the Suicide Prevention Australia Conference 1999), *Internet based programs* (including Auseinet and ReachOut), *Work on Access to Means*, 6 demonstration *Parenting programs*, *A Media Strategy*, evaluation of *Schools programs*, *Telephone Helplines*, *Hospital and Health Service programs*, demonstration projects for *Young Attempters*, *Mentally Ill young people*, and *the marginalised*.

The NYSPS drew broadly on the bio-psycho-social model, and was informed by principles of the Public Health Approach to enhancing population health and wellbeing, with a major emphasis on building the capacity of existing services and programs to provide more effective responses to the needs of young people rather than creating new services and programs. System level activities aimed to facilitate the adoption of evidence-based practice.

From 2000, the *Living is for Everybody* (LiFE) National Suicide Prevention Strategy adopted a whole of life span approach to suicide prevention, and was also based more explicitly on the work of Mrazek and Haggerty, and adaptations of their holistic model for prevention in mental health (1994). The LiFe Strategy has now been redeveloped (LiFe, 2007). The funding commitment of the Australian Government to Suicide Prevention will continue to 2012.

The LiFe Framework includes 6 Action Areas, and within each are a series of explicit and expected Outcomes. The main areas are:

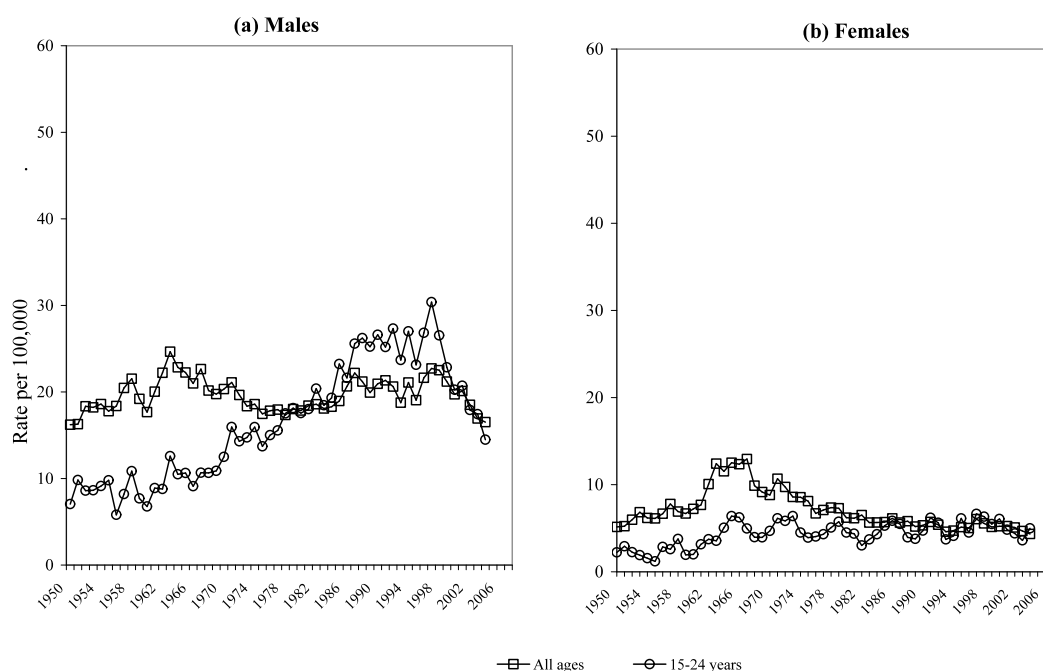
- Improving the evidence base and understanding of suicide prevention,
- Building individual resilience and the capacity for self-help,
- Improving community strength, resilience and capacity in suicide prevention,
- Taking a coordinated approach to suicide prevention,
- Providing targeted suicide prevention activities
- Implementing standards and quality in suicide prevention

In broad terms, the strategy is predicated on suicide prevention activities doing no harm; a strong theme of community ownership and responsibility for action to prevent suicide; and client-centred service delivery. In the past, there has been

a problem for Australian Governments, in that they had little direct control over health issues 'on the ground', because Australia is a federation of independent states, and state governments have had responsibility for pathways to direct care. Recently many issues have been discussed and practical resolution is being sought through ongoing activities of the Council of Australian Governments (COAG). "As an important first step in delivering a new era of federal-state cooperation, a meeting of Treasurers and Health Ministers in Brisbane today.... reflected all governments' determination to work cooperatively to meet the economic and other challenges Australia faces, and to end the buck-passing and blame shifting that has characterised past state-federal relations (Communiqué, 14.01.08) ([http://www.coag.gov.au/ministerial\\_councils/docs/health\\_ministers\\_communique\\_14\\_0108.pdf](http://www.coag.gov.au/ministerial_councils/docs/health_ministers_communique_14_0108.pdf)).

## Outcome

Figure 7: Suicide rates in Australia for all ages (age-adjusted) and youth.



In Australia, the overall male rate peaked in the 1960s, then declined somewhat until the late 1980s when rates were high through to the 1990s, since when they have declined to their lowest since the 1950s. Within this, the youth male rate

---

climbed from the late 1950s to a peak in 1997, since when rates have declined steadily to rates seen in the 1970s. Female rates overall peaked in the late 1960s, and have declined steadily overall. Within this, young female rates increased steadily to peak in the late 1990s, and have declined since then.

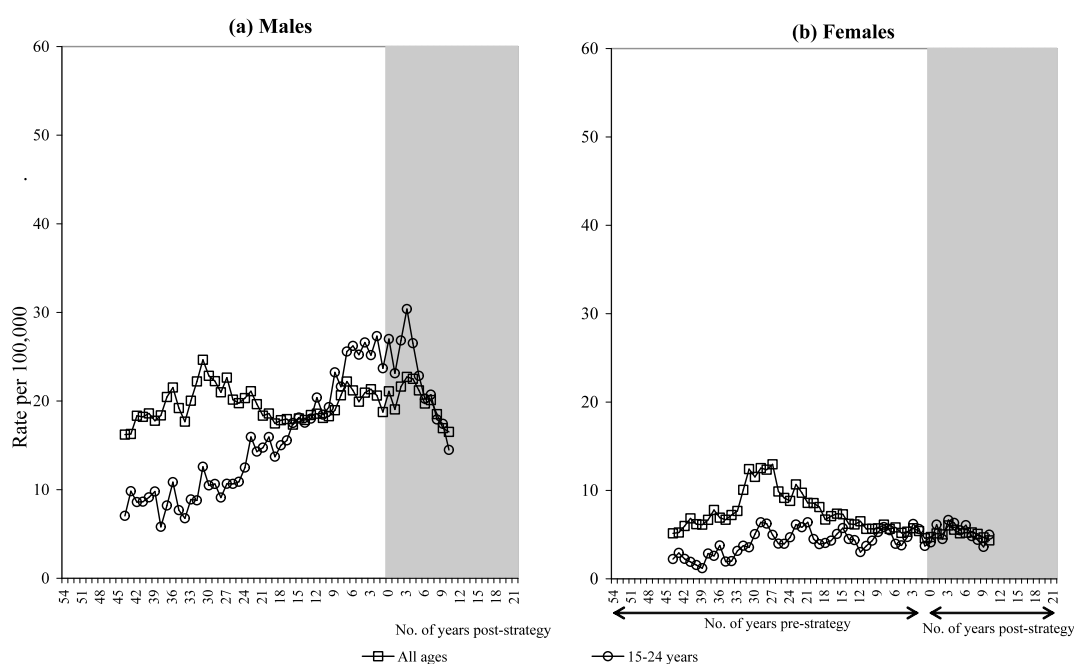
From Table 4: Australia (see Appendix: Suicide Rate Changes), we can see that the overall average suicide rate pre-strategy for males was 21.5 per 100,000, and that the average rate for the first 5 years post-strategy stayed 12.9% above this average, and has subsequently declined to 2.5% below the pre-strategy average. Within this the youth male rate pre-strategy was 16.5 per 100,000, and because of the steep pre-strategy rise, even after the start of the strategy stayed at an average 62.5% above the pre-strategy rate, although this has dropped to an average 14.7% above pre-strategy rates in the last few years.

Overall the female rate pre-strategy was an average 8 per 100,000, and the overall decline pre-strategy continued post-strategy with an average 26.1% lower rate in the first 5 years, and 31.9% average lower rate through the next few years. Within this the average youth female rate (4.4 per 100,000 pre-strategy) rose to be 26.3% higher on average for the 5 years after the strategy began, but then declined to be only 11.4% above the pre-strategy average rate for the last few years.

As with other countries, it is the difference in slopes from pre strategy to post-strategy (see Appendix Tables 13 & 14: Percentage annual average change) which helps to clarify the possible impact of the Australian strategy. The slope for males overall shows a steady climb of 0.3% per annum pre-strategy, and this had accelerated to 1% per annum on average in the period prior to strategy implementation. This changed to a 2.3% decline post-strategy ( $p < 0.02$ ). Within this male rate, the youth male rate shows a climb for all the years pre-strategy of an average 3.3% per annum for the period prior to the beginning of the strategy. Post-strategy there has been a sharp reversal to a decline of 5.4% per annum since the start of the strategy that is highly significant when compared with ( $p < 0.001$ ).



Figure 8: Suicide rates in Australia for all ages (age-adjusted) and youth, pre- and post-strategy intervention.



For females overall, the slope for all of the years pre-strategy was an average 1.0% per annum decline overall since 1950. For the for the 12 years pre-strategy, this was very similar at a 1.1% average decline per annum, and this has stabilised post- strategy at 1.0% per annum (NS). Within this, the youth female slope pre-strategy was an overall increase of an average 1.2% per annum. In the pre-strategy years, this had slowed to a 0.7% increase per annum. Subsequent to the strategy beginning, and mirroring the youth male rate, the female youth rate shows a sharp reversal to a decline of 1.7% per annum average although because of somewhat small numbers this does not reach significance (NS).

It is worthy of note that there was a peak of suicide rates for all groups in 1997, 2 years after the Australian strategy formally began. This points to a feature of strategies, which is that although there may have been a build-up of discussion in the media, and publicly, prior to a strategy beginning, nevertheless there may be some lag time before a strategy begins to have impact.



---

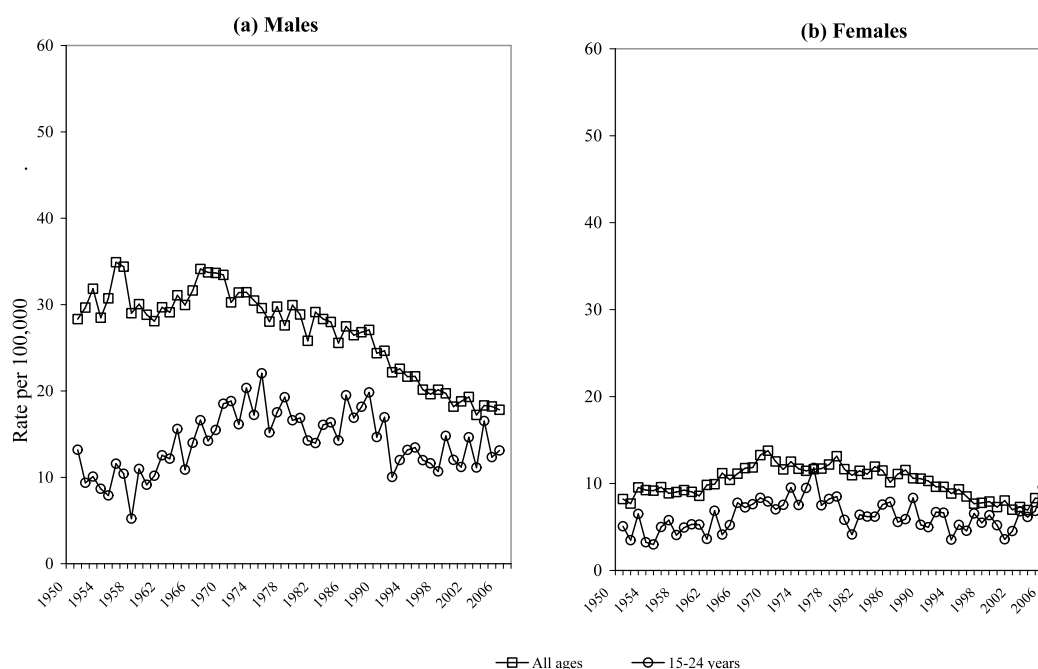
## Sweden, 1997

Sweden established a National Council for Suicide Prevention in 1993 and this led to creation of the Swedish National Centre for Suicide Research and Prevention of Mental Ill- Health in 1994. The centre, in collaboration with the Swedish National Board of Health and Welfare and the National Institute of Public Health contributed to development of a national program for suicide prevention, first published in 1995, but beginning in 1997. The program was implemented across the whole country, and consists of individual and population strategies. There is a national network with six regional networks associated with the health care regions, and each network includes health care and health promotion practitioners as well as social service departments, schools, churches and voluntary organisations. Goals and aims of the networks (defined as 'knowledge organisations') are guided by a national document 'Support in Suicide Crisis: National Programme for development of suicide prevention', but local needs are also a focus. The networks were also conceptualized as providing an opportunity for research activity, but the National Council for Suicide Prevention takes overall responsibility for initiating, monitoring and evaluating Sweden's suicide prevention program. Initially there appear to have been 2 major underpinnings. First the need to improve crisis services with active and supportive networks; second the need to change the belief system about suicide being a human right toward an understanding that it may be related to treatable mental health problems such as depression. More recently in June 2008, the Swedish government agreed to a national program with 9 strategies which include better life opportunities for groups at need, reduced alcohol consumption in high risk groups, reduced access to means, effective management of psychological disturbances, support for services in preventing suicides, dissemination of knowledge, improved competence of care staff, psychological autopsy of cases within the system and within 28 days after discharge, and support for voluntary organisations. Three recently supported programs will be improving knowledge to teachers and schools, health care personnel, and improved mental health first aid for the

general public.

## Outcome

Figure 9: Suicide rates in Sweden for all ages (age-adjusted) and youth.



As can be seen, Sweden's overall male rate had 2 peaks in the late 1950s and again in the early 1970s, but since then has been steadily declining. The overall female rate shows a similar pattern with an overall decline since the 1970s. The male youth rate shows an increase toward the late 1970s, followed by a somewhat erratic decline until 1994, and then a slow but erratic increase. The female youth rate shows a general increase to a peak in the late 1970s, followed by a decline to about 2003, since when there has been a rise.

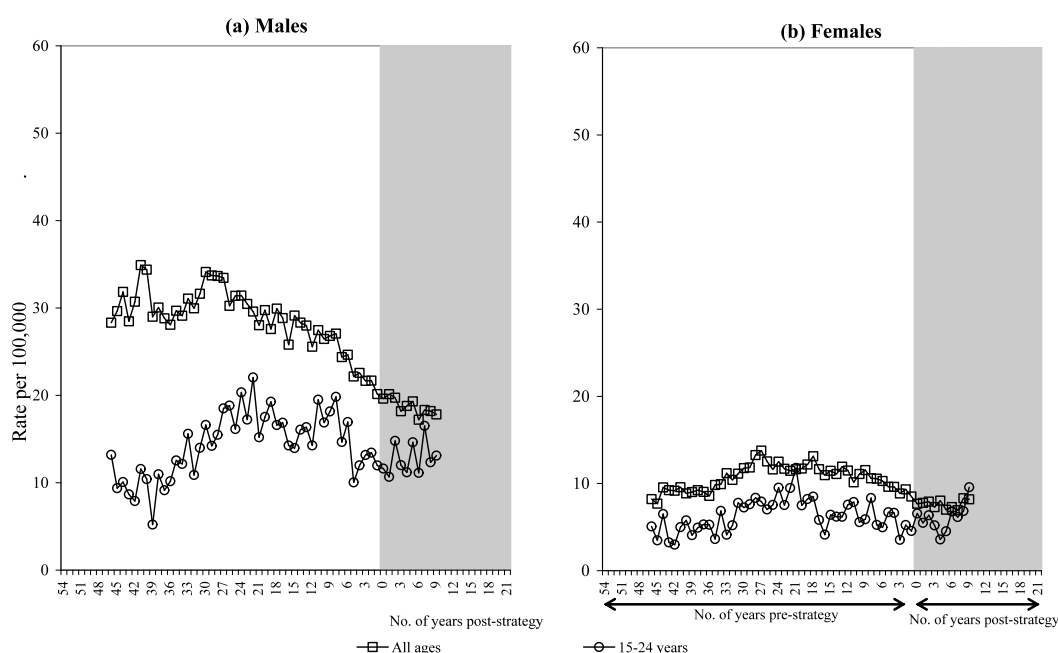
From Table 5: Sweden (see Appendix: Suicide Rate Changes), pre-strategy, the overall rate for males was high at 30.7 per 100,000, and for the first 5 years of the strategy, following the previous general decline, this was lowered to an average level 30.1% lower, and within the next few years, 35% lower. Within this the suicide rate for young males had shown an increase until the beginnings of a decline from the mid 1970s. The average rate pre-strategy from this mixed picture was an overall 14.3 per 100,000, and this average dropped to 15.7% less on average across the first 5 years of the strategy, and subsequently has shown a

slight increase during the next few years to be only 5.3% on average below the pre-strategy rate.

The rate for females pre-strategy was an average 11.7 per 100,000, and had been slowly declining from the 1970s. This decline continued such that the rate was an average 27% lower for the first 5 years post-strategy, and 28.9% for the years since then. For female youth the overall average rate pre-strategy was 6.2 per 100,000, although rising to the late 1970s, and then declining. Post-strategy, the rate was an average 12.8% lower than the average pre-strategy rate over the first 5 years, but has shown an upturn in the last few years to be an average 9% higher than the average pre-strategy rate.

Since the implementation of the Swedish strategy (see Appendix Tables 13 & 14: Percentage annual average change), the overall male pre-strategy decline of 0.4% per annum average, increased to 3.2% per annum in the immediate pre-strategy years, and this has now slowed to 1.3% per annum (NS). The overall pre-strategy rate for male youth was increasing at 1.1% per annum.

Figure 10: Suicide rates in Sweden for all ages (age-adjusted) and youth, pre- and post-strategy intervention.



---

The rate shows a reversal to a decline of 5.1% per annum in the years before the strategy, but this has now become an annual average increase of 1.6% (NS). The changes do not reach significance, but changes in this direction are a puzzle.

The overall female rate pre-strategy overall shows a slope with a 0.4% per annum increase. In the few years before the strategy implementation, this showed a reversal to a decline of 3.1% per annum ( $p < 0.02$ ), and since the strategy, has become a slight rise of 0.1% per annum. The female youth rate was showing a gradual increase of 0.6% over the total years before the strategy. In the few years before the strategy this became an average decline of 3.3% per annum. Subsequent to the strategy, there has been a marked reversal to an annual increase at a rate of 4.3% per annum ( $p = 0.062$ ), a trend that does not quite reach significance.

Overall, the results are not all that consistent between the groups, and somewhat hard to explain. Overall, we have to deduce that the Swedish strategy does not appear to be having the same impact as the Finnish and Norwegian strategies.

---

## **New Zealand, 1998**

The New Zealand Youth Suicide Prevention Strategy, published in March 1998, was initiated in response to the high number of suicides among 15 to 24 year olds, and was designed to provide leadership at a national level around key interventions. The Strategy had two parts: 'In Our Hands' a general population strategy, and 'Kia Piki Te Ora o te Taitamariki' a strategy specifically targeting Māori needs and approaches. Underpinning the Strategy were two government funded literature reviews (Beautrais, 1998; Lawson - Te Aho, 1998).

A Māori Reference Group was established to oversee and monitor the development of the separate Māori strategy and a Māori health researcher was engaged to research and design the content of Kia Piki Te Ora O Te Taitamariki, and documents were used in draft form for a series of Māori focus group hui in Wanganui, Christchurch, Auckland, Whakatāne and Whangārei.

In Our Hands lists 25 policy recommendations to address issues of youth suicide, within 5 basic themes:

- Provision of family support and early intervention programmes to families in which children are perceived to be at high risk for a range of adverse outcomes, including suicidal behaviour, in adolescence and young adulthood.
- Improvements in mental health education and awareness, treatment and management.
- Restriction of access to means of suicide.
- Macrosocial changes including increased social equity and the management of publicity issues about suicide.
- Improved statistical information and research about suicide issues.

The framework of the strategy was thought to be broad enough to be long lasting and inclusive enough to guide interventions from a range of sectors, from government, local government, professional groups, non-government organisations, service providers, iwi, hapu, community members and private individuals. Actions under the strategy ranged from broad initiatives to enhance

---

resilience of young people and reduce vulnerability, to initiatives providing support to people affected by a suicide. Kia Piki te Ora o te Taitamariki took an approach based on community development, and on encouraging services to be more responsive to the needs of Māori.

Initial development of work programs relating to the implementation of the NZYSPS included the establishment of Suicide Prevention Information New Zealand (SPINZ, launched in 1999), Kia Piki Community Development projects, Youth Development Fund projects and a range of guidelines, information pamphlets and training for a range of audiences. Dissemination of the NZYSP Strategy occurred through mail-outs and presentations to key groups, as well as through a range of services and providers, public health units and non-government organisations.

Phase One of an evaluation (2003) involved in-depth interviews with key informants in government and non-government organisations. Though the NZYSPS was seen as a vital reference tool, well accepted, and perceived as identifying best-practice principles, the evaluation found that communication and implementation could have been improved. While most informants had read and understood the NZYSPS document, many believed that there was limited understanding of how to use or implement it in the wider community. Phase Two (2004) sought solutions to these issues from the perspective of community organisations and professionals at the 'end-user' level as well as central government.

A series of reports were published by the Strategy to guide practice (available for download from <http://www.chmeds.ac.nz/research/suicide>) - Suicide and the Media - The reporting and portrayal of suicide in the media - a resource (1999); Guidelines for Primary Care Providers: Detection and Management of Young People at Risk of Suicide (1999); Restricting Access to Means of Suicide in New Zealand (2000); New Zealand Health Strategy District Health Boards Toolkit for Suicide Prevention (2001).



---

Further to the evaluation, a consultation document was launched in April 2005, and a new Strategy (*A Life Worth Living*) launched in June 2006, which broadened suicide to all age groups, and had 5 principles

- Evidence and strengths-based approach
- Responsiveness to Māori
- Valuing diverse communities, people and cultures
- Leadership and collective responsibility
- Long-term approach, monitoring and evaluation.

A Task Force has overseen development of the Action Plans, there is an External Advisory Group, and with the launch of the Strategy in 2006 a Suicide Research Network of New Zealand was created.

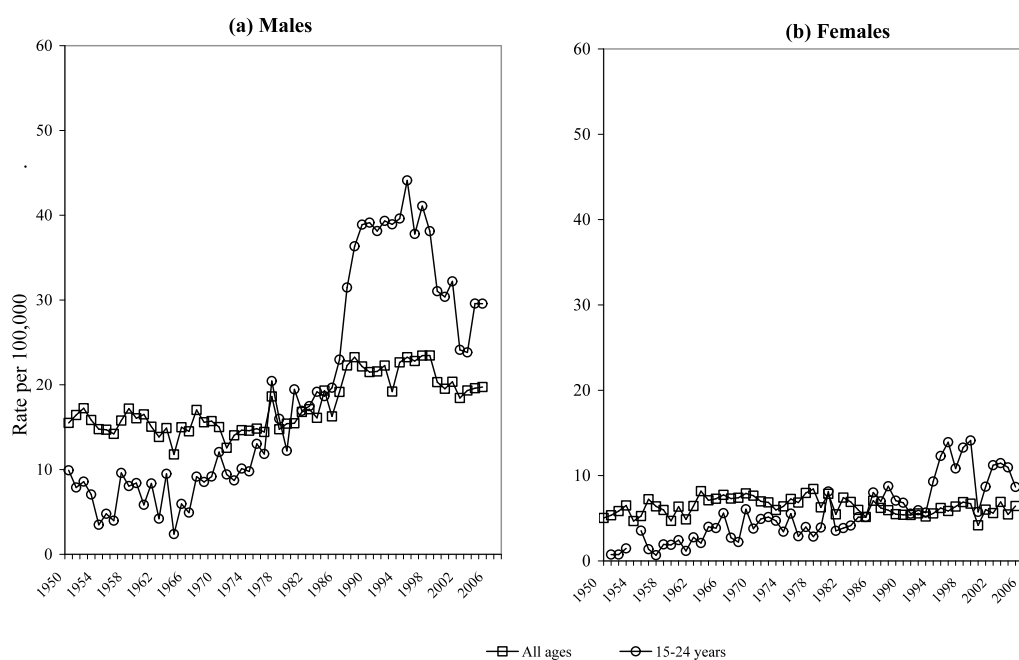
Central to the new strategy are 5 Objectives:

- Increase support for primary care providers in the recognition, treatment and management of the mental disorders commonly associated with suicide and suicide attempt.
- Develop integrated models of care for those at risk of suicide.
- Continue to implement and evaluate the guidelines for those at risk of suicide in acute settings.
- Develop integrated services to provide longer-term care and support to those who have made suicide attempts.
- Review programmes for key community, institutional and organisational workers ('gatekeepers') to ensure best practice.

## **Outcome**

Suicide rates in New Zealand show a steady increase in overall male rates from the early 1970s, and in part this would appear to have been driven by the spectacular rise in youth male rates from the mid 1960s. The female youth rates seem to parallel the male youth rates but at a lower level, with the peak levels mirroring those in young males. In the face of this, the overall female rate seems to have stayed remarkably stable in the last few years.

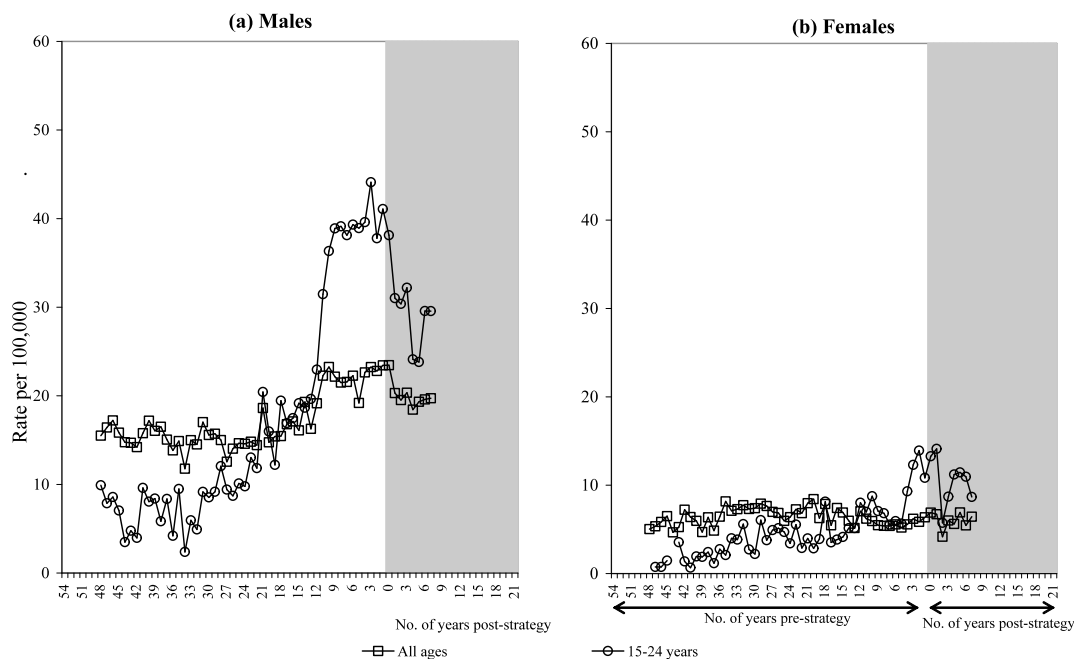
Figure 11: Suicide rates in New Zealand for all ages (age-adjusted) and youth.



From Table 6: New Zealand (see Appendix: Suicide Rate Changes), the overall male rates since 1950 show an average 20.0 per 100,000, but given the steep increases pre-strategy, it is not surprising that the rate post-strategy is an average 17.8 % higher over the first 5 years, although declining to an average rate of 10.1% above the average pre-strategy rate for the years since then. Within this, the young male rate overall pre-strategy was 19 per 100,000 - very close to the overall male rate (which is unusual in International comparisons). Given the steep rise in rates, again it is no surprise that for the 5 years post-strategy, the rate was an average 63.7% higher than pre-strategy rates. There is then a decline in the average rate to 45.4 % above pre-strategy rates for the subsequent years.

The overall female average rate pre-strategy was 8.5 per 100,000, and this shows a decline to an average 7.8% for the 5 years post-strategy, which has continued even lower at 3.7% in subsequent years. Within this, the female youth rate was 5.0 per 100,000 pre-strategy, but because of the steep rise in youth rates over many years pre-strategy, the average rate has been very high post-strategy at an average 110% higher for the first 5 years, and 105% higher than the pre-strategy rate for the last few years.

Figure 12: Suicide rates in New Zealand for all ages (age-adjusted) and youth, pre- and post-strategy intervention.



Again the slopes (see Appendix Tables 13 & 14: Percentage annual average change) assist us to understand the story better. The overall slope of the male increase pre-strategy was 1.4% per annum, which increased for the years just pre-strategy to an average 1.5% increase per annum. This has turned around since the strategy to show a reduction of an average 2.2%, the post-strategy slope being statistically different to the overall pre-strategy slope ( $p < 0.05$ ). A contributor to this has to have been the youth male rate, which shows a spectacular rise in the 1980s to 1990s with an overall slope of 5.6% since 1950. In the immediate pre-strategy period, this average annual increase slows to 0.8% per annum, and there is then a reversal of the rate to a decline since the strategy of 3.7% per annum. Comparing the post-strategy decline to the overall pre-strategy rate, the probability of this being a chance result is  $p = 0.005$ .

For females overall, rates were stable overall in New Zealand from the 1950s, but in the immediate pre-strategy years, there had been an average increase of 2.7% per annum. This reversed to a decline post-strategy of 0.5% per annum (NS). Within this, the young female rate had increased overall in a manner similar to young males, with an average rate increase per annum of 4.2% overall, which in

---

the immediate pre-strategy period had increased to 13.7% per annum average. Post-strategy, this changed to a decline of 3.1% average per annum. The difference between the immediate pre- to post-strategy averaged rates is significant ( $p < 0.005$ ).

Overall, given the New Zealand strategy was initially targeted at young males and females in the age group 15-24 years, and despite the initial evaluation criticisms, we would have to acknowledge that the NZYSPS strategy has been highly successful. The strong turnaround in the rates for young New Zealanders, despite the erratic nature of annual suicide rates, looks like it is sustained. The recent careful redevelopment of the strategy, and the continued commitment of the New Zealand Government to its continuation, may well support ongoing progress.

---

## France, 2000

The French National Strategy to fight against suicide 2000-2005 was announced in September 2000 (Ministère de l'Emploi et de la Solidarité, 2000). One of the drivers for the strategy was that although overall rates of suicides had tended to decrease slightly since the early 1990s, rates among adolescents and young adults (especially males) had increased, with suicide being the 2nd most common cause of death among 15-24 years and the most common cause of death in 25-34 years.

There were 4 main themes to the strategy:

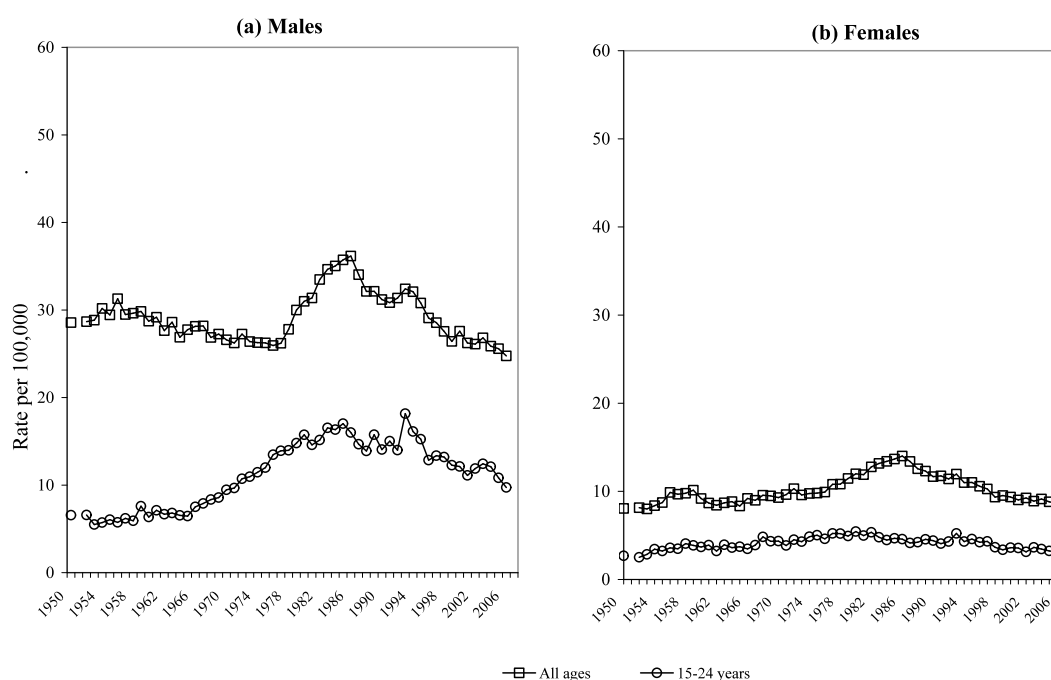
- Promote prevention through increased screening of suicidal risk. One part of this was to improve family awareness of the need to listen to young people. Second, a consensus conference (October 2000) recommended multi-professional training in all regions.
- Reduce access to lethal means with national studies implemented to develop prevention measures. (Firearms -2,900 suicides p.a. (one third of male suicides and 10% of female suicides). In France 23% of households have a firearm, and 5 million people hunt. Trains - SNCF/RATP identified 450 suicides per annum. Drugs - accounted for 11% of male suicides and 27% female suicides.
- Improve management and hospital care of people after a suicide attempt, with a clinical audit progressively extended to all regions of France.
- Improve epidemiological knowledge through cluster research under the Directorate of Research, Studies, Evaluation and Statistics from the Ministry of Employment and Solidarity, with an annual report.

In an evaluation of the strategy (Ministère de la Santé et de la Solidarité, 2006), they note that the multidisciplinary training (the flagship intervention of the National Strategy) trained 291 trainers who trained about 12 700 people (30% teachers, 24% nurses, 11% social workers, 10% physicians). 14 regions developed directories of professionals, 7 made available to the public. They note strong activity in schools and prisons. They concluded that establishment of the

National Strategy had been successful in generating regional awareness of the importance of suicide prevention, mainly through the training program. Engagement of GPs had been low, despite approximately 11,000 suicides per year and 160,000 attempts occurring in general practice in France. It is not clear what changes occurred in access to means.

## Outcome

Figure 13: Suicide rates in France for all ages (age-adjusted) and youth.



From the figure we can see that overall rates for male suicide have been high in France since the 1950s, but from the late 1970s there was a steady increase, which then reversed from the late 1980s. Current rates are the lowest they have been. Male youth show an increasing rate of suicide from 1967 to some stabilising in the 1980s, a peak in 1995, and a steady decline since then, though rates remain higher overall than from 1950-70.

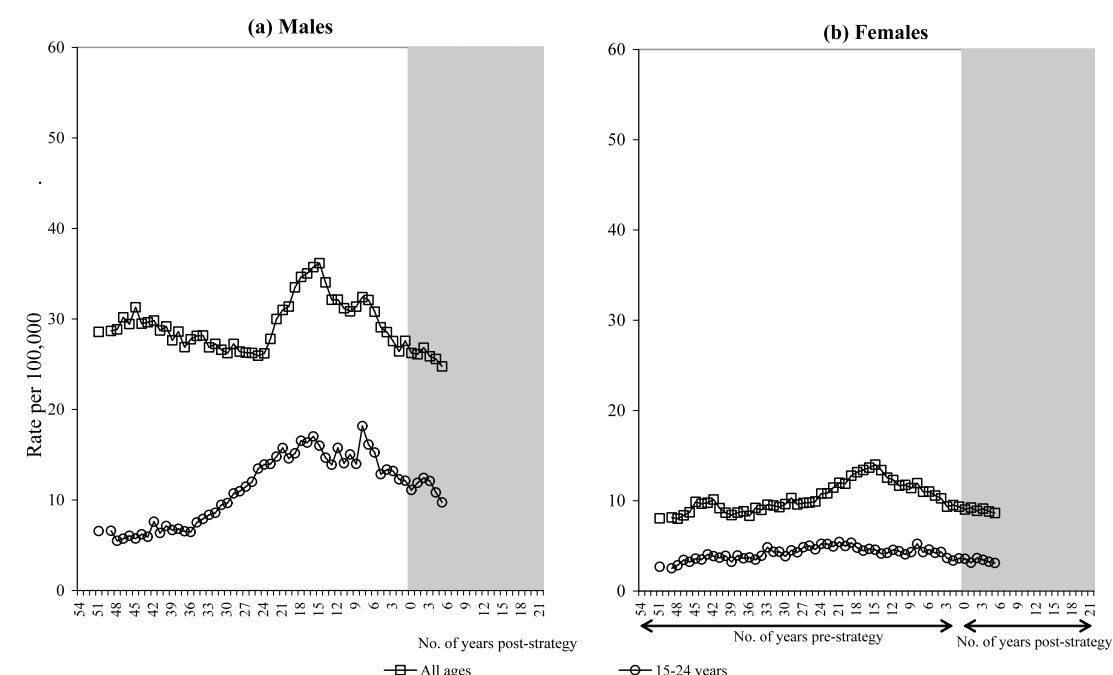
Overall female rates show a steady rise from the 1950s with a peak coinciding with the peak overall male rate. The rate for female youth shows surprisingly little variation, but there was a steady increase up to about 1980, and subsequently an overall decrease, with rates back to those of the 1950s.

It would appear that the message from the before and after figures is that the rates of suicide for overall males and females have simply continued to fall.

From Table 7: France (see Appendix: Suicide Rate Changes), the overall average rate for male suicide before the strategy was 31 per 100,000. This had begun to fall prior to the strategy, but continued over the first 5 years of the strategy with an average 2.9% below pre-strategy rates, and the next 2 years with an average 7.8% below. The overall young male average suicide rate was 11.5 per 100,000 pre-strategy. This rose to an overall higher rate in the first 5 years of the strategy by 1.7%, but this has now shown an overall marked decline of 15.2% average over subsequent years.

The overall average female rate at 11.1 per 100,000 has been high by international comparisons, but since the strategy has show a decline in the first 5 years of 12.2% ( $p < 0.001$ ), which has continued with a further overall drop of 16.1% ( $p < 0.05$ ) over 2 years. These changes are mirrored in the female youth decreases from an overall 4.2 per 100,000 prior to strategy to an average 18.3% lower for the first 5 years post-strategy, and a further average 25.5% lower in the next 2 years.

Figure 14: Suicide rates in France for all ages (age-adjusted) and youth, pre- and post-strategy intervention



## NATIONAL SUICIDE PREVENTION STRATEGIES

Graham Martin OAM, MD, FRANZCP, DPM & Andrew Page, PHD, The University of Queensland

---

Examination of slopes (see Appendix Tables 13 & 14: Percentage annual average change) simply repeats the story. The rate for men overall since 1950 shows a gradual increase of 0.5% per annum average. In the years pre-strategy this rise had reversed to an average decline of 1.9% per annum. After the strategy, this decline has continued at a slightly reduced rate (1% per annum average). For young males, the overall pre-strategy rate was increasing at 2.6% per annum overall, and in the pre-strategy years this reversed to an average 2% decline per annum. Since the beginning of the French Suicide Prevention Strategy, this has increased slightly to an average 2.6% decline per annum.

For women overall the suicide rate, as for men, was increasing slowly at an average 0.8% per annum. In the pre-strategy years this had reversed to a decline of 3.1% average per annum, and post-strategy this has slowed somewhat to 0.9% per annum. For young women, the overall rise in the rate of suicide pre-strategy was 0.7% per annum. Prior to introduction of the strategy, this process had reversed to a decline of 5.5% per annum. Since the strategy, the decline in the rate has continued at 1.9% average per annum.

For all groups then, overall there had been a steady increase in suicide rates since 1950. Prior to the strategy being introduced, the rates had begun to decline, and subsequent to the strategy introduction the decline has slowed somewhat but the general direction has continued. This shows a consistent pattern in that the French rates. The overall rising rate since 1950 is somewhat deceptive, in that rates generally peaked in the late 1980s with high rates by comparison to other countries. Rates have been declining since, and unlike a number of other countries, the strategy was introduced in the context of declining rates of suicide in France. It is not possible at this time to demonstrate significant change in the French suicide rates in this context. Ultimately, of course, what is important is that the rates continue to decline.



---

## United States, 2001

As the US Surgeon General noted in his Preface to the 'National strategy for suicide prevention: Goals and objectives for action' (2001), the United States loses about 30,000 people to suicide each year. In response to this massive public health problem, nearly half of the States were already engaged in suicide prevention and had committed resources to programs. However, David Satcher adroitly bypassed the Federal/State interface in acknowledging the contribution of large numbers of Americans, saying, "it is the strategy of the American people for improving their health and well-being through the prevention of suicide."

This is also clear from the introduction from the National Council for Suicide Prevention, made up of national not-for-profit organizations focused on the prevention of suicide. In support were a very large number of relevant expert contributors and consultants, the final editing being completed by a team led by Professor Morton Silverman.

The Key Elements of the strategy are worthy of acknowledgement:

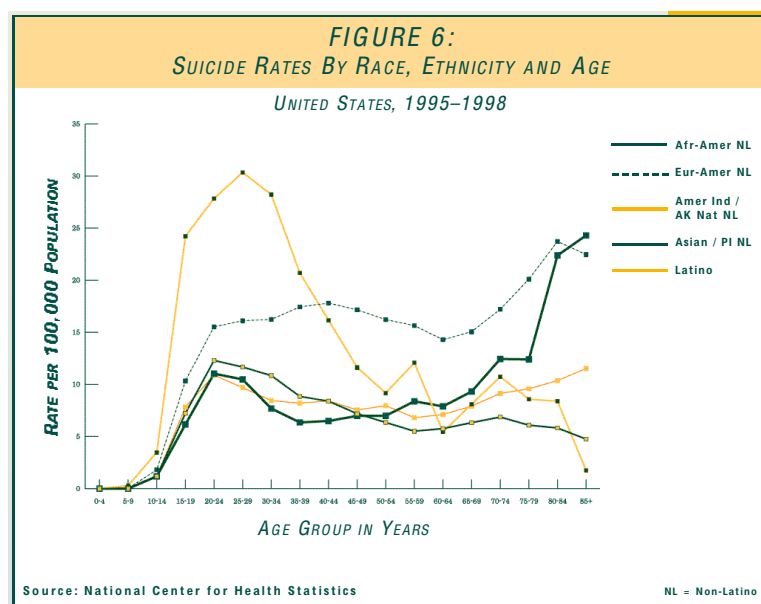
"A national strategy for the prevention of suicide has many interrelated elements contributing to success in reducing the toll from suicide.

- A means of engaging a broad and diverse group of partners to develop and implement the national strategy with the support of public and private social policies
- A sustainable and functional operating structure for partners with authority, funding, responsibility, and accountability for national strategy development and implementation
- Agreements among Federal agencies and institutions outlining and coordinating their appropriate segments of the national strategy
- A summary of the scope of the problem and consensus on prevention priorities (for example, The Surgeon General's Call to Action to Prevent Suicide, USPHS, 1999).
- Specified national strategy aims, goals, and measurable objectives integrated into a conceptual framework for suicide prevention

- Appropriate and evaluable activities for practitioners, policy makers, service providers, communities, families, agencies, and other partners
- A data collection and evaluation system to track information on suicide prevention and benchmarks for national strategy progress”

The strategy was explicit about the variations in suicide rates across States, but also in different ethnic groups across the age range (see Figure 15 (Figure 6 drawn from the report, p 33)); this draws attention to the high rate of suicide in young American Indians.

Figure 15. US Rates by Race Ethnicity and Age



There was a good balance in the consideration of risk and protective factors, and the report drew strongly on the work of Mrazek and Haggerty (Committee on Injury Prevention and Control, 1994) toward a framework for intervention.

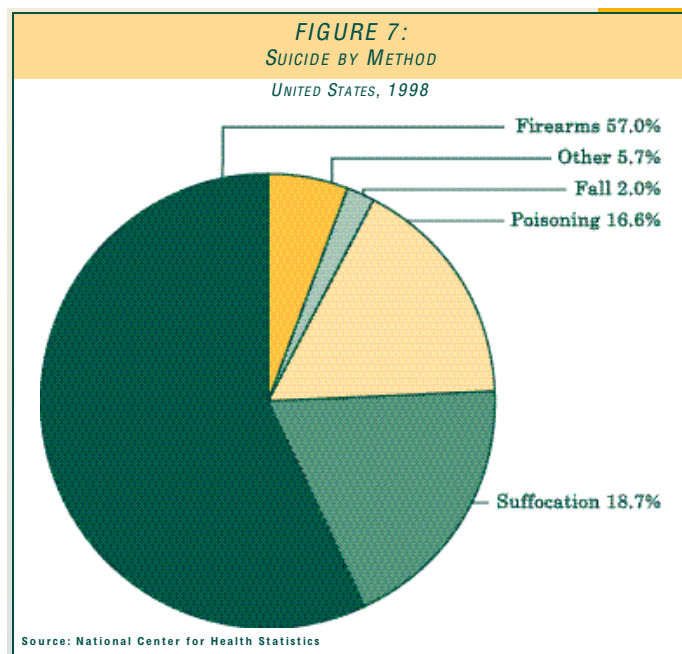
The Goals were as follows:

- Promote awareness that suicide is a public health problem that is preventable
- Develop broad-based support for suicide prevention
- Develop and implement strategies to reduce stigma associated with being a consumer of Mental Health, Substance Abuse and Suicide Prevention

- Develop and implement community based suicide prevention programs
- Promote efforts to reduce access to lethal means and methods of self-harm
- Implement training for recognition of at-risk behavior and delivery of effective treatment
- Develop and promote effective clinical and professional practices
- Improve access to and community linkages with Mental Health and Substance Abuse Services
- Improve reporting and portrayal of suicidal behavior, mental illness, and substance abuse in the entertainment and news media
- Promote and support research on suicide and suicide prevention
- Improve and expand surveillance systems

Within each Goal were a number of carefully spelt out objectives, a solid rationale for each, some ideas for action, and a description of how each of the objectives would help to reach the goal.

Figure 16. US Suicide by Method



As an example, the goal of reducing access to firearms (part of Goal 5) was officially sanctioned and facts were explicitly presented (see Figure 16 (Figure 7

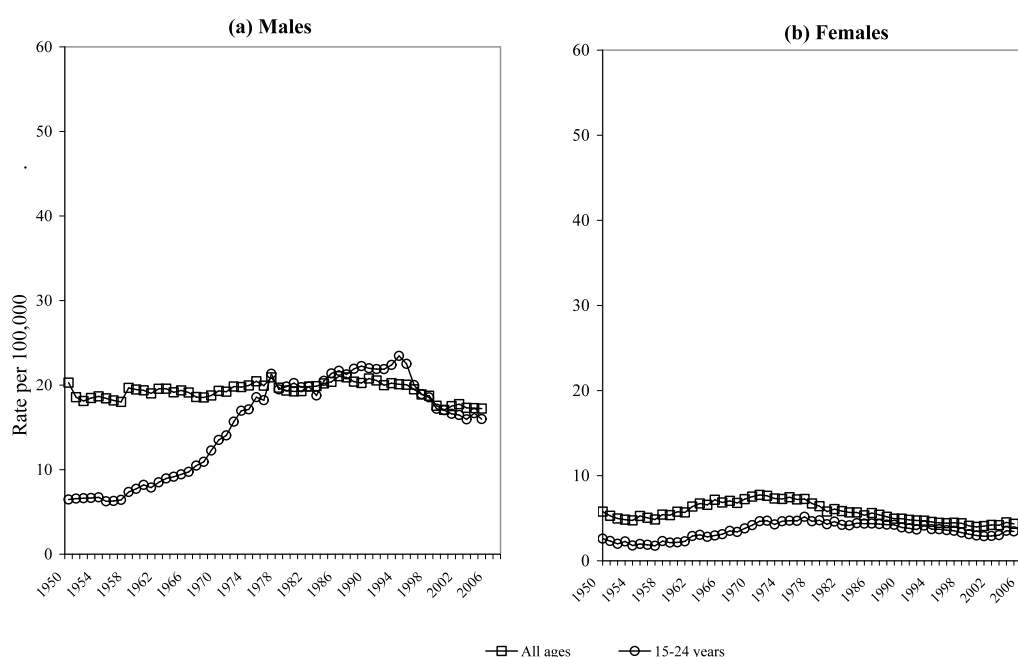
drawn from page 75 of the report)). Much of this related to a proposed national education campaign about the issue, and about safe storage of firearms. Of note, the goal stopped short of recommending firearm control and removal, as this would have had constitutional implications (the right to bear arms).

An excellent feature of the US strategy is the fact that it appears to have been written for the average educated American, and therefore although it is a lengthy document about a complex set of ideas, the document as a whole acts as an education exercise with its clear facts and simply stated ideas for action.

## Outcome

As we can see from Figure 17, the rates for the United States look much more stable than for other countries, simply because of the large population base. This is as true for young Americans as it is for other ages.

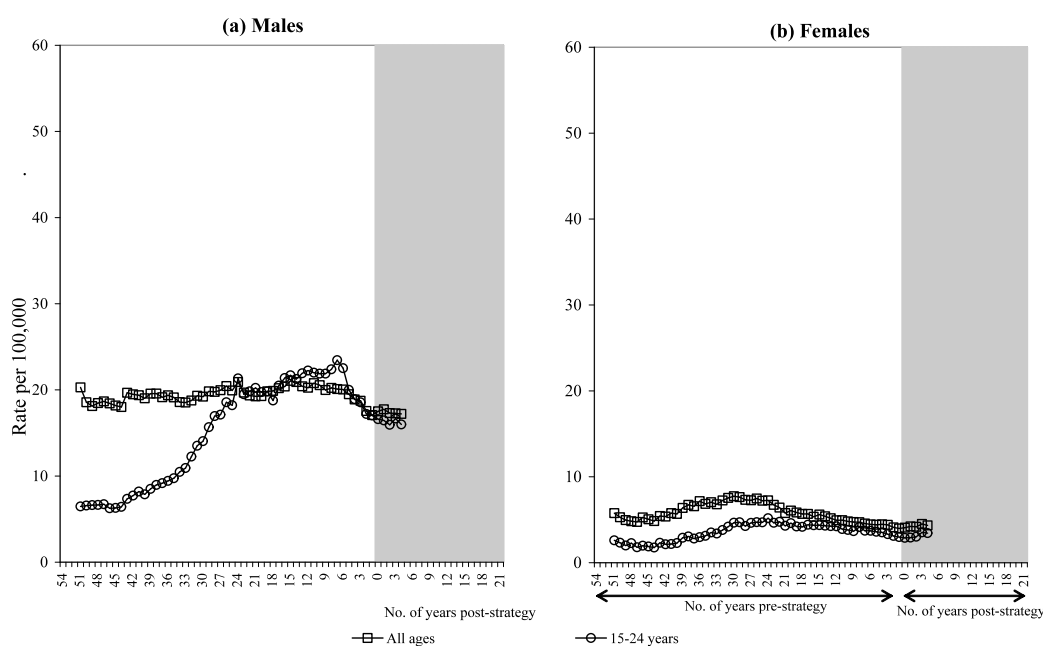
Figure 17: Suicide rates in the United States for all ages (age-adjusted) and youth.



Nevertheless we can see that the overall male rate was reasonably stable over many years, beginning to reduce from about the late 1990s. The 15-24 year old male rate climbed steadily from the 1960s to reach a peak in the late 1990s. The

overall female rate rose in the 1970s, but has declined since. The 15-24 year old female rate climbed steadily from the 1960s, stabilised across the 1970s and 1980s, and has declined since the mid 1990s.

Figure 18: Suicide rates in the United States for all ages (age-adjusted) and youth, pre- and post-strategy intervention.



From figure 18, we can gain some idea of the changes following the US Suicide Prevention Strategy beginning in 2001, even though we only have the first 5-year block of WHO data since.

From Table 8: United States (see Appendix: Suicide Rate Changes), the overall male rate over the 50 years or so pre-strategy was 22.0 per 100,000. Following the beginning of the strategy in 2001, the average rate fell by 10.4% overall (NS). Within this, the 15-24 male rate was at an average 16.3 per 100,000 pre-strategy, and in the 5 years post-strategy the average rate fell by 0.1% (NS). The overall female rate pre-strategy was 6.3 per 100,000. Further to the beginning of the US strategy, the average rate fell by a significant 24% on average ( $p < 0.001$ ). Within this, the 15-24 year old female rate pre-strategy was 3.7 per 100,000, and has fallen by 14.9% (NS).

---

All of this sounds good, except when we consider the comparison of slopes from pre- to post- strategy (see Appendix Tables 13 & 14: Percentage annual average change). In the US, rates generally peaked in the late 1980s, and were already coming down, and so the results have some similarities to the French results. The male slope shows an overall increase of an average 0.2% per annum in rates since 1950. However the rate had been declining for some years prior to the strategy and for the 5 years prior to the strategy, the declining rate was an average 3.2% per annum. This has slowed post-strategy to 0.5% average decline per annum. For the 15-24 year old males the suicide rate had climbed at an average 2.3% per annum. In the period pre-strategy, this reversed to a decline of 4.1% per annum average. Post-strategy this rate of decline for young males has slowed to an annual change of 0.4%.

The overall female rate had been reducing by an average 0.6% per annum since 1950, and pre-strategy this accelerated to an average 2.8% per annum. Since the strategy the rate has reversed, and is now increasing at an average of 1.9% per annum. Within this the young female rate of decline pre-strategy was an overall increase per annum of 0.9% average. Prior to the strategy, this reversed to a declining rate at 4.9% per annum, and post-strategy has reversed again to be increasing at an average 5.6% per annum ( $p=0.005$ ).

So male rates had been declining, and continued to do so post-strategy. Female rates had been declining pre-strategy, but have now reversed and started to climb again post-strategy. From this picture, even though it has been going a relatively short period, it would appear that the US strategy has not yet had much impact.

---

## England and Wales, 2002

The UK Strategy was based on a discussion document '*Saving Lives: Our Healthier Nation*' (see Department of Health, 1999) which suggested a reduction in suicide of 20% by 2010. Considerable public discussion contributed to the deliberations of an eminent Advisory Group under the chairmanship of Professor Louis Appleby. There are six overarching Goals in a program of work that was seen as evolving over time. The goals included:

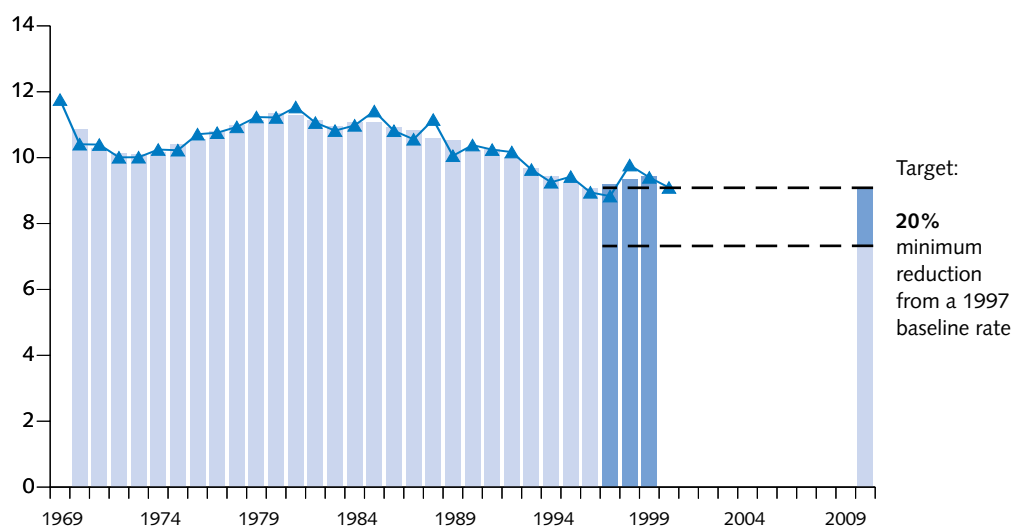
- Reduction of risk in high risk groups (improved clinical risk management in mental health; national monitoring of non-fatal deliberate self-harm; a pilot project targeting mental health promotion in young men)
- Promotion of wellbeing in the wider population (cross government network to address social issues for people with mental health problems, e.g. unemployment and housing; close link with the NIMHE substance misuse program to improve clinical management, and training in suicide risk assessment for substance misuse services)
- Reduction in availability and lethality of suicide methods (safer prescribing; improved safety at suicide 'hotspots')
- Improved reporting of suicidal behaviour in the media (media action plan; workshops with students of journalism; journalist road shows; feature on suicide in media journals)
- Promotion of research on suicide and suicide prevention (national collaborative group; current evidence on suicide prevention made available to local services through NIMHE's website)
- Improved monitoring of progress (by age and gender, by people under mental health care, by different methods and by social class)

The strategy is almost exclusively based on risk reduction and service improvement. Wellness and mental health promotion seem to be poorly conceptualized, and the full spectrum of prevention is not acknowledged. Even where wellness and mental health promotion are mentioned, they are not so much about resilience, optimism, and connectedness; rather they are about

addressing social issues (which may underpin the lack of these assets), managed with service responses.

On the other hand, the overall target for 20% reduction in suicide was explicit in the Strategy (see Figure 19 (Figure 5 from the England and Wales report)).

**Figure 5: Death rates from suicide and undetermined injury per 100,000 population England 1969-2000**



Under each strategy goal there were specific objectives itemised in terms of what specific reductions of suicides were planned for each area of action.

The links between suicide prevention and substance abuse are being addressed

There have been explicit annual reports of progress available at <http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/index.htm> and these demonstrate the struggle to achieve the 1999 goal, but also report ongoing optimism.

Flexibility was built in under the statement: "The strategy itself will be subject to continual evaluation and changed when necessary."

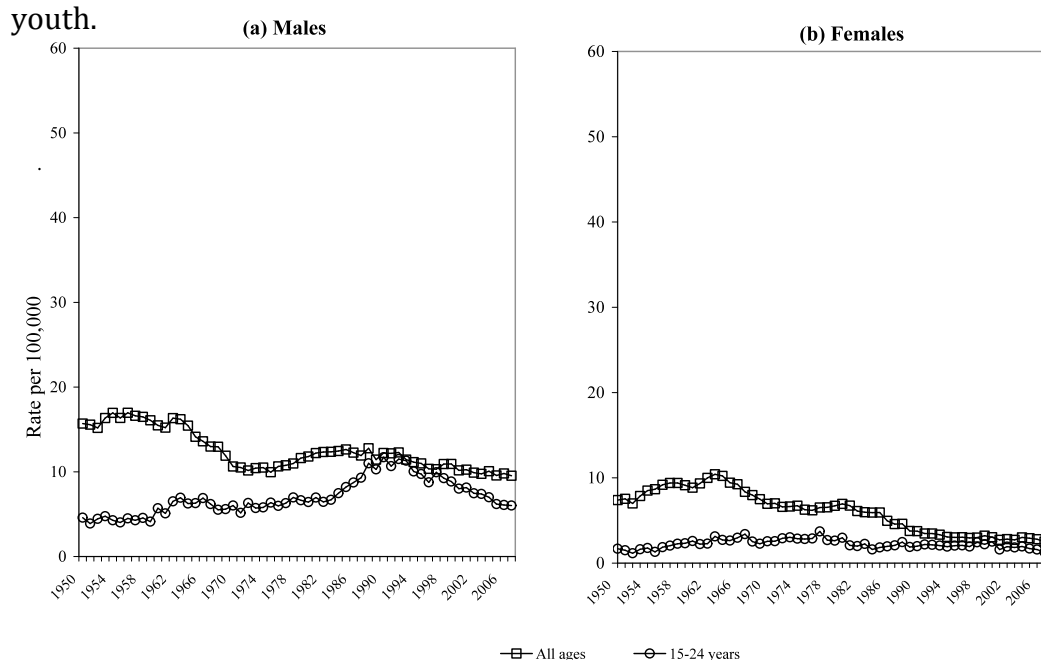
## Outcome

The overall male rate for suicide has been declining more or less since the early 1960s, and in general the rate is moderate at an average 13.9 per 100,000.



Despite this, (see Table 9: England and Wales (see Appendix: Suicide Rate Changes), in the first 5 years after the start of the UK Strategy, the averaged rate declined by 22.1% ( $p < 0.001$ ), and during the next year showed a further averaged decline of 25.6% ( $p < 0.02$ ). Within this, males aged 15-24 years also showed (non-significant) declines from an average rate of 7.2 per 100,000 by 5% in the first 5 years, and by 16% in the next year (neither reaching significance).

Figure 20: Suicide rates in England and Wales for all ages (age-adjusted) and youth.



For females, the decline overall from pre-strategy (an average 7.1 per 100,000) was remarkable at an overall average 55.6% ( $p < 0.001$ ) at 5 years, and a further 61.6% ( $p < 0.001$ ) over the next year. Within this, the young female rate also showed a fall of 22% over the first five years post-strategy from a pre-strategy average rate of 2.3 per 100,000, and further 44.6% drop in the next year (neither reaching significance).

Even taking into account that rates had begun to fall pre-strategy, an examination of the slopes seems to suggest the England and Wales Strategy is having some impact (see Appendix Tables 13 & 14: Percentage annual average change). The overall male rates show a long-term decline of 0.7% per annum average since 1950. This slowed somewhat prior to the strategy implementation

(0.4% per annum average decline), but has now increased again to 0.8% decline per annum. Within this the young male rate was showing an annual rise of 1.7% per annum overall since 1950. This reversed prior to the strategy to a decline of 3% per annum, and since the strategy this has accelerated to 5% per annum.

The female rate had been declining overall at 2.3% per annum average since 1950. This rate of change has changed to 1.0% pre-strategy, and since the strategy implementation has increased slightly to 1.8% per annum decline. Within this, the young female rate was overall static since 1950 (0.0%), but began to decline pre-strategy at 1.4% average per annum, and this has accelerated to 6.9% per annum average decline since the strategy began.

Figure 21: Suicide rates in England and Wales for all ages (age-adjusted) and youth, pre- and post-strategy intervention.



Overall the England and Wales Strategy is as complex to understand as the US and French strategies given the overall declining rates pre-strategy. However, it does appear that the UK at the very least is maintaining the declines in suicide rates, in a world where rates are climbing in general.

---

## Scotland, 2002

Having noted that over 600 people in Scotland suicide each year, with 200 undetermined cases, it is made clear that the Scottish Suicide Prevention Strategy forms a key part of the work of the National Programme to Improve Mental Health and Well-Being. However, a dedicated £12 million over three years was allocated “to support implementation effectively through a co-ordinated programme of activity involving national and local agencies, local community-based initiatives, voluntary organisations and self-help groups”. As the first phase of a comprehensive 10-year plan with the ultimate goal of reducing the suicide rate in Scotland by 20% by 2013, the second phase (2006-12) was to be determined following evaluation, review and assessment of results from the initial phase. There were a number of clearly described objectives:

- Early Prevention and Intervention: providing earlier intervention and support to prevent problems and reduce the risks that might lead to suicidal behaviour.
- Responding to Immediate Crisis: providing support and services to people at risk and people in crisis, to provide an immediate crisis response and to help reduce the severity of any immediate problem.
- Longer-Term Work to Provide Hope and Support Recovery: providing ongoing support and services to enable people to recover and deal with the issues that may be contributing to their suicidal behaviour.
- Coping with Suicidal Behaviour and Completed Suicide: providing effective support to those who are affected by suicidal behaviour or a completed suicide.
- Promoting Greater Public Awareness and Encouraging People to Seek Help Early: ensuring greater public awareness of positive mental health and well-being, suicidal behaviour, potential problems and risks amongst all age group and encouraging people to seek help early.
- Supporting the Media: ensuring that any depiction or reporting by any section of the media of a completed suicide or suicidal behaviour is

---

undertaken sensitively and appropriately and with due respect for confidentiality.

- Knowing What Works: improving the quality, collection, availability and dissemination of information on issues relating to suicide and suicidal behaviour and on effective interventions to ensure the better design and implementation of responses and services and use of resources.

There are five guiding principles (effective leadership, shared responsibility, a person centred approach, a focus on priority groups, and continuous quality improvement). Like a number of other strategies, there is a focus on reducing high risk, and increasing awareness and strategies in services (health, prisons, job centres), but also local services and non-government organisations.

For each of the objectives there are explanations. For instance for the Media Objective - Ensuring that any depiction or reporting by any section of the media of a completed suicide or suicidal behaviour is undertaken sensitively and appropriately and with due respect for confidentiality by:

- developing and promoting guidelines, based on national and international evidence, for a 'code of conduct' on the depiction and reporting of suicide by local and national media to encourage informed and sensitive reporting of suicide
- continuing to develop appropriate training and awareness raising initiatives for those working in, or with, the media
- developing local guidelines for local media and for providing training and awareness raising for those working in, or with, the local media.

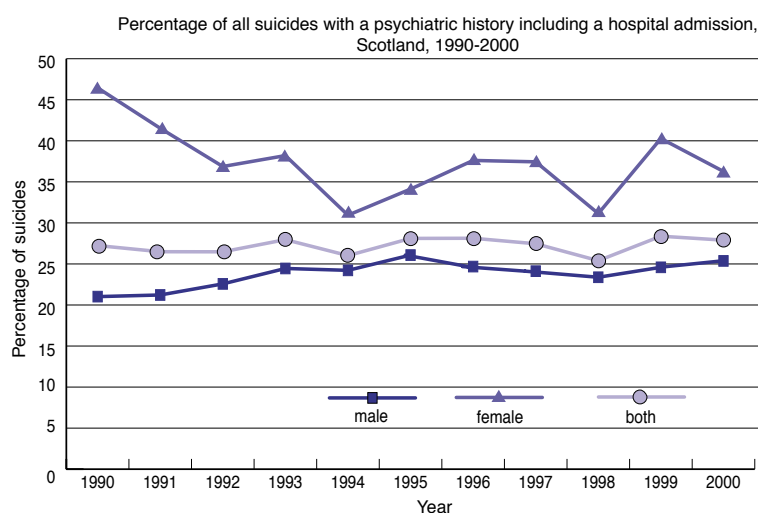
Given the focus on service development, there are some interesting graphs. The graph below presumably is based on the 600 deaths experienced by Scotland each year. The estimate of only 27-28% of suicides having a psychiatric history is a modest estimate by international standards (see Figure 22 taken from the Scottish report), and perhaps does not support the emphasis on service development. Rather it is perhaps an argument for consideration of broader approaches to socio-economic factors, which is not that strong within this

strategy, but is dealt with in the broader Improvement of Health Strategy (£26 million pa), as well as a Wellbeing Strategy (£20 million over 3 years), and a Health Promoting Schools Strategy.

Figure 22. Percentage of Suicides with a Psychiatric History (Scotland)

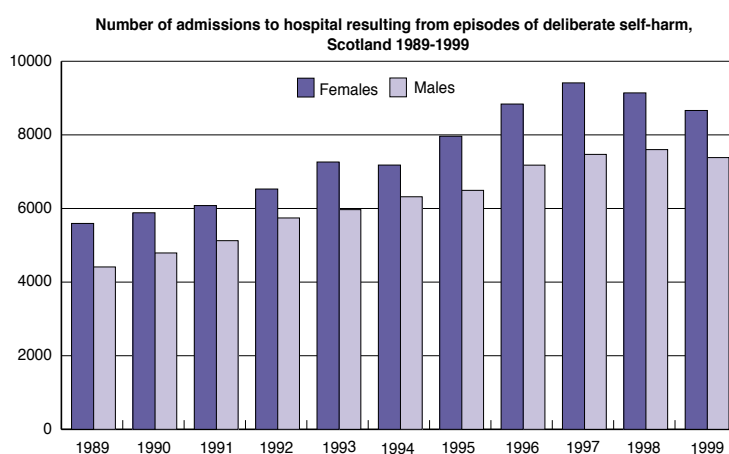
**PERCENTAGE OF SUICIDES (MALE AND FEMALE) WITH A PSYCHIATRIC HISTORY, OVER LAST 11 YEARS**

This graph shows the percentage of suicides in Scotland comparing male, female and both, who have a psychiatric history since 1990.



The following graph (Figure 23 taken from the Scottish report) makes the case that episodes of deliberate self-harm are increasing steadily, and of note include almost equal numbers of males and females.

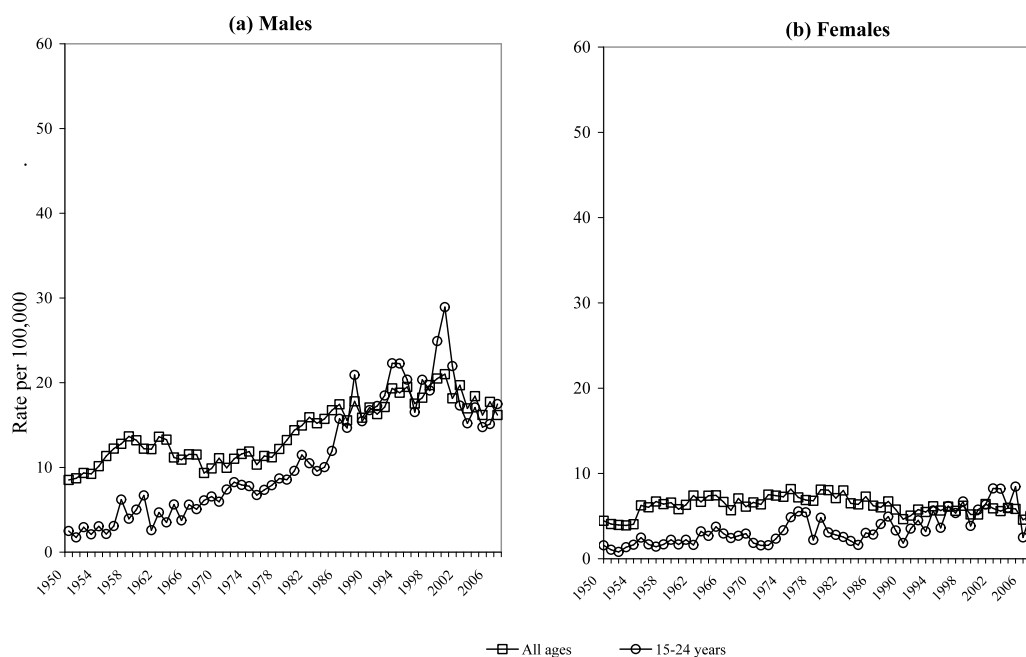
Figure 23 Admissions to hospital with Self-harm (Scotland 1989-99)



The accompanying text notes that 1% of these die through suicide within the first year and 3% within the next 5 years, echoing other research in the UK.

An examination of the following graph shows the rates of suicide for males and females overall in Scotland, as well as young suicides aged 15-24.

Figure 24: Suicide rates in Scotland for all ages (age-adjusted) and youth.

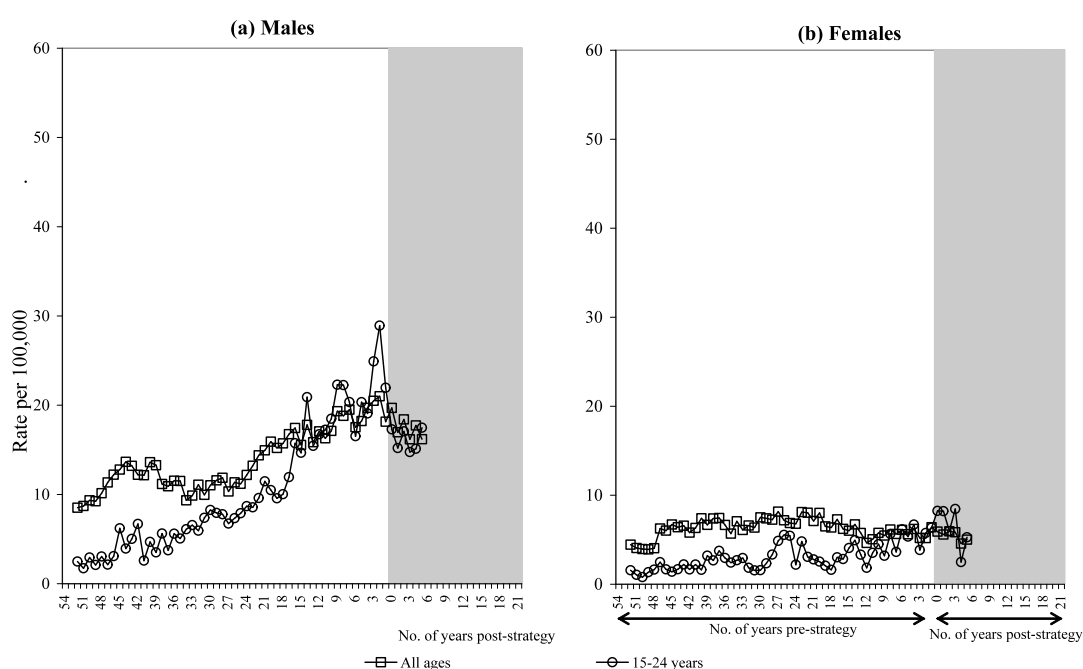


Rates in males (overall and for the 15-24 year olds) show a steady increase from the 1950s through to a peak in 2001. For females overall it appears that the overall rate has been decreasing slowly since the 1970s. Within this though, there is an increase in young female suicides from the early 1990s.

From Table 10: England and Wales (see Appendix: Suicide Rate Changes), pre strategy, the overall average male rate for suicide was 15.2 per 100,000. Given steady increases in rates overall pre-strategy, as we might expect, the average rate for the first 5 years of the strategy remained higher overall by 28.2%, but the fall in rates from 2002 means this reduces to 13.6% above the pre-strategy rate. For young males (15-24 yrs), the overall average rate pre-strategy is 10.3 per 100,000, and because of the steep rise pre strategy, the average rate remains 54.5% above the composite pre-strategy rate, and is somewhat higher even (average 70.2%) in the next 2 years.

For females overall, the average rate was 6.8 per 100,000 pre-strategy; this fell in the first five years of the strategy by an average 12.6%. In the next two years this decline has continued, the average rate now being 21.2% lower than the pre-strategy rate. For younger females the averaged rate was 3.1 per 100,000 pre-strategy, but increased over the first five years of the strategy to be an average 116.7% higher than overall strategy rates, although there has been a recent drop in the latest 2 years to only 71.6% higher than the averaged pre-strategy rate.

Figure 25: Suicide rates in Scotland for all ages (age-adjusted) and youth, pre- and post-strategy intervention.



An examination of slopes helps us to reconsider the apparently high rates post-strategy (see Appendix Tables 13 & 14: Percentage annual average change). Overall, since 1950, male rates have been climbing at 1.7% per annum pre-strategy, and this rate had slowed somewhat in the years before implementation (to 1.5% average per annum increase). Since the strategy, the male rate has declined by 3% per annum. The Scottish young male rate has been climbing overall at a 4.7%, and immediately prior to the strategy was climbing at 8% per annum average. Since the strategy there has been a sharp reversal to a slight decline of 0.2% per annum (NS).

---

The pre-strategy female rate has been increasing slowly over the years by 0.1% average per annum, but prior to the strategy there was a decline of 0.6% per annum average. This decline has accelerated to a 4.2% per annum since the strategy began. For young women there is a similar picture with a general increase in rates from 1950 (2.4% per annum average) and then the beginning of a decline pre-strategy of 0.3%, which has accelerated to a 12.4% post-strategy (a trend at  $p < 0.05$ ). The slope comparison does offer a more optimistic picture than that of the average rates, and overall it looks as though the Scottish strategy is beginning to have an impact.



---

## Japan 2000

Although volunteer organisations such as Inochi No Denwa (Telephone Service for Life) have been active in Japan since 1971, it was not until a sudden increase in deaths in 1998 that the Ministry for Health, Labor and Welfare began to discuss measures to combat suicide. One of the goals of Health Japan 21, a national health promotion program launched in 2000 was to reduce suicides by 30% by 2010 (Kenko Japan 21). However, a detailed national plan of action was not described, and the course of action to meet this proposed outcome was left to local prefecture governments (Motohashi et al., 2004). One program supported by the Akita Prefecture government (North West of Honshu Island) was developed in response to very high rates of suicide (42 per 100,000 compared to a national rate of 24.8 per 100,000) thought to be related to the high rate of elderly citizens, and de-population. A review of international literature led to a program incorporating awareness raising (which includes an information system on suicides and suicide prevention), improved health consultation in a variety of settings, prevention of depression (including early detection and treatment) and a supportive environment for mental health promotion (which includes health education in schools and a suicide prevention program in the workplace).

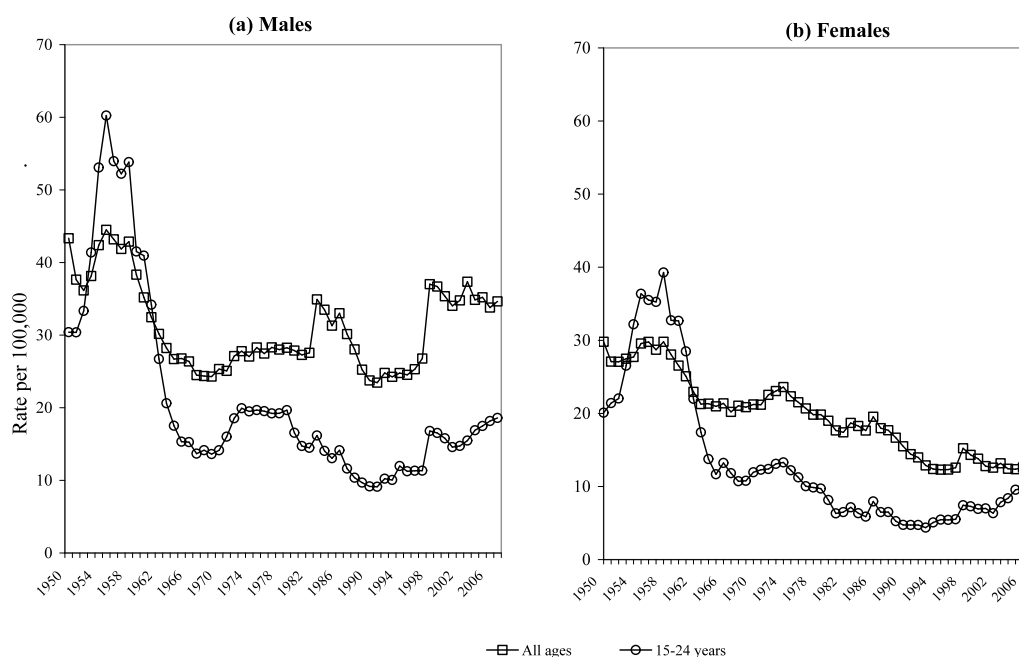
In October 2006, a suicide prevention centre was established at the National Institute for Mental Health; the purpose was to support the Comprehensive Suicide Prevention Initiative created in 2007. This CSPI (Kaga et al., 2009) has a number of clear national targets which include scientific studies, social education, human resource development, mental health promotion, enhancement of mental health services, socio-economic measures, prevention of re-attempts, care for survivors and cooperation with non-government organisations.

## Outcome

Rates of suicide in Japan were at extreme highs from the mid 1950s to the mid 1960s, for males and females overall and including young people. For males, including the 15-24 years age group, the rate dropped to its lowest in the mid

1990s, but generally since the 1970s has been climbing to a very high rate of 35 per 100,000 (overall) and 18 per 100,000 for young male. The female rate seems to have a different pattern; the overall rate dropping steadily from the 1950s high until a small upsurge in the last few years. The 15-24 years female rate dropped to it's lowest in the mid 1990s, but has steadily increased since that time.

Figure 26: Suicide rates in Japan for all ages and youth.

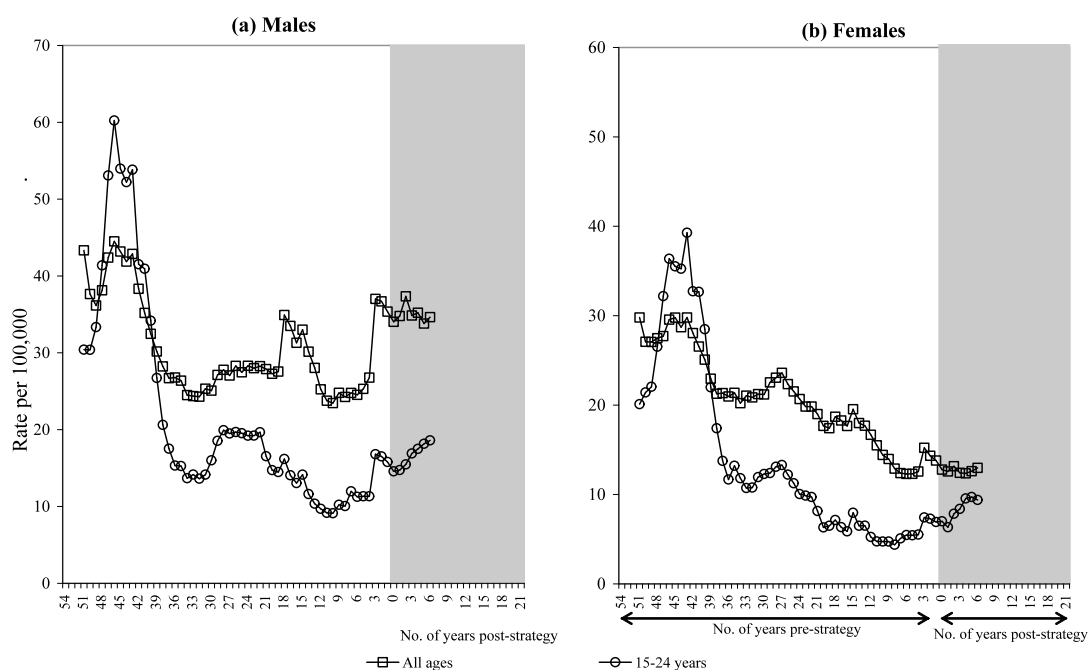


The Japanese Strategy has not been strictly a national strategy (by comparison, say, to European strategies), given the handover of responsibility to prefectures. Nevertheless it is instructive to examine what changes from pre- to post-strategy may have occurred, given the national work began in 2000.

From Table 11: Japan (see Appendix: Suicide Rate Changes), the overall average male rate pre-strategy was 27.9 per 100,000, and since the strategy showed an overall increase of 21.6% averaged for the 5 years ( $p < 0.001$ ), with a further increase of 17.3% in the next year ( $< 0.05$ ). Within this, young males show a different pattern with an average rate of 21.6 per 100,000, which was lower than this average rate for the first 5 years of the strategy by 26.7%, and has remained at an average 14.6% below the pre-strategy rate since.

For females, the overall average rate pre-strategy was 16.3 per 100,000, and the comparison average rate was 29.5% lower during the 5 years post-strategy ( $p < 0.001$ ), and has stayed at this level for the sixth year. For young females, the rate pre-strategy was 14.1 per 100,000, and this dropped overall by 44.7% average in the first 5 years, and although there is a slight rise, it remains at 32.1% below pre-strategy rates.

Figure 27: Suicide rates in Japan for all ages and youth, pre- and post-strategy intervention



Again the analysis of the relevant slopes pre-and post-strategy helps us to make some sense of the graphs (see Appendix Tables 13 & 14: Percentage annual average change). Pre-strategy, the overall slope for males of all ages was declining at 0.1% per annum average. Just before the strategy, this rose sharply to an increase of 10.1% per annum average, and post-strategy, began to fall again at 0.1% per annum average. For young males since 1950, the picture is similar, an overall decline of 3.2% per annum, despite the rises and falls. Immediately pre-strategy, the rate had risen quite sharply to an average 10.6% per annum, and although there is a slight change post-strategy, the rate continues upward at an average 5% per annum.

---

For females overall since 1950, there is a similar a pattern with an overall decline since 1950 of 1.7% per annum. Pre-strategy this changes to an increase of 3.8% average per annum, and post-strategy there is a reversal to a decline of 0.4% average per annum. Within this, the younger Japanese women show an overall decline of 4.3% per annum, and pre-strategy this changes to a marked increase of 7.8% per annum on average. Post-strategy the increasing rate continues at 8.7% per annum.

The patterns for the young males and young females show some similarities, and clearly one could not suggest that the Japanese Suicide Prevention Strategy is at this point having an impact on this group. The overall rate changes suggest there may be some impact in the older groups, and this may reflect what Motohashi et al. (2004) suggest about the overall focus on elderly people by prefectures..

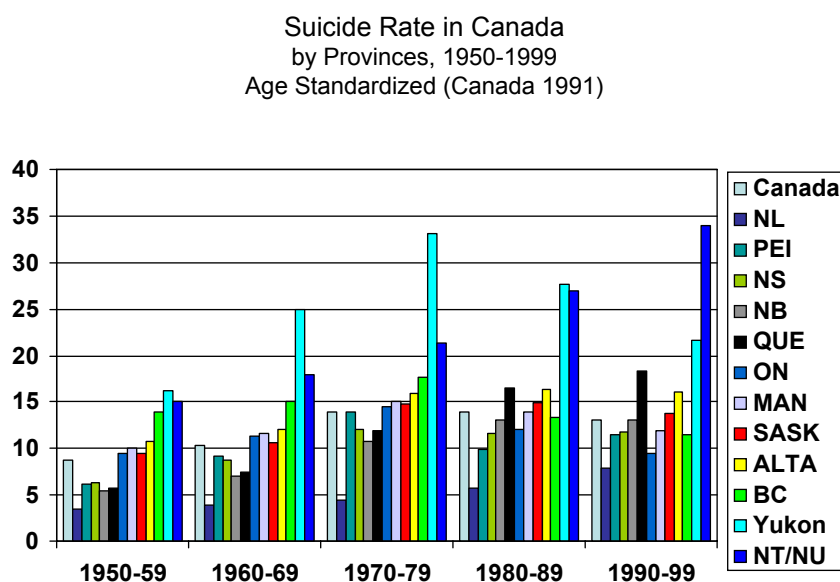
## Canada

As of the date of writing, Canada has not formalised a national strategy for suicide prevention. An online Petition ( <http://nspscnd.epetitions.net/> ) to adopt the Canadian Association for Suicide Prevention Blueprint ( <http://www.casp-acps.ca/blueprint.asp> ) had garnered only 224 votes by 1<sup>st</sup> August 2009.

The case made by CASP (2004) is a strong one based on 100,000 suicides over the previous 30 years, and the Blueprint has been carefully developed by a comprehensive process, with wide community and professional consultation. There are 4 Themes including Awareness and Understanding, Prevention and Intervention, Knowledge Development and Transfer, and Funding and Support. Within these are a total of 19 Goals each of which contain specific and clearly stated Objectives.

The Rationale for a Strategy (part of Appendix 1) is of some interest to Australia, given that suicide rates vary across states as they do in Australia,

Figure 28. Suicide Rates in Canada by Provinces

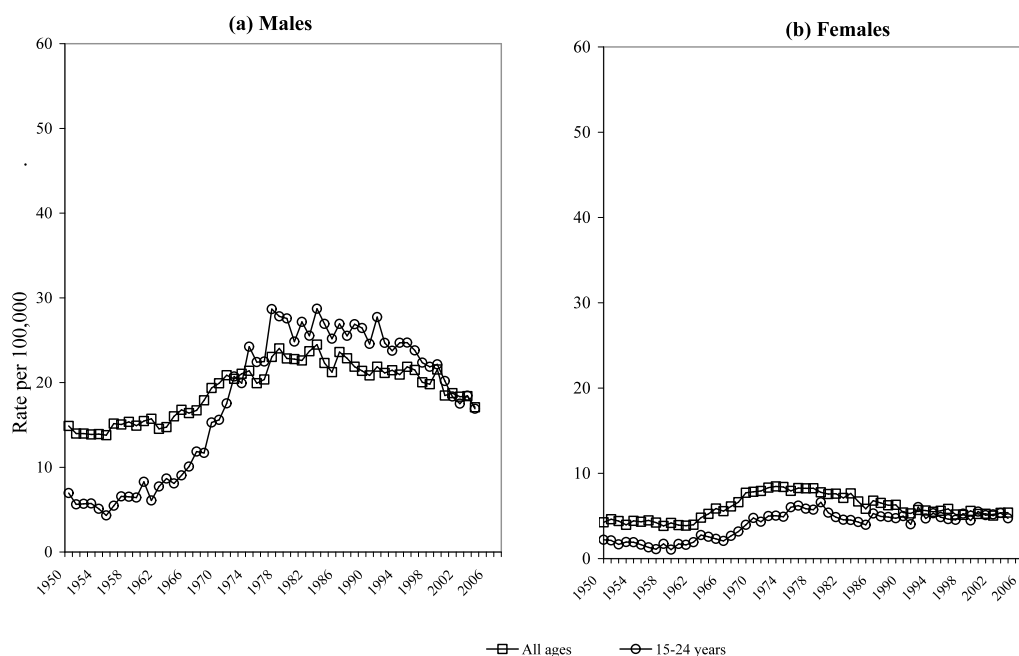


and the rates in Indigenous Canadians have generally been higher (as they have been for Indigenous Australians) (see Figure 28. taken from the CASP report).

CASP notes: “The rates of suicide for First Nations and Inuit people are a serious concern of tragic proportions. In 1997, age-standardized rates available from Saskatchewan, Manitoba and British Columbia show a suicide rate almost three times higher than the total Canadian population. The suicide rates in Inuit regions range from two to six times the national average. The rates have been as high as 82 (per 100,000) in Nunavik, 30 in Labrador and 77 in Nunavut compared to 13 per 100,000 in all of Canada.”

## Outcome

Figure 29: Suicide rates in Canada for all ages (age-adjusted) and youth.



The overall male rate in Canada rose from the mid 1960s, stabilised in the 1970s, and has reduced steadily since the mid 1980s. Overall the rate for young males climbed rapidly from late 1950s, and has been coming down since the late 1970s with a fairly rapid decline since a peak in 1992, with rates now matching the overall male rate. Female rates show a similar, though less extreme pattern, and have remained generally low.

From Table 12: Canada (see Appendix: Suicide Rate Changes), The overall average rate of male suicide in Canada is 21.6 per 100,000, and the current rate

---

has been reducing over many years; the last 5 years average rate is currently 13.3% less than the overall average. Similarly, the overall average rate for young males, while rather high at 19.6 per 100,000, has been reducing over many years and the last 5 years average rate is 13.6% less than the overall average.

For women overall, the overall rate despite variations has been 6.5 per 100,000. Rates have been reducing steadily since the 1970s and are currently (5 year average) 10.3% below the overall average. Within this, the 15-24 year female rate shows an average of 4.3 per 100,000. This is the only group to show and increase in suicide rates over the last five years, the current rate being 10.6% higher than average rates.

Overall, and despite the acknowledged difficulties for Indigenous Canadians, Canada seems to have done well to contain rates without a formal strategy. In the absence of a formal strategy nationally, this must relate to the extensive work done over many years by the various research groups, and the Canadian Association for Suicide Prevention. In addition, it must be acknowledged that governments can support suicide prevention activity with large amounts of funding to relevant groups, despite the absence of a formal strategy; this would appear to be the case in Canada.





---

## Summary

If we just consider males overall for the moment (Appendix, Table 13), Finland, Norway and Australia (the most long lived of the strategies) have demonstrated statistically significant changes from pre- to post-strategy. Sweden, New Zealand (the 2 next most long lived strategies) and Scotland show changes post-strategy that are approaching significance. France, the United States and England and Wales do not have results that show significant change. However, it could be argued that all three of these latter countries have rates of suicide which have shown declines over many years prior to the strategy implementation, and rates in even these countries have continued to decline post-strategy. It appears much easier to draw conclusions about change in suicide rates for countries with rising or erratic rates pre-strategy than countries with declining and somewhat stable rates. Taking into account this complexity, if we consider the total change in rates, adding all rates together, and including Japan, the combined reversal of rates post-strategy is highly significant. Comparing post-strategy to the overall long-term rate, the probability of the change being a chance result is  $p < 0.001$ . Comparing the combined reversal of rates post-strategy to the shorter equivalent pre-strategy rates, the result is still impressive ( $p < 0.05$ ).

Within the overall male rates (Appendix, Table 14), we have separated out the young male (aged 15-24 years) rates – in part because several countries were driven to create strategies as the result of rapidly rising rates in young people. In young males, Finland, Norway, Australia and New Zealand demonstrate statistically significant results. France, the United States and England and Wales again demonstrate ongoing declines in their young male rates, although declines were present pre-strategy in each case. The Scottish young male rate shows a dramatic reversal in rates post-strategy, but the strategy is still in its early days, and the country numbers are small by comparison to other countries. Only Sweden and Japan show a rise in young male rates post-strategy. Again if we combine all countries (and include Japan), the grouped reversal of rates post-strategy is highly significant. Comparing post-strategy to the overall long-term rate, the probability of the change being a chance result is  $p < 0.001$ . Comparing

---

the combined reversal of rates post-strategy to the shorter equivalent pre-strategy rates, the result for young males is still of interest (though a trend only, and NS).

For female rates overall (Appendix, Table 13), the story is not as convincing. While seven of the ten countries (including Japan but excluding Canada), show a declining rate post-strategy, four of these were declining pre-strategy – Australia, France, England and Wales and Scotland. Norway's rate is flat, but no longer rising. Sweden and the United States both show an average annual rise in rates post-strategy.

Within this we can consider the young (aged 15-24 years) female rate (Appendix, Table 14). Five countries show declining rates post-strategy. Australia and New Zealand show reversals from pre-strategy; France, England and Wales, and Scotland continue downward trends. The Australian and New Zealand results are of interest given that both of their strategies began with youth targeted strategies; the New Zealand result reaches statistical significance ( $p < 0.005$ ). Finland, Norway and Sweden all show increasing young female rates post-strategy which may suggest the Nordic countries as a group need to reconsider the targeting of their strategies, given that these results are at odds with other changes for these countries. In particular the Swedish annual increase at 4.3% average per annum is of concern. The United States also shows a marked reversal to an increasing rate for young women since their strategy, and the current rise of 5.6% per annum must be of some concern, and possible reconsidering of targets. As with young males, the young female rate in Japan continues to rise at a high rate (8.7% average per annum), and given the comment elsewhere about the targeting of elderly suicides in Japan, these rising rates in young people suggest the need for redirection and new targets.

Are the results overall convincing enough for us to conclude that strategies work? Some of the results are impressive, and there is a trend for the results of those countries that have the most long-lived strategies to have the better post-strategy results. Despite the mixed results in female suicide rates, the changes post-strategy in most countries with regard to male rates are convincing. The

---

changes in the youth rates (male and female) for Australia and New Zealand seem to reflect the initial targeting of these country's strategies, which seems to add weight to the fact that strategies do have some impact on suicide rates.

Of course, we must also consider the alternative that conditions in a country (socio-political, economic, and cultural) may have changed and led to the strategy on the one hand, and change in suicide rates on the other. A counter-argument is that socio-political, economic, and cultural does not happen overnight. In contrast, with some of the countries we have studied (particularly those with rising rates), the turnaround in suicide rates occurred within 2-3 years.

So let us return to a question raised at the beginning. If at this point we have reached a conclusion that strategies work, more or less, 'can national strategies from other countries inform further strategic planning for Australia?' Taking into account cultural and historical differences between countries are there, as it were, some 'universal truths'? Conversely, are there some parts of strategies that need to be considered for Australia to enhance our own suicide prevention strategy?

Overall, it would appear from our reading that the best national strategies have a clear framework, explicitly stated. Within this there are broad goals, usually consistent with our best understanding of international research and wisdoms in the prevention of suicidal behaviour. For each of the goals, there are clearly stated outcomes, and these may be in the form of targets.

The best strategies take a nation-wide approach. They aim to provide a communication program to the whole population, with education targeted at all relevant groups. In particular there is specific education for all groups defined as 'gatekeepers'. There is an attempt to both improve existing services that may have to deal with suicidal people, as well as the linkages with the community in general. In addition, there is an attempt to provide a critical mass of clinical services with relevant and sufficient highly trained professionals at all levels.

---

The best strategies address the issue of access to means. This is true of Finland in particular. In addition, Australia was fortunate in that gun control (1996) almost coincided with the emergence of the strategies (from 1995), and has clearly contributed to Australian changes in suicide rates. The United States has not yet gone down this road, and 57% of their 30,000 suicides per annum continue to be from firearms. The US strategy is one of the most comprehensive and explicit documents, yet so far there has not been consistent change in suicide rates. But means are not only to do with guns, and the best strategies have considered barriers on high buildings and bridges, constraints on common poisons such as paracetamol, and suitable changes to reduce lethal emissions from the exhausts of cars.

The best strategies are clear on contributions to suicide from illicit drugs and from alcohol. In particular, the Nordic countries seem to have incorporated alcohol controls into their strategies, or at least developed strong links between different strategies.

Several other points are worth making. Some countries have decided on specific targeted reductions in suicide, and many might think this is risky. England and Wales do have such a target, and while they struggle to meet the target, they produce annual reports that are explicit about a number of matters, including how close they are to reaching the target. This may be a two-edged sword, on the one hand leading to criticism of government for not yet achieving a goal, but it also may very well help with public perceptions, and the public ownership of, and commitment to, suicide prevention. As we noted in the Introduction this may lead to improved help-seeking.

The Canadian experience, and New Zealand's strategy both developed specific strategies and programs for their Indigenous populations, and these would appear to have been successful. Australia should consider development of a national strategy and program for Aboriginal Australians, rather than the program based funding which has occurred to date.

---

Finally, we in Australia need to continue to struggle to evaluate every single program in order to contribute to International research. We do have one of the more comprehensive strategies of suicide prevention, but our evaluations are still at a lowly level from the scientific point of view. We need to better understand just what combination of programs seems to work best, and this might demand some form of large-scale community comparison study. We also need to better understand how specific programs achieve their results as part of the whole strategy.

Returning to the Guo & Harstall (2004) report, we note the first sentence of their Summary: "Suicide is a serious public health problem in the European Region, where rates vary from about 40 per million people (in Greece) to about 400 per million (in Hungary)." We would write this as 4 per 100,000 and 40 per 100,000 respectively to compare with the current overall rate in Australia (8 per 100,000). Nevertheless, this sentence encapsulates one of the dilemmas in suicide prevention, often seen in other reports. We repeatedly ask "Why is X country's rate so high? What are the contributing factors? Can we better understand Risk Factors from a study of these high suicide rate countries?" Perhaps what we should be asking is "Why is Greece's suicide rate so low (or for that matter Italy's or a number of other countries whose rates are traditionally (and genuinely) low)? What contributes to such consistently low rates? What are they doing so well, over so many years? What are the protective factors that might be adapted to the culture of Australia?" This line of questioning may be very important for Australia given the fact that so many Australians immigrated from Greece and Italy. The general point from this piece of the discussion is that in general in developing the Australian Suicide Prevention Strategy further we would do well to focus more on what works, and adopt it, adapt it to our conditions, and enhance it in any way we can (and then evaluate it). In general we might do well to move even more to a protection based strategy. Since the early reviews of risks for suicide (1994), we have done well to address them. But Protective Factors are an area that still needs to be explored in more depth, we need to enrich our current programs with strategies that contribute to protective

factors. Then we need to evaluate them, their contribution alone, and their contribution as part of an holistic ongoing strategy to prevent suicide in Australia.

---

## References

- Associate Minister of Health. 2005. A Life Worth Living: New Zealand Suicide Prevention Strategy: Consultation document. Wellington: Ministry of Health and Ministry of Youth Development.
- Associate Minister of Health. 2006. New Zealand Suicide Prevention Strategy 2006-2016. Wellington: New Zealand
- Beautrais A., 2000. Risk factors for suicide and attempted suicide among young people. A report prepared for the National Health and Medical Research Council 1998. Canberra: National Health and Medical Research Council.
- Beautrais, A., 1998. Review of the Evidence: In Our Hands - The New Zealand Youth Suicide Prevention Strategy. Ministry of Health, Wellington, New Zealand. ISBN 0-478-09132-x (Downloaded 17.11.09) <http://www.moh.govt.nz>
- Benichou, J., 2001. A review of adjusted estimators of attributable risk. *Statistical Methods in Medical Research*, 10, 195-216.
- Brown, G., Ten Have, T. & Cook, M., 2005. Cognitive Therapy for the prevention of suicide attempts. *Journal of the American Medical Association*, 294: 563-70.
- Burgess P, Pirkis J, Jolley D, Whiteford H, Saxena S. Do nations' mental health policies, programs and legislation influence their suicide rates? An ecological study of 100 countries. *Australian and New Zealand Journal of Psychiatry*. 2004 Nov-Dec; 38(11-12):933-9.
- Department of Health (1999a) Saving Lives: Our Healthier Nation. London: The Stationery Office. UK
- Department of Health (2002). National Suicide Prevention Strategy for England. London: The Stationery Office. UK
- Fitzpatrick, A., Brown, I., Stanton, T., Dowden, A. & Gomes, A, 2004. Evaluation of the New Zealand Youth Suicide Prevention Strategy. Conference presentation. (Downloaded 11.11.09). <http://www.aes.asn.au/conferences/2004/FR13-Fitzpatrick,%20A.pdf>
- Guo B., Harstall C., 2004. For which strategies of suicide prevention is there evidence of effectiveness? Copenhagen, WHO Regional Office for Europe (Health Evidence Network report [accessed 19.10.09]; <http://www.euro.who.int/Document/E83583.pdf>).
- Gunnell D., Frankel S., 1994. Prevention of suicide: aspirations and evidence. *British Medical Journal*, 308:1227-1233.

---

Isaacson, G., 2000. Suicide Prevention – A Medical Breakthrough? *Acta Psychiatrica Scandinavica*, 102: 113-117.

Kaga, M., Takeshima, T. & Matsumoto, T., 2009. Suicide and its prevention in Japan. *Legal Medicine*, 11: S18-S21.

Kapusta, N, Niederkrotenthaler, T, Etzersdorfer, E et al., 2009. Influence of psychotherapist density and antidepressant sales on suicide rates. *Acta Psychiatrica Scandinavica*, 119: 236-242.

Knox, K., Litts, D., Talcott, G., Feig, J & Caine, E., 2003. Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the United States Air Force: cohort study. *British Medical Journal*, 327:1376-1380.

Knox, K. & Caine, E., 2006. Strategies to Prevent Suicide. *Journal of the American Medical Association*, 295:1515-1516

Krysinska, K. & Martin, G., 2009. Balancing the struggle to prevent and evaluate; application of population attributable fraction and preventable fraction to suicide prevention research. *Suicide and Life-threatening Behavior*. 39:5, 548-557.

Krysinska, K., Martin G. & Sheehan N., 2009. Identity, Voice, Place: A Framework for Suicide Prevention for Indigenous Australians in Queensland based on a Social and Emotional Wellbeing Approach. The University of Queensland (downloadable from <http://www.suicidepreventionstudies.org/index.html>)

Lawson-Te Aho, K., 1998. A Review of the Evidence: A Background Document to Support Kia Piki Te Ora O Te Taitamariki. Te Puni Kōkiri PO Box 3943, Wellington. (Downloaded 17.11.09)  
<http://www.moh.govt.nz>

Li, Z., Page, A., Martin, G. & Taylor, R., yet to be published. Attributable risk of psychiatric and socio-economic factors for suicide. *Social Science and Medicine* (under review)

Living Is For Everyone (LIFE) Framework, 2007. Australian Government Department of Health and Ageing. ISBN: 1-74186-296-5 ; Online ISBN: 1-74186-297-3; Publications Number: P3 -2060. Commonwealth of Australia, Canberra. (downloaded 18.11.09)  
[http://www.livingisforeveryone.com.au/ignitionSuite/uploads/docs/LIFE\\_framework-web.pdf](http://www.livingisforeveryone.com.au/ignitionSuite/uploads/docs/LIFE_framework-web.pdf)

Mann, J., Apter, A., Bertolote, J., Beautrais, A., et al., 2005. Suicide Prevention Strategies: A Systematic Review. *Journal of the American Medical Association*. 16:294, 2064-2074.

Mehlum, L. & Reinholdt, Nils., 2001. The Norwegian Plan for Suicide Prevention Follow-up project 2000-2002: Building on positive experiences. *Norwegian Journal Suicidology*, no. 1.



- Ministère de l'Emploi et de la Solidarité, 2000. Stratégie nationale d'actions face au suicide 2000/2005. Bureau de la Santé Mentale, Secrétariat d'Etat à la Santé et aux Handicapés [http://www.sante-sports.gouv.fr/IMG//pdf/strategie\\_nat.pdf](http://www.sante-sports.gouv.fr/IMG//pdf/strategie_nat.pdf) (accessed 3.11.09)
- Ministère de la Santé et des Solidarités, 2006. Evaluation de la Stratégie nationale d'actions face au suicide 2000-2005. <http://www.sante-sports.gouv.fr/IMG//pdf/synthese.pdf> (accessed 3.11.09)
- Ministry of Health. 2008. New Zealand Suicide Prevention Action Plan 2008–2012: The Summary for Action. Wellington: Ministry of Health.
- Motohashi, Y., Kaneko, Y. & Sasaki, H., 2004. Community Based Suicide Prevention Program in Japan using a Health Promotion Approach. *Environmental Health & Preventive Medicine*, 9, 3-8.
- Mrazek PJ, Haggerty RJ, eds., 1994. Reducing risks for mental disorders. *Frontiers for preventive intervention research*. Committee on Injury Prevention and Control Division of Health Promotion and Disease Prevention, Washington, DC: Institute of Medicine.
- Nationales Suizidpräventionsprogramm für Deutschland, 2004. Deutsche Gesellschaft für Suizidprävention. (<http://suizidpraevention-deutschland.de/>)
- Planning Committee for Health Japan 21, 2000. National Health Care Campaign for the 21<sup>st</sup> Century (Kenko Nippon 21). Japan Health Promotion and Fitness Foundation, Tokyo.
- Proposal for a National Suicide Prevention Strategy for Greenland, 2004. [http://www.peqqik.gl/upload/rapport\\_-\\_engelsk.pdf](http://www.peqqik.gl/upload/rapport_-_engelsk.pdf) (accessed 31.10.09)
- Health Service Executive, 2005. Reach Out: The Irish National Strategy for Action on Suicide Prevention 2005-2014. ISBN 0-9551181-0-7
- Reseland, S., Bray, I., Gunnell, D., 2006. Relationship between antidepressant sales and secular trends in suicide rates in the Nordic countries. *British Journal of Psychiatry*, 188: 354-8.
- Scottish Executive, 2002. Choose Life: A National Strategy and Action Plan to Prevent Suicide in Scotland. Health Scotland. <http://www.chooselife.net/home/Home.asp> (accessed 5.11.09)
- Simon, G., Savarino, J., Operskalski, B. & Wang, P., 2006. Suicide Risk during antidepressant therapy. *American Journal of Psychiatry*, 163:41-47.
- Smith, G, Branas, C. & Miller, T., 1999. Fatal non-traffic injuries involving alcohol: A meta-analysis. *Annals of Emergency Medicine*. 33(6):659-68.
- Sørås, I., 2000. The Norwegian Plan for Suicide Prevention 1994-1999. Evaluation findings. *Norwegian Journal Suicidology*, no. 3.

---

Stakes, 1993. Suicide can be prevented. Fundamentals of a target and action strategy.

Itsemuirhien ehkaisyprojekti, Stakes: Helsinki

Upanne, M., Hakanen, J. & Rautava, M., 1998. Can Suicide be prevented? The Suicide Project in Finland 1992-1996: Goals, Implementation and Evaluation. National Research and Evaluation Centre for Welfare and Health, Helsinki, Finland.

United Nations, 1996. Prevention of Suicide: Guidelines for the Formulation and Implementation of Comprehensive National Strategies for Prevention of Suicidal Behaviours and the Provision of Supportive and Rehabilitative Services to Persons at Risk and other Affected Persons. United Nations, New York.

U.S. Dept. of Health and Human Services, 2001. National strategy for suicide prevention: Goals and objectives for action. Public Health Service, Rockville, MD

World Health Organisation, 2002. Suicide Prevention in Europe: The WHO European monitoring survey on national suicide prevention programmes and strategies. WHO Regional Office for Europe, Copenhagen. <http://www.euro.who.int/document/E77922.pdf> (accessed 31.10.09)

WHO Briefing paper, 2007. WHO European Ministerial Conference on Mental Health, Helsinki, 12–15 January 2005. World Health Organisation Regional Office for Europe, Helsinki.

World Health Organisation, 2007. Methods of Suicide: International suicide patterns derived from the WHP mortality database. Vladeta Jdacic-Gross et al. (accessed 19.10.09)

<http://www.who.int/bulletin/volumes/86/9/07-043489/en/print.html>

World Health Organisation, 2009. World Suicide Prevention Day Media Release: Suicide Prevention (Supre) (accessed 19.10.09)

[http://www.who.int/mental\\_health/prevention/suicide/suicideprevent/en](http://www.who.int/mental_health/prevention/suicide/suicideprevent/en)

## APPENDIX: Suicide Rate Changes

**Table 2: Percentage change suicide rates Finland pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	43.9	7.1 (4.9--24.5)	<0.001	-18.7 (-24.5--12.4)	0.066
Females, all ages	11.1	11.4 (1.0-22.9)	0.000	-4.6 (-11.5-2.8)	0.167
Males, 15-24 years	27.9	32.1 (-6.0-85.7)	0.001	8.8 (-16.2-41.4)	0.024
Females, 15-24 years	6.3	10.0 (-21.1-53.3)	0.033	26.3 (1.1-57.7)	0.018

**Table 3: Percentage change suicide rates Norway pre- & post-strategy implementation,**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	18.5	11.5 (0.2-24.0)	0.047	4.3 (-4.5-13.9)	0.354
Females, all ages	6.1	18.1 (3.7-34.4)	0.012	15.5 (3.9-28.4)	0.008
Males, 15-24 years	13.2	64.3 (13.4-137.9)	0.009	65.8 (21.6-126.2)	0.001
Females, 15-24 years	3.3	67.2 (10.8-152.3)	0.014	105.0 (48.7-182.7)	<0.001

**Table 4: Percentage change suicide rates Australia pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	21.5	12.9 (3.6-23.0)	0.006	-2.5 (-10.2-5.8)	0.540
Females, all ages	8.0	-26.1 (-33.4--17.9)	<0.001	-31.9 (-38.1--25.0)	<0.001
Males, 15-24 years	16.5	62.5 (26.0-109.7)	<0.001	14.7 (-12.6-50.6)	0.324
Females, 15-24 years	4.4	26.3 (-0.1-59.7)	0.051	11.6 (-11.2-40.4)	0.347

**Table 5: Percentage change suicide rates Sweden pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	30.7	-30.9 (-37.3--24.0)	<0.001	-35.0 (-41.1--28.4)	<0.001
Females, all ages	11.7	-27.0 (-33.9--19.3)	<0.001	-28.9 (-35.7--21.5)	<0.001
Males, 15-24 years	14.3	-15.7 (-43.3-25.4)	0.399	-5.3 (-34.7-37.3)	0.773
Females, 15-24 years	6.2	-12.8 (-38.6-23.9)	0.446	9.0 (-20.3-49.2)	0.589

**Table 6: Percentage change suicide rates New Zealand pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	20.0	17.8 (5.3-31.8)	0.004	10.4 (-4.2-27.3)	0.173
Females, all ages	8.5	-7.8 (-19.3-5.3)	0.231	-3.7 (-17.9-13.0)	0.645
Males, 15-24 years	19.0	63.7 (14.7-133.6)	0.007	45.4 (-8.3-130.4)	0.111
Females, 15-24 years	5.0	110.8 (53.1-190.2)	<0.001	105.5 (38.6-204.8)	0.000

**Table 7: Percentage change suicide rates France pre- & post-strategy implementation,**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	31.0	-2.9 (-17.0-13.6)	0.712	-7.8 (-34.4-29.7)	0.641
Females, all ages	11.1	-12.2 (-18.8--5.0)	0.001	-16.1 (-29.2--0.6)	0.042
Males, 15-24 years	11.5	1.7 (-29.4-46.7)	0.927	-15.2 (-63.7-98.3)	0.704
Females, 15-24 years	4.2	-18.3 (-38.1-7.8)	0.153	-25.5 (-59.9-38.4)	0.351

**Table 8: Percentage change suicide rates United States pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	22.0	-10.4 (-17.2--3.0)	-	-	-
Females, all ages	6.3	-24.5 (-30.2--18.5)	<0.001	-	-
Males, 15-24 years	16.3	-0.1 (-23.7-30.7)	0.993	-	-
Females, 15-24 years	3.7	-14.9 (-32.3-7.0)	0.168	-	-

**Table 9: Percentage change suicide rates England & Wales pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	13.9	-22.1 (-29.9--13.6)	<0.001	-25.6 (-40.9--6.5)	0.011
Females, all ages	7.1	-55.6 (-61.8--48.4)	<0.001	-61.6 (-73.0--45.4)	<0.001
Males, 15-24 years	7.2	-5.0 (-34.2-37.2)	0.785	-16.0 (-62.9-90.4)	0.677
Females, 15-24 years	2.3	-22.0 (-43.5-7.5)	0.129	-44.6 (-75.2-24.1)	0.151

**Table 10: Percentage change suicide rates Scotland pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	15.2	28.2 (14.8-43.2)	<0.001	13.6 (14.8-43.2)	0.317
Females, all ages	6.8	-12.6 (-22.4--1.5)	0.028	-21.2 (-40.0-3.4)	0.085
Males, 15-24 years	10.3	54.5 (2.1-133.8)	0.040	70.2 (-25.3-287.8)	0.206
Females, 15-24 years	3.1	116.7 (57.9-197.3)	<0.001	71.6 (-18.0-259.2)	0.152

**Table 11: Percentage change suicide rates Japan pre- & post-strategy implementation**

	Rate per 100,000 prior to strategy	0-5 years post strategy		5+ years post strategy	
		Percentage change in suicide rate (95%CI)	p value	Percentage change in suicide rate (95%CI)	p value
Males, all ages	27.9	21.6 (11.1-33.1)	<0.001	17.3 (2.3-34.6)	0.022
Females, all ages	16.3	-29.5 (-37.3--20.7)	<0.001	-29.6 (-41.0--16.0)	<0.001
Males, 15-24 years	21.6	-26.7 (-58.1-28.1)	0.275	-14.8 (-63.3-98.2)	0.711
Females, 15-24 years	14.1	-44.7 (-72.3-10.5)	0.093	-32.1 (-75.6-88.9)	0.458

**Table 12: Percentage change in suicide rates in Canada, all ages**

	Overall average rate per 100,000	Last 5 years	
		Percentage change in suicide rate (95%CI)	p value
Males, all ages	21.6	-13.3 (-27.9-4.4)	0.132
Females, all ages	6.5	-10.3 (-24.7-7.0)	0.228
Males, 15-24 years	19.6	-13.6 (-56.3-70.6)	0.674
Females, 15-24 years	4.3	10.6 (-36.3-91.8)	0.721

**Table 13: Percentage annual average change in suicide rates pre- & post-strategy implementation, all ages (1950-2007)**

	Pre-strategy	Period prior to implementation*	Post-strategy	p value	p value*
<i>Males</i>					
Finland	1.1 (0.8-1.4)	0.8 (-0.1-1.8)	-3.4 (-4.3--2.6)	<0.001	<0.001
Norway	2.3 (2.1-2.6)	1.1 (-0.1-2.3)	-1.3 (-2.7-0.1)	<0.001	0.001
Australia	0.3 (0.0-0.6)	1.0 (-0.9-3.1)	-2.3 (-4.1--0.5)	0.013	0.014
Sweden	-0.4 (-0.6--0.2)	-3.2 (-4.8--1.6)	-1.3 (-3.0-0.5)	0.546	0.110
New Zealand	1.4 (1.1-1.7)	1.5 (-2.3-5.4)	-2.2 (-5.6-1.4)	0.040	0.166
France	0.5 (0.3-0.7)	-1.9 (-7.2-3.7)	-1.0 (-4.5-2.6)	0.709	0.784
United States	0.2 (0.0-0.4)	-3.2 (-8.0-1.7)	-0.5 (-5.2-4.4)	0.847	0.423
England and Wales	-0.7 (-0.9--0.5)	-0.4 (-4.7-4.0)	-0.8 (-4.8-3.3)	0.911	0.888
Scotland	1.7 (1.4-1.9)	1.5 (-3.4-88.7)	-3.0 (-7.3-1.4)	0.098	0.179
Japan	-0.5 (-0.7--0.2)	10.1 (5.5-14.8)	-0.1 (-2.9-2.8)	0.973	<0.001
Canada	-	-	-		
Total	0.6 (-0.1-1.2)	0.5 (-1.2-2.2)	-2.0 (-2.8--1.1)	<0.001	0.027
<i>Females</i>					
Finland	1.0 (0.7-1.4)	1.0 (0.0-2.1)	-1.7 (-2.6--0.8)	<0.001	<0.001
Norway	3.0 (2.7-3.4)	0.6 (-0.8-2.0)	0.0 (-1.7-1.7)	0.013	0.553
Australia	-1.0 (-1.3--0.7)	-1.1 (-2.9-0.7)	-1.0 (-2.6-0.6)	0.959	0.976
Sweden	0.4 (0.2-0.6)	-3.1 (-4.7--1.5)	0.1 (-1.7-2.0)	0.815	0.011
New Zealand	0.0 (-0.4-0.3)	2.7 (-1.4-7.1)	-0.5 (-4.5-3.8)	0.809	0.272
France	0.8 (0.7-1.0)	-3.1 (-6.8-0.7)	-0.9 (-3.7-2.1)	0.686	0.348
United States	-0.6 (-0.7--0.4)	-2.8 (-6.5-1.0)	1.9 (-2.3-6.2)	0.529	0.101
England and Wales	-2.3 (-2.4--2.1)	-1.0 (-4.6-2.8)	-1.8 (-5.2-1.8)	0.941	0.779
Scotland	0.1 (-0.1-0.4)	-0.6 (-5.7-4.7)	-4.2 (-9.5-1.5)	0.287	0.370
Japan	-1.7 (-2.0--1.5)	3.8 (-0.6-8.5)	-0.4 (-3.2-2.5)	0.630	0.107
Canada	-	-	-		
Total	-0.1 (-0.9-0.8)	-0.5 (-1.8-0.9)	-1.0 (-1.6--0.4)	0.129	0.351

\* Annual average change is based on a comparative period immediately prior to the implementation of the national strategy, and corresponds to the period for which a strategy in a given country has been implemented.

## NATIONAL SUICIDE PREVENTION STRATEGIES

Graham Martin OAM, MD, FRANZCP, DPM & Andrew Page, PHD, The University of Queensland

Table 14: Percentage annual average change in suicide rates pre- and post-strategy implementation, youth 15-24 years

	Pre-strategy	Period prior to implementation*	Post-strategy	p value	p value*
<i>Males</i>					
Finland	3.1 (2.2-4.1)	1.5 (-1.1-4.3)	-2.4 (-5.3-0.6)	0.002	<0.001
Norway	5.8 (4.9-6.8)	2.0 (-1.1-5.2)	-0.7 (-3.9-2.6)	<0.001	0.243
Australia	3.3 (2.6-4.1)	2.8 (-2.0-7.9)	-5.4 (-10.2--0.4)	<0.001	0.019
Sweden	1.1 (0.2-1.9)	-5.1 (-11.2-1.4)	1.6 (-5.4-9.2)	0.899	0.171
New Zealand	5.6 (4.8-6.4)	0.8 (-5.3-7.3)	-3.7 (-10.0-3.1)	0.005	0.336
France	2.2 (1.5-3.0)	-2.0 (-20.7-21.2)	-2.6 (-15.3-11.9)	0.561	0.956
United States	2.3 (1.7-2.8)	-4.1 (-14.3-7.4)	-0.6 (-11.9-12.2)	0.687	0.674
England and Wales	1.8 (1.1-2.5)	-3.0 (-18.3-15.2)	-5.0 (-21.5-15.1)	0.428	0.874
Scotland	4.7 (4.0-5.4)	8.0 (-6.8-25.1)	-0.2 (-13.4-15.0)	0.444	0.453
Japan	-3.2 (-4.0--2.5)	10.6 (-9.4-34.9)	5.0 (-10.5-23.1)	0.379	0.692
Canada	-	-	-		
Total	2.6 (1.1-4.2)	1.3 (-0.4-3.0)	-2.0 (-3.7--0.2)	<0.001	0.098
<i>Females</i>					
Finland	1.6 (0.7-2.6)	1.2 (-2.1-4.6)	2.1 (-0.8-5.2)	0.781	0.978
Norway	5.0 (3.6-6.4)	3.3 (-0.7-7.5)	2.4 (-0.9-5.8)	0.312	0.737
Australia	1.2 (0.4-2.0)	0.7 (-4.2-5.9)	-1.7 (-5.1-1.8)	0.215	0.428
Sweden	0.6 (-0.1-1.4)	-3.3 (-8.9-2.6)	4.3 (-1.1-9.9)	0.370	0.062
New Zealand	4.2 (3.3-5.2)	13.7 (5.4-22.8)	-3.1 (-10.5-4.7)	0.055	0.004
France	0.7 (0.2-1.3)	-5.5 (-18.3-9.2)	-1.9 (-8.9-5.8)	0.717	0.623
United States	0.9 (0.4-1.4)	-4.9 (-8.9--0.7)	5.6 (-0.4-12.1)	0.541	0.005
England and Wales	0.0 (-0.6-0.6)	-1.4 (-15.1-14.6)	-6.9 (-17.8-5.4)	0.415	0.565
Scotland	2.4 (1.6-3.1)	-0.3 (-12.4-13.3)	-12.4 (-24.4-1.5)	0.025	0.197
Japan	-4.3 (-4.9--3.6)	7.8 (-11.5-31.2)	8.7 (-4.1-23.3)	0.222	0.938
Canada	-	-	-		
Total	1.2 (-0.2-2.5)	0.8 (-2.4-4.1)	1.0 (-1.4-3.4)	0.0935	0.217

\* Annual average change is based on a comparative period immediately prior to the implementation of the national strategy, and corresponds to the period for which a strategy in a given country has been implemented.

## NATIONAL SUICIDE PREVENTION STRATEGIES

Graham Martin OAM, MD, FRANZCP, DPM & Andrew Page, PHD, The University of Queensland