

SUICIDE IN MODERN IRELAND  
NEW DIMENSIONS, NEW RESPONSES

**International Prevention Programmes**  
Friday Afternoon 12 November

**NATIONAL STRATEGIES FOR SUICIDE PREVENTION**

**Presenter:** **J. John Mann, MD**  
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College of Physicians & Surgeons of Columbia University

**Introduction:** **Professor Kevin Malone**

**Prof Kevin Malone:** I now want to move on to introduce you to Prof. John Mann who is going to speak on International Prevention Programmes. He is currently the President of the American Foundation for Suicide Prevention; Professor of Psychiatry at Columbia University; Director of the Conte Research Centre for the Study of Suicide and Suicidal Behaviour in New York State Psychiatric Institute and Columbia University; he is on several research advisory bodies, nationally and internationally and has really dedicated his career to advancing the study of suicide and suicidal behaviour from a wide variety of perspectives. He turned his attention in more recent years as well as everything else to understanding international prevention programmes and is part of a very vocal international lobby to really accelerate and invest in prevention programmes that seem to work. I was so delighted when he agreed to come to Dublin to address the conference. He flew in this morning at some ungodly hour but tells me he got a coupe of hours sleep and is willing and ready to get up with his presentation. Please welcome Prof. John Mann.

**John Mann:** Why would you bring in someone from the US who is actually from Australia to advise Ireland on how to conduct a Suicide Prevention Programme?

One of the reasons that this is a timely meeting that you are having here organised in this wonderful way by Kevin Malone and his colleagues is that recently the American Foundation of Suicide Prevention sponsored a workshop, Critical Review of National Suicide Prevention Strategies, Salzburg 2004, where we spent five days reviewing National Suicide Prevention Plans all around the world.

Here are the participants in the meeting, and you can see Dr Malone was the representative from Ireland.

<i>Participants</i>	
•Apter A, M.D. (Israel)	•Phillips M, M.D. (China)
•Bertolote J, M.D. (World Health Organization)	•Rutz W, M.D. (Sweden)
•Beautrais A, Ph.D. (New Zealand)	•Rihmer Z, M.D., PhD, DSc. (Hungary)
•Hass A, Ph.D. (USA)	•Schmidtke A, M.D. Ph.D. (Germany)
•Hegerl U, M.D. (Germany)	•Shaffer D, M.D. (USA)
•Hendin H, M.D. (USA)	•Silverman M, M.D. (USA)
•Lonnqvist J, M.D. (Finland)	•Takahashi Y, M.D. (Japan)
•Malone K, M.D. (Ireland)	•Varnik A, M.D. (Estonia)
•Mann JJ, M.D. (USA)	•Wasserman D, M.D. (Sweden)
•Marusic A, M.D. (Slovenia)	•Yip P, Ph.D. (Hong Kong)
•Mehlum L, M.D. (Norway)	
•Patton G, M.D. (Australia)	

These are the countries that already have Suicide Prevention Plans:

- Finland
- Norway
- Sweden
- Greenland
- Denmark
- Australia
- England
- Japan
- USA
- New Zealand (for youth)
- Scotland
- Germany

And these are the countries that are trying to develop Suicide Prevention Plans and one of them is Ireland.

- Malaysia
- New Zealand (for adults)
- Ireland
- Slovenia
- Estonia
- Hong Kong
- Israel
- China

Now, there may be others but we don't know about them at this point. The key areas that Suicide Prevention Plans have in common include the four following areas – now you've heard some of this already, so this will be a bit of a refresher:

- Education and Awareness;
- The treatment of psychiatric disorders;
- Restricting access to lethal means;
- Responsible media reporting of suicide.

Before you can really understand why one would choose these areas, you need a quick primer on what's going on in suicide.

### **Suicidal Behaviour**

- Is not a normal response to stress.
- It is a complication of psychiatric illness in >90% and social stresses in the vulnerable person (demonstrated by psychological autopsies).
- The commonest illness associated with suicide or suicide attempts is untreated recurrent unipolar depression.
- Psychiatric illness is primarily a medical problem and central to any plan to prevent suicide.

First of all, suicide is not a normal response to stress. The general view is completely incorrect. The notion is that suicide is an understandable response to stress. That's not correct, particularly social stress. It's a complication of psychiatric illness in practically every case. And the social stressors aren't important except that they are when they affect people with a psychiatric illness and people who are particularly vulnerable to those social stressors.

So social stressors don't have the same impact on everybody. They have a different impact on some people compared to others. Just think of cancer. The same cancer will kill one person rapidly and another person will survive e.g. Lance Armstrong.

There are obviously differences in the resilience of different individuals, so these play important roles not only in how they cope with a psychiatric illness but in terms of the determining their risk for suicide.

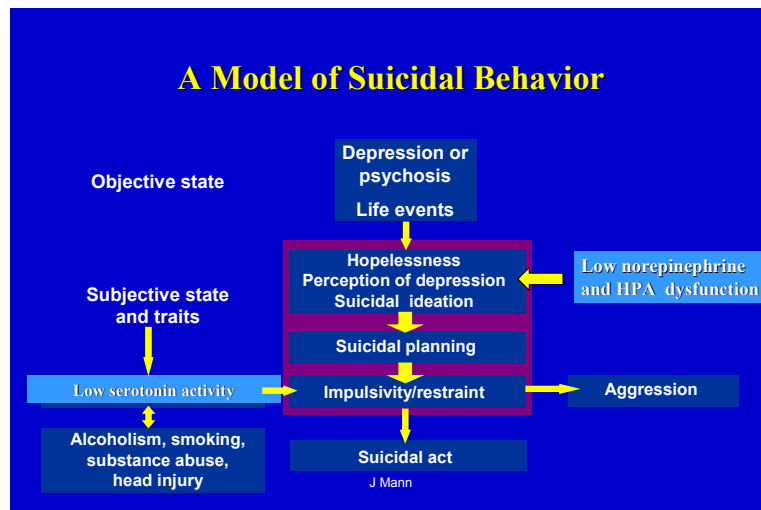
How do we know that psychiatric illness is so important and social factors are more adjunctive, if you like, in terms of suicide risk? Well we know this from dozens of studies interviewing thousands of individuals. Go and find out why people really died. When you do that, you find out that a critical element is that they have an untreated psychiatric illness and then you have factors that are more like a straw that breaks the camel's back and that's where social stressors come into play.

### **Relationship to Psychiatric Illness**

- Psychological autopsies in completed suicides confirm that over 90% have a diagnosable psychiatric illness.
- Life-time mortality due to suicide in previously hospitalised patients are high: unipolar depression (15%); bipolar disorder (15-20%); alcoholics (18%); schizophrenics (10-15%); and borderline and antisocial personality disorders (5-10%).
- Co-morbidity increases risk.

So in our studies, what we've seen is that there is a difference between individuals who are at risk of suicide and people who are more resilient and at lesser risk. So if you take everybody who has a psychiatric illness, that doesn't automatically lead to suicide. Some people have a psychiatric illness and the chances of them killing themselves are extremely remote even with an illness that maybe very severe. That would be more like a Lance Armstrong type of person with cancer. Then there are other people who'll have a psychiatric illness but that same illness of comparable severity will produce in them a greater degree of hopelessness. They will perceive the depression as more

severe; they will experience more suicidal ideation and if you ask they will report (as Kevin has published in an important paper), fewer reasons for living because in their perception they see fewer reasons for living. We have bundled these things together and we have called them pessimism. Those individuals, who are more pessimistic, the same severity of psychiatric illness places them at greater risk but that's not the only sort of pre-disposing factor that we have found in people. Another pre-disposing factor is that they're also the ones who are at risk of suicidal behaviour are also more impulsive. The sort of individual that's more likely to act on powerful feelings. So then you have a combination of a psychiatric illness which makes you feel badly, that in the vulnerable individual, those individuals feel worse than other individuals, subjectively. So they feel more suicidal ideation; they feel more hopeless; they see less chance of getting better with fewer reasons for living and at the same time they're more likely to act on powerful feelings. So they both have more powerful feelings and they're less able to resist those feelings. Now, it's good to be decisive under certain circumstances but when the circumstances are that you want to kill yourself because you feel hopeless it's not a good idea to act on those feelings.



This is the model.

### Brain Activity after Serotonin Release Related to Suicide Attempt Behaviour

Just in case you think this all completely theoretical, if you take people and you put them in a cat scanner (and this is a study Kevin actually did a great deal of work on when he was with our group before returning to Ireland), you can actually visualise the activity of the brain and you can see that there are certain areas in the brain that are involved in the desire and the planning of suicide behaviour and in impulse control. Those areas show abnormalities in the test patients who have made suicide attempts and they actually reflect this very vulnerability that I have been talking about. The more lethal the suicidal behaviour manifested by those individuals, the bigger these abnormalities are in the brain. So you can actually see in the brain the functional change that goes along with these kinds of characteristics in these people.

### The Major Strategies for Suicide Prevention

Now that you understand a little bit about suicidal behaviour, let's talk about what we know about prevention and what works and what doesn't. I have already told you that most suicides occur in the context of a depression which is not treated. About 60% of suicides occur in people with a depressive illness of some sort and the vast majority of those are not being treated at all and many of those who are being treated are getting inadequate treatment.

- Improve awareness and education for public, doctors and gatekeepers: role of psychiatric illness and treatment
- Treatment: Medication and psychotherapy for psychiatric disorders
- Reduce availability of commonest methods
- Media reporting about suicide: stop encouraging suicide

So now you can see what our goals need to be. We have to improve the awareness and education for the public, doctors, and gatekeepers about the role of psychiatric illness and its appropriate treatment in suicide prevention. In terms of the treatment we have to teach the people who

deliver the treatment, what medications and what kinds of psychotherapy are likely to be most effective

- first for the psychiatric illness and
- second, and relatedly, for the prevention of suicide;
- third, we are not going to get to everybody or their not going to come for help, so we need to make it more difficult for people to kill themselves by reducing the availability of the commonest methods. As we have heard from the previous speaker, paracetamol is extremely lethal and making it harder for people to get enough paracetamol to kill themselves is important. In the US, Gun Control. We are going to talk about all of these in more detail. And of course the media, the media should stop encouraging suicide.
- Awareness and education.

In improving awareness of mental illness, as real and treatable, suicide is preventable, we have overcome in-built belief systems that exist and are deeply ingrained in society. We also have to reduce stigma to encourage treatment seeking and help reduce the shame and distress of families who have had suicides. In particular to increase treatment seeking, the group that resists treatment seeking the most are men and that is an important reason why men have a higher suicide rate than women. We have to confront and deal with attitudes that normalise suicide and present it as an acceptable or inevitable solution to social stress. Those attitudes reflect the stigma that underlies and undermines suicide prevention. That stigma says psychiatric illnesses are not real illnesses; that everything is due to social stress and social change and so on.

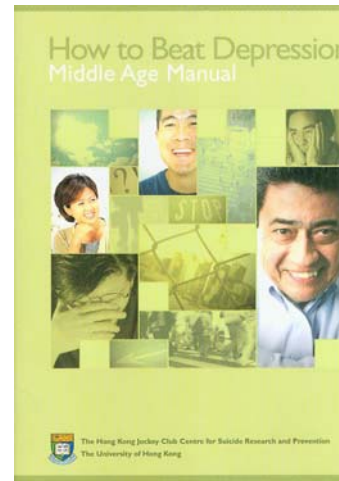
### Public Education & Awareness

Here are the kinds of posters and things that countries have engaged in.

#### USA



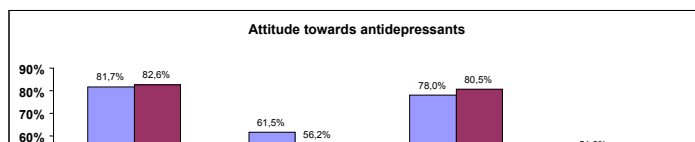
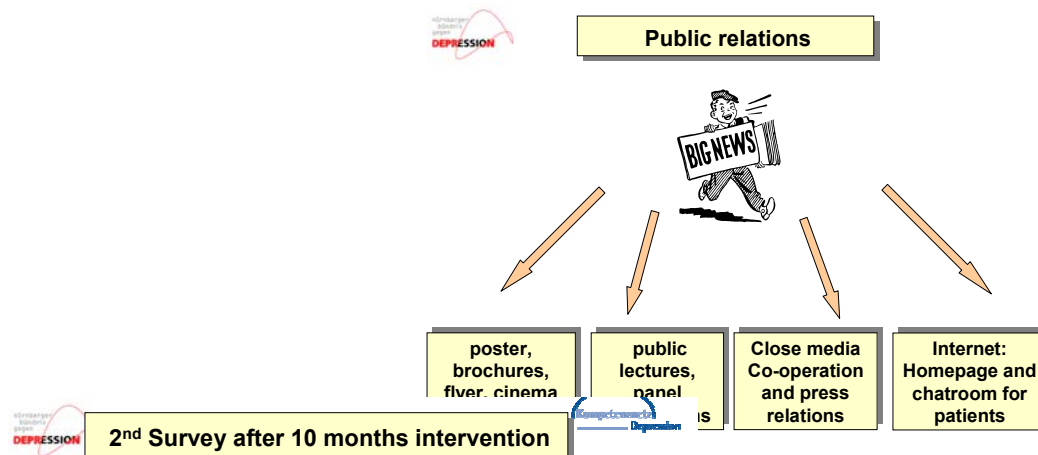
#### HONG KONG



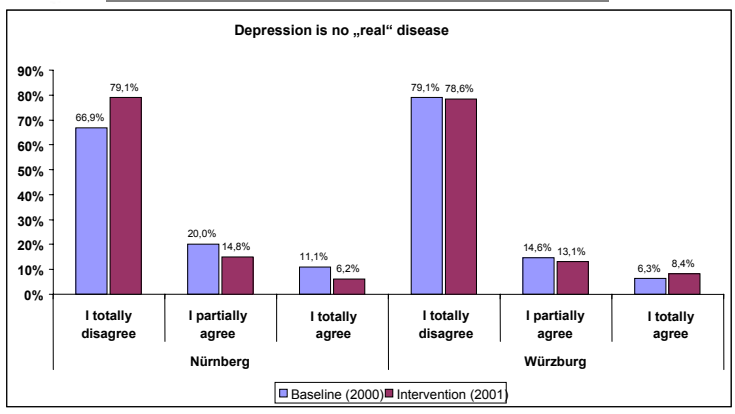
This is what the US has. You now see this in airports, billboards. They are real people, you may recognise some of these people and that's appropriate. Hong Kong - the same sort of thing, this going on all over the world.

In New Zealand and as we heard in Nuremburg, a very comprehensive programme of public education.

#### NUREMBURG



**2<sup>nd</sup> Survey after 10 months intervention**



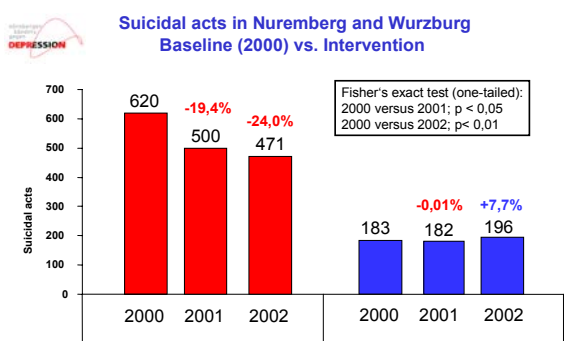
1,400 randomly selected persons have been interviewed in 2000 and 2001.

What's interesting by the way is that in Nuremberg where they did something that practically nobody else did, which was actually trying to measure the effect upon attitudes of their Suicide Prevention Programme, they don't find very dramatic effects.

**Nuremberg, Germany**

Decrease in the rates of suicidal acts by 24% compared to an increase of 7.7% in the control region.

Combination of Public education and GP education.



There are all these kinds of prejudices that anti-depressants are addictive. Look at the huge proportion of people who have these various prejudices. There was some improvement in Nuremberg, which was the control area that had all the education but not a very dramatic improvement in public attitudes. You can see here that depression is not a real illness and there was an increase from 66.9% to 79.9% thinking that that's not true so that a lot of people realise that depression may be a real illness so you don't see much improvement there but a little bit of

improvement. On the other hand, in Wurzburg there was no change at all. So they have some benefit. The real impact, I think, in that Nuremberg study probably was on the treatment side but I'm not sure.

### **New Zealand**

- Survey of public attitudes after 4 years of media campaign
- improvement in respondents awareness of mental illness
- decrease in negative or stigmatizing attitudes
- No assessment of behavioural changes

New Zealand has been doing the same thing, a very extensive campaign. They think there's been some improvement in responding to awareness of mental illness. Other countries have been busy spending a lot of money doing the same thing but they haven't measured the outcome so I find that entirely pointless. Would you have run a co-operation and not bother to try and figure out which activities in the co-operation are making money and losing money? Well here we are dealing with peoples lives. If you're going to spend a lot money doing things, find out if it works.

### **Primary Care**

- In developed nations GPs treat most adult depression and in developing nations often health care worker is only source of treatment.
- High level of contact with primary care practitioners by suicides – up to 83% within a year and 66% within a month of death. (Luoma et al. 2002, Andersen et al. 2000, Suominen et al. 2002).
- Educating general practitioners on recognition and treatment of depression.

Now one area which has been the most promising is educating GP's. In developed countries GP's treat most adult depression. Unfortunately, in developing nations it is often only a Health Worker and in countries like China there is next to no mental health services in the country. Only half the hospitals in Beijing use anti-depressants but there is a good reason for doing this. In developed Nations about 83% of people who are going to kill themselves see a GP within a year of dying and 66% within a month of death.

### **Screening for depression in primary care**

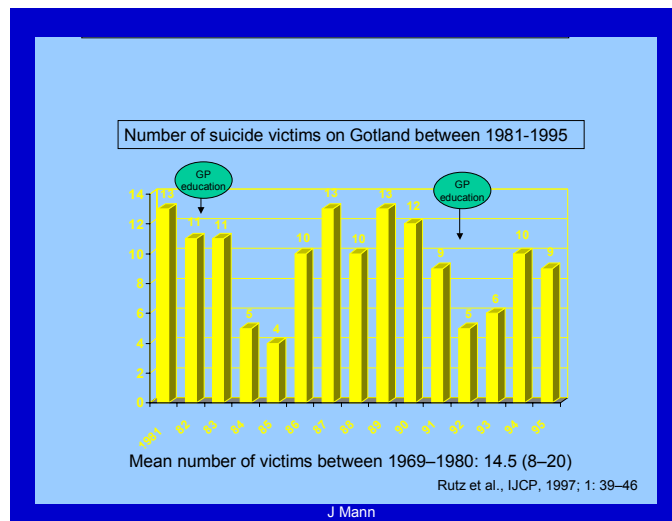
- Some improvement in detection and treatment – UK, Australia. (Hannaford et al. 1996, Naismith et al. 2001)
- Improvement, but faded after 12 months – Ireland. (Kelly 1998)
- No improvement in detection or treatment – Hampshire, Seattle. (Thompson et al. 2000, Lin et al. 2001)
- 2002 US Preventative Task Force Review – screening improves detection 10 – 47%. Effects on treatment mixed. (Pignone et al 2002)

So if the GP's were better at recognising depression and psychiatric illnesses and alcoholism and could engage the patient, so people have looked for ways of screening for depression and primary care and improving treatment. Some places have shown a benefit and others have not. There is a study here on Ireland but there seems to be some variability but in a few unique places where there was a very circumscribed number of GP's and you could really get a handle on the situation, the benefit of this strategy is obvious.

### **GP Education Projects**

- Gotland, Sweden – 1983/4. Two years after GP education 50% increase in antidepressant prescriptions and 60% fall in suicide rate. (Rutz et al 1989)
- Kiskunhalas, Hungary – 2000/3. 58% increase in antidepressants, 22% decline in suicide mortality in 3 years after intervention.

**Gotland Study:** First of all the Island of Gotland Island in Sweden - a very circumscribed area which had a very high suicide rate - two years after GP education there was a 50% increase in antidepressant prescriptions and a 60% fall in suicide. Now it was not a very attractive place to practice medicine so the GP's would rotate off the Island after two years and so the effect faded as the GP's who were educated left. Then they re-educated the next lot of GP's and the same benefit came back but this time they did it by focusing not only on general principles but they focused on detecting males who were depressed or who had alcoholism and needed help. The suicide rate in the first intervention was almost entirely benefited to female suicide. In the second intervention they halved the suicide rate in men as well.



**Hungarian Study:** We have been engaged in a programme in a place called Kiskunhalas in Hungary where the suicide rate is astronomical. It has the highest suicide rate in elderly people in the world. It is a poor rural area with a single central psychiatric facility, part of a general hospital and all the treatments are delivered by GP's, pretty much, except for a couple of psychiatrists in the hospital. There we educate the GP's and you can everybody engaged. There was a significant increase in anti-depressant prescription rates and a significant decrease in suicide mortality. So this really does work. That's the Gotland Study showing you the two effects of the educational interventions and you can see the dramatic drop in the suicide rate and then the return of suicide rates as the trained GP's rotate off the Island and the new GP's who aren't trained come in.

**Japan:** In Japan, and this I think this talk is very much about what your President was talking about, you have little bits of information all over the world and when you put it together it's much more compelling.

**Matsunoyama, Japan**

following GP education suicide rate in the elderly dropped from 434.6/100 000 in 1985, to 123.1/100 000 in 1996. (Takahasi et al 1998)

There is a village in Japan Matsunoyama and that village had mainly older people in it. When they came in from the local university and did an educational campaign on depression recognition in this village, the suicide rate dropped from a massive 434.6 per 100,000. Do you know how much that is? In the US the suicide rate is approximately just under 11 per 100,000.

In this place Kiskunhalas that I was talking about, the suicide rate runs around 50-60 per 100,000. They have obviously had an enormous effect in this village. Here it is so you can see it relation to were Tokyo is. This village is very isolated. In winter it's cut off by snow. It had one GP, next to no health care services, was cut-off from the rest of the world, with mostly older people who had retired, their working lives were over. They were cut-off from their families and it was a pretty despondent kind of place. However the reason they were killing themselves was untreated psychiatric illness because when you change nothing about their social demography except recognise depression in older people and treat it, they cut the suicide rate by 75%.

You have heard about Nuremberg so I am not going to go into that. That has mainly had an effect on suicide attempts.

**Gatekeeper Education**

- Professional and community groups.
- Clergy, first responders, pharmacists, geriatric caregivers, military, police, prisons, schools
- May even increase risk in gatekeepers who volunteer because they are themselves unwell or who try to do more than detect and refer.

The next area I want to go to is Gatekeepers. Now this is a more sensitive topic, especially when we all try to get together and work as a team. Now there are important Gatekeepers – clergy, first

responders, pharmacists, geriatric care givers, military police, prisons and schools etc. One of the critical things that we have to watch out in Gatekeepers is that people want to help and sometimes the boundaries between what the professionals are doing and what the amateur and volunteers should be doing is blurred, particularly in psychiatric illness. In a way, this is a fallout of the stigma about psychiatric illness, that these aren't real illnesses, that people have a social problem and therefore anybody who is going to be nice and hold their hand, is going to be helpful. Then everybody gets out of their depth. The person trying to do the helping, the volunteer or the Gatekeeper, and the person who is supposed to get the help. One can't give the help properly and gets upset and the other one isn't getting proper help. So it engages both the Gatekeepers situation as well as the individual, so the important thing is to know what the role of everybody ought to be in this system.

### **Military**

- Norway 1993 intervention - decrease in suicide rates in conscripts from 15/100 000 in 1985-92 to 9/100 000 in 1993-99
- US Air Force 1996 intervention - decrease in suicide rate from 16.4/100 000 in 1994 to 5.6/100 000 in 1999 (Knox et al 2003)

Now the Military - there are two studies, in Norway and in the US where you have a top down approach. The Generals decide it's okay to have a psychiatric illness. We want people who have problems with domestic violence, alcoholism, depression etc to go and get help and when it comes from the top that it's okay to go and get help, it makes a difference. People go and get help and the suicide rates drop in these highly organised societies such as the Military. The US airforce was concerned initially because they were losing more pilots via suicide than in combat and these pilots were sometimes using their planes. One of those planes would fund easily the budget of the whole National Institute of Mental Health for a year.

### **Youth Gatekeepers**

- Programs tend to focus on schools and be curriculum based.
- Seldom evaluated for effectiveness and safety
- Do not capture many at-risk youth due to drop outs, absenteeism and older age.

Again, that highlights a need - the programmes tend to focus on schools, be curriculum based, but in fact it reminds us of the need to evaluate how good are these programmes and are they working or are they safe. You don't want a situation where you start to talk about suicide and normalise it and give people a sense it is okay to do it. You want to convey the right message.

### **Reviews - Curriculum based interventions**

- Canada - some improvement in knowledge but no indication of behavioural change. (Ploeg et al. 1996)
- USA - 1980 - 96 - inclusion of mandated curriculum based education in state prevention plans no relation to youth suicide rates over that period. (Metha et al. 1998)

Unfortunately, these programmes don't capture a lot of the at-risk youth because they are not at the schools. The sick ones have dropped out, they don't attend school through truant or sometimes they are more than 17 or 18 years and have left school.

### **US Studies - Curriculum based interventions**

- No improvement of negative attitudes, no increase in treatment seeking, no decrease in suicidal behaviour compared to controls. (Shaffer et al 1990, 1991, Vieland et al. 1991)
- Georgia & Connecticut SOS programs - greater knowledge on depression, fewer suicide attempts, no change in suicidal ideation or help seeking. (Aseltine & DeMartino 2004)
- Florida - decrease in suicide rate 12.9 per year to 4.6 during intervention 1990-1994 compared to the preceding 10 years, decrease in suicide attempts from 87/100 000 in 1989/90 to 31/100 000 1993/4. (Zenere & Lazarus 1997)

### **Screening Youth**

- Can identify at risk youth who can then be directed to treatment.
- Shaffer et al - 1,729 teens screened for depression: 41% with MDD, 53% with suicide ideation, and 47% who had made a suicide attempt were unknown to adults. Suggests school screening can almost double the rate of detection.

Trying to figure out whether these programmes do any good and sometimes they don't do as much good as we would like. This I think is an important study, David Shaffer, my colleague who is

Professor of Child Psychiatry in my department, did a screening programme looking at teen suicide in schools. This was important because about half the kids with depression and about half the kids with suicidal ideation and maybe a suicide attempt, who were detected by the screening programme were unknown to adults. In other words, that kind of programme may almost double the rate of detection of at risk kids, so I think that it is a good thing to do. However, everyone of these programmes needs to be supervised and monitored very carefully to make sure it's doing more good than harm.

### **Chain of Care**

- Norway – areas with chain of care programs have increased treatment compliance and fewer repeat suicide attempts than those with no programs.
- Western Australia – two year high level follow up intervention reduced repeat suicide attempts in intervention group. (Aoun 1999)
- Canada – intensive follow up group showed no decrease in suicidal behaviour compared to usual care over two years. (Allard et al 1992)

Now this concept, Chain of Care, is directly related to these notions of these screening programmes. Chain of Care means that you've got some sort of programme where you screen and sensitise and educate Gatekeepers. You find the people that are at risk. But then you need to get them to somebody who can provide the care and make sure the care is actually delivered and the person sticks with the treatment facility and the treatment given. So these are all steps in getting better and then the person speaks with follow up. So these Chain of Care approaches are new and some have been shown to work and some haven't. It's hard to know what the reason is but here are the results from Norway, which is the one that we know the most about, where suicide attempt rates seem to go down significantly, that's what those minus numbers are on the right, in these areas with the introduction of Chain of Care programmes which engage hospitals, referral systems, GP networks and so on and so forth.

Let's say the Chain of Care business works and the screening and the Gatekeepers and all of that sort of thing and the people actually get to a place where they can get treatment, what do you get next? I would agree with the previous speaker that one needs to take a broad based view of what might work and then to try and figure out what does work and what else can be done.

### **Treatment Interventions**

#### **US Suicide Rates and Antidepressant Prescriptions**

- The national suicide rate climbed 31% in the years 1957 to 1986 (except for a small dip in the late 1970s that was quickly reversed), from 9.80 to 12.87 suicides per 100,000 persons. The reasons for this increase are unclear.
- However, in 1987, the suicide rate began to decline and that trend has continued to the present. Why?

So here is part of the story: Anti-depressants and Depression – the national suicide rate in the US climbed 31% over a period of about 30 years, pretty steadily and we don't know why it went up. However, in 1987 that 30 year steady increase in suicide rates reversed and ever since then it has been declining. Why? One reason is that during that period of time anti-depressant prescription rates rose phenomenally, four-fold, over 400% increase in national prescription rates for anti-depressants. And if you do it mathematically indeed, the rate of rise of these anti-depressant prescription rates correlates with the rate of fall of the suicides and does so better than things like alcoholism or unemployment etc.

#### **US Suicide Rates and Antidepressant Prescriptions**

- From 1985-1999, the US suicide rate declined 13.5% and antidepressant prescription rates increased over four-fold.
- Antidepressant prescription rates were inversely associated with the national suicide rate ( $p = 0.01$ ), controlling for unemployment and alcoholic beverage consumption rates.
- In 1997-2000 females consistently account for twice the antidepressant prescription volume (65-67%) compared to males (30-32%).
- The decline in suicide rates was 22.5% for females and 12.8% for males.
- Those depressed individuals who received more antidepressant prescriptions had bigger falls in suicide rates.

Even more persuasive is that in a three year period for which we had data, separating prescription rates for females compared to males, women got twice the prescription rate volumes as males and the suicide rate declined in women at almost twice the rate of males.

So if you focus in on who is getting the prescriptions, you can see this pattern of a relationship between prescription rates and anti-depressants and suicide rates falling more clearly. For every 10% increase in the total anti-depressant prescription rate in the US, which means 15 million more anti-depressant prescriptions, the national suicide rate decreased by 3%. That's almost 1,000 deaths.

One interesting thing about the US is that prescription rates for anti-depressants vary enormously from county to county across the US - huge variation. So what we did was we looked at the rate of fall of suicide rates. What happened suicide rates in all of these counties and how did that relate to the change in prescription rates and the difference in prescription rates between all of these counties. And the result is that there is a very high correlation. The chances of this being some kind of statistical fluke are infinitesimal. So the rate of use of SSRIs which is the commonest new generation anti-depressant correlates with lower suicide rates between counties after controlling for every conceivable kind of variable from age, sex, income rate and a variety of other things. Another study which was done and was similar but didn't have as many variables controlled, by Mark Olfson, in our department of Child Psychiatry confirmed that this effect also applies to youth.

### **Results**

- Serotonin reuptake inhibitors (SSRIs) and other new generation non-SSRI antidepressants are associated with lower suicide rates (both within and between counties).
- Olfson et al (2003) confirmed this effect for youth suicide in the USA.
- Results are adjusted for age, sex, race, income and county-to-county variability in suicide rates.
- Higher suicide rates in rural areas are associated with fewer antidepressant prescriptions, lower income and relatively greater prescription of TCAs.

This has also been found in other countries, that as prescription rates have gone up, suicide rates have gone down.

### **Epidemiological Studies in Several Other Countries Also Provide Evidence That Antidepressants Prevent Suicide**

- A decrease in suicide rate correlates with increased antidepressant use in Europe, Scandinavia, the United States and Australia.
- Doubling of prescriptions for serotonin reuptake inhibitors (SSRIs) correlated with a 25% decrease in the suicide rate in Sweden.
- A study in Italy found the relationship between a 36% rise in prescription rates and an 18% decline in suicide rates only in females.

### **Safety:**

The interesting thing is that as you switch from the older generation tricyclic anti-depressants, which are very lethal when you take them on an overdose to the newer generation SSRIs, there is a benefit because those individuals who decide to take the nearest pills to kill themselves, when they take the tricyclics they are much more likely to die. If they take the SSRIs, it's very difficult to kill yourself.

- In 1985, TCAs accounted for 59% of antidepressant prescriptions and 87.5% of suicides by antidepressant overdose in the TESS survey. In 1998, they accounted for 24.2% of antidepressant prescriptions, but still accounted for 82% of suicides by antidepressant overdose in the TESS survey.

So tricyclic anti-depressants used to account in 1985 for 60% of all prescriptions and as they accounted for 60% of all prescriptions they account for about 87% of all suicides by anti-depressant overdose. In 1998, 14 years later, tricyclics only account for 24% of prescriptions of anti-depressants and they still account for 82% of all suicides by anti-depressant overdose. So there is a very real benefit in switching to safer anti-depressants.

### **Side effects and safety:**

- Are side effects of SSRIs the same or different, in youth compared to adults?
- Is the safety different in suicidal youth?

There has been a lot of concern lately about the safety of anti-depressants in kids but I don't have time to really deal with this topic properly. We understand that at least some anti depressants work in adolescents and children for depression.

### **Do Antidepressants Work in Children and Adolescents?**

- SSRIs: results are most convincing for fluoxetine but why would one SSRI work and the others be equivocal or not effective?
- Tricyclics: do not appear to work.
- New generation non-tricyclics do not appear to work eg venlafaxine.

The best are fluoxetine. I'm not sure what its called in Ireland? Prozac, right. So, three controlled studies out of three have shown that Prozac works for depression in kids. For the other SSRI's, some of the studies show efficacy, some do not show efficacy but the ones that did not show efficacy were not designed to show lack of efficacy. In general its true actually as horrifying as it may sound, many drug trials, not just psychiatric drug trials, don't work because the treatment group that's put in there were not going to respond to any kind of medication that worked or the doses that were used in the trial weren't the right doses or something like that. But there is evidence that at least one of the SSRI's works for sure and it's possible that most of the SSRI's work but we don't have definitive data.

#### **Are SSRIs Safe in Youth?**

- Most suicides in young and old occur in untreated depressed persons (autopsy).
- Declining suicide rates in youth correlate with increased prescription rates for SSRIs as shown for adults.
- Case reports of emergent suicidality raise the question of whether this is due to illness or treatment but prove nothing.

The real concern is that when you look at some of those studies, that there were reports of higher rates of suicidal ideation and attempts in the group that got the anti-depressants compared to the group that got placebo. Individually these studies don't show any statistically significant differences in those but collectively there is concern that there may be a pattern.

#### **Other clinical and epidemiological considerations in evaluating the safety of antidepressants in youth:**

- Areas of the US with the biggest increases in suicide rates are associated with the biggest declines in youth suicide rates (Olfson et al 2003).
- Most suicides in adults or youth with major depression occur in untreated persons.
- The risk of suicide due to no treatment in depressed youth outweighs the risk of treatment. No suicides in 4000 depressed children or adolescents in SSRI clinical trials.

The important thing though is that amongst all of those trials of about 4,000 kids approximately that entered these anti depressant treatment trials, there wasn't a single suicide. Not one suicide. The rates of ideation and suicide attempts amongst adolescents particularly are extremely high so you're going to get a lot of this kind of behaviour even in the treatment trial. Nevertheless within the context of those treatment trials, the rates were a lot lower than an untreated population. So my view for whatever its worth is that the risk of suicide due to no treatment in depressed youths outweighs the risk of treatment whatever that risk may be and in fact in children and adolescents who commit suicide and are depressed, the overwhelming majority were untreated so the biggest problem in youth suicide is no treatment.

There are two other drugs that show some promise and I think just to further illustrate the point:

#### **Lithium has Anti-Suicidal Properties:**

- Naturalistic studies have shown that depressed patients on lithium have lower rates of suicide attempts and completion, regardless of mood stabilization
- Discontinuation studies demonstrate that suicidal behaviour emerges after patients with mood disorders stop taking it
- In a randomized prospective study, lithium had anti-suicidal properties superior to those of imipramine in unipolar subjects and carbamazepine in bipolar and schizoaffective subjects

One is lithium which is an old drug that's been used in manic depression and recurrent depression etc. It actually seems to reduce suicide rates independently of how well it works as a mood stabiliser, as an additional effect on a trans-medical serotonin, this is what we think, that reduces the impulse, the likelihood of acting on these feelings and so it has a kind of direct anti-suicidal effect independent of its effect on mood.

#### **Antipsychotics:**

- Clozapine may reduce suicide rates in psychotic disorders independent of effect on psychosis.
- Other atypical antipsychotics may share this property but one controlled study shows clozapine superior to olanzapine.

- Low dose antipsychotics may also reduce suicide attempt rates in some mood disorders and personality disorders.

Clozapine is an anti psychotic medication with a similar kind of anti-suicidal property. We think it also acts on this sort of propensity to be a bit impulsive. So in addition to being an antipsychotic, it's been shown in a randomised controlled clinical trial to reduce suicide rates in people with psychosis, like schizophrenia, independent of its anti-psychotic action. So there are these kinds of treatments around and that's what educating GP's is all about.

#### Psychotherapies:

- Dialectical Behaviour Therapy reduces suicidal behaviour in Borderline Personality Disorder without reducing severity of depression.
- Regular patient contact on follow-up reduces suicidal behaviour.
- Cognitive Behavioural Therapy (Beck and others) shows promise in adults but does not work without medication in depressed youth.
- Other therapies require prospective, randomized control clinical trials.

There are several psychotherapies that have been shown to have promise in reducing suicide rates. There are specific types of psychotherapies in specific psychiatric disorders. It is not one therapy fits all. You need to know what the illness is and use the appropriate therapy for that illness. In depression by the way, cognitive behavioural therapy doesn't seem to be as effective, particularly in young people. People say "well if I'm worried about anti depressants in my child, maybe they can get psychotherapy instead? Well, the psychotherapies in kids have not been shown to be effective in depressed children treating depression unless they are combined with an anti-depressant. That came out very clearly in a recent large scale controlled study done in the United States.

#### Means Restriction:

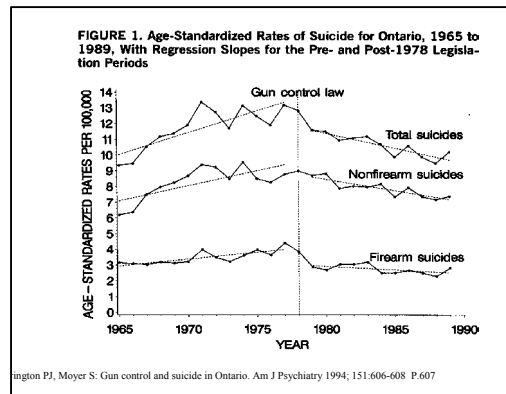
The rest of this talk is pretty straight forward. In general, it is worth restricting very lethal methods and access to very lethal methods.

*Fire arms* – many studies suggest there may be a link between reducing fire arm accessibility and suicide rate. There is a study from Ontario where the total suicide rate fell because so many people were using guns.

#### Decrease in suicide by method restricted

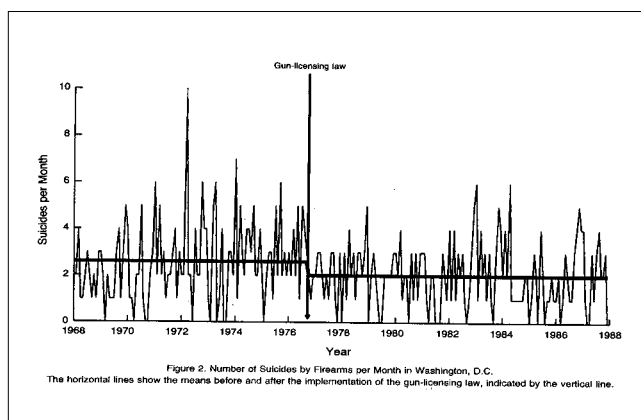
##### •Firearms

- District of Columbia, USA (Loftin et al 1991)
- Queensland & Sth Aust., Australia (Cantor & Slater 1995, Snowdon & Harris 1992)
- Canada (Bridges & Kunselman 2004, Lester & Leenars 1993)
- New Zealand in young males
- Norway



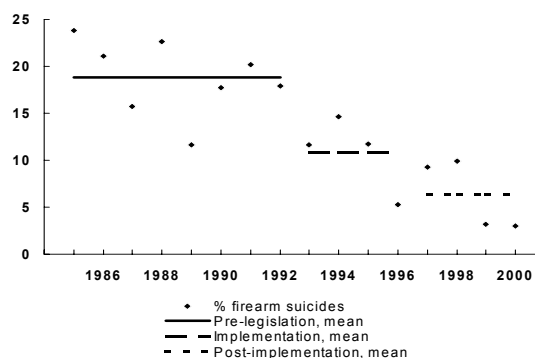
Here's a study in Washington D.C. which is armed to the teeth and a slight reduction in gun availability in Washington and an equivalent but consistent reduction in suicide rates. New Zealand – fire arm related suicides, a fraction of all suicides went down as fire arms became restricted.

### Decline in Suicide by Guns In Washington DC



Lofin et al. (1991)

### New Zealand. Firearm-related suicides as a fraction of all suicides, 1985-2000, youth <25 years.



**Detoxification of Domestic Gas** – that's led to a reduction in suicide rates.

- England (Kreitman 1976)
- Australia (Whitlock 1975)
- Switzerland (Lester 1990)
- Japan (Lester 1990)
- Netherlands (Lester 1991)
- Germany (Wiedenmann & Weyerer 1993)
- US (Gunnell et al 2000)

Now, what happens is after a while sometimes the rate begins to climb again, people do switch to other methods. But you've saved hundreds or thousands of lives because those people who tried to use that method or switched to a less lethal method in the meantime didn't do it and maybe they've gone to treatment since then. You've given people a second chance. A lot of this business with means restriction, it isn't a way to treat people, this is a way of giving people a second chance.

We have barbiturates, like Paracetamol, restricting the availability, has had a positive effect in a number of studies.

### Decrease in availability of barbiturates and catalytic converters for car exhausts

- Australia (Oliver & Hetzel 1972), UK (Crome, 1993), Denmark (Nielsen & Nielsen 1992), Norway (Retterstol 1989), Japan, (Yamasawa et al 1980), Sweden (Carlsten et al 1996), but not Finland (Ohberg et al 1995)
- Motor Vehicle Emissions
- UK (McClure, 2000), USA (Mott et al 2002), but not Australia (Routley & Ozanne-Smith 1998)

Motor vehicle emissions in several countries, not Australia, I don't why, has had a positive effect.

Catalytic converters – you have to run the engine for so long to kill yourself that people get discovered, it runs out of gas, the engine stops, all of these things help.

Pesticides: in some countries pesticides are really serious and if you substitute the pesticides being marketed for the newer generation of pesticides which are less lethal and you make them less available in the highly concentrated forms, you can have a big impact.

- Pesticides - Samoa (Bowles 1995), Finland (Ohberg et al 1995)
- Paracetamol Packaging - UK (Hawton 2002)

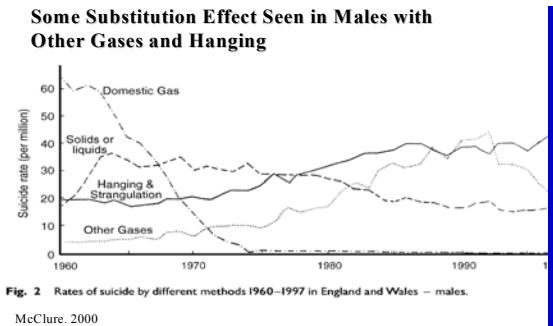
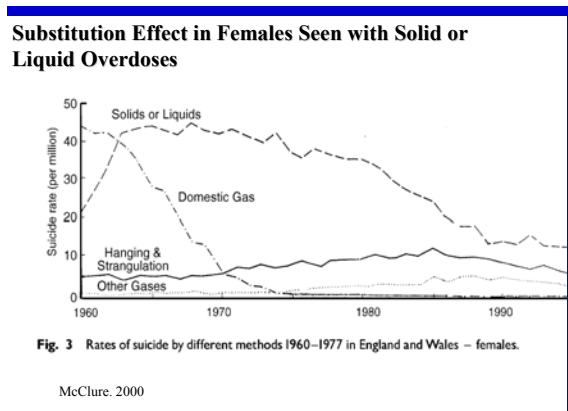
- Alcohol Availability - Former USSR (Wasserman et al 1998), Iceland (Lester 1999)
- Barriers to Jumping - New Zealand (Beautrais 2001)

**Alcohol:** I hesitate to bring this subject up in Ireland. I have never seen alcoholism in Ireland close up but I've seen what happens when the Irish go to Australia and people in Australia drink a lot but in the former USSR and in Iceland and places like that when they went through a period of restricting the availability of alcohol, the suicide rate plummeted.

**Bridges:** This is courtesy of Annette Beautrais from New Zealand. Here's this bridge, the famous Grafton Bridge. The Council removed the barriers because they thought that it made the bridge look ugly. The result was that the suicide rates went up fivefold in the equivalent period of time. The council was not too enthusiastic about putting the barriers back and was not until Annette Beautrais mentioned that there may be some legal liability that they reluctantly agreed, so they put the barriers back, in flexiglass, attractive but hard to climb over. Since then there haven't been any more suicides. And importantly, people didn't go to the next bridge along. It was a couple of miles along, but it was certainly accessible. This method substitution thing is not automatic and rapid and in the meantime, you are saving lives.

**Evidence of method substitution**

- Domestic gas detoxification in the UK (McClure, 2000), Germany (Wiedenmann & Weyerer 1993) and the US for males (Lester 1990)
- Pesticide banning in Finland (Ohberg et al 1995)



**Lower Toxicity Antidepressants** I mentioned the toxicity of anti-depressants.

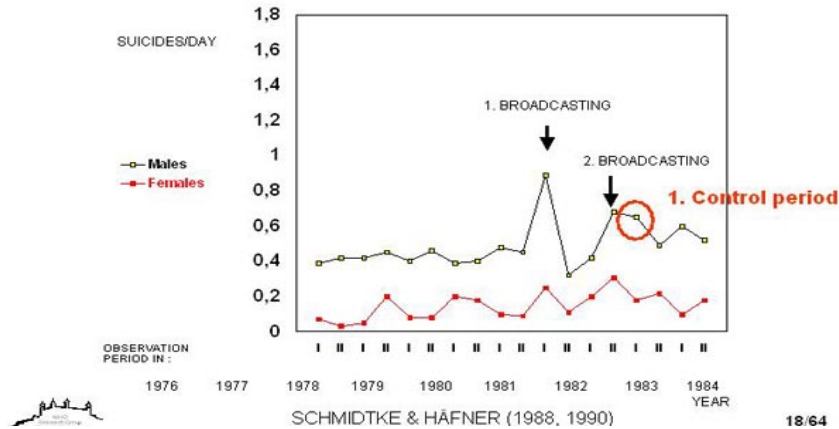
- Lower toxicity SSRIs decrease in suicide due to overdose with antidepressants. (Gibbons et al 2004, Kapur et al 1992, Frey 2000)

**Changing the Culture:** This is another interesting example, in Hong Kong and also in parts of China, they use charcoal barbecues and people learned that you can funnel the smoke from the charcoal, which is a lot of carbon monoxide, into your face and kill yourself that way. So now they are trying to change the culture. People want their charcoal grills and they don't want an electrical grill because the food doesn't taste the same but they are replacing these charcoal grills with electrical grills and trying to change the culture as a way of means restriction.

**Media:** We want the media to stop encouraging suicide. I know they don't think they are encouraging suicide and I hope you're out there listening. But misinformation, contagion, imitation, the role of the internet etc, these are all important subjects.

Uk

Amount of presentation:  
Suicides of 15-29-year old males and females during and after 1st and 2nd period of broadcasting of the TV-serial "Death of a student" (male, 19 years old)



We already saw one very good example in the Irish Examiner. But I have other examples from Hong Kong or from Germany where they broadcast this film on the death of a male student killing themselves and the two times they broadcast it, boom, there was an increase in male deaths due to suicide.

**Media Blackouts**

- Significant decrease in suicides females during a 268 day complete newspaper blackout in Detroit in 1967 compared with the previous three years (Motto 1970)
- Japan - 2004, the war in Iraq diverted media attention from a series of internet suicide pacts, and there were no further such cases until coverage resumed.
- Germany - after the establishment of a 'contract with the media' to stop reporting train suicides and changing railway announcements there was a dramatic drop in railway suicides, with 200 fewer.

**Media resistance to guidelines – New Zealand.**



“Don’t make Suicide Taboo”: Suicide is an okay thing, we should talk about it because it’s okay to kill yourself – the exact opposite of what we should be doing. Interestingly enough, people have tried to do things and sometimes they work and sometimes they don’t. Nuremburg wasn’t too successful.

**Interventions: Nuremberg**

- After journalist education: fewer articles on suicides in two of the main three newspapers, less follow up reporting, less prominent placement of articles, but no decrease in the use of photographs, and reports were more polarizing

The AFSP (American Foundation of Suicide Prevention) has had some success in some newspapers in the US.

**AFSP**

- Follow-up study – media recommendations sent to 705 journalists who had reported on suicide and subsequent content of stories on suicide monitored showed a significant improvement in the subsequent stories and the mean number of recommended practices increased

But here is the best one, I really like this – there was a complete newspaper blackout in Detroit in 1967 and there was a significant decrease in female suicide rates during that time because they could not report anything about suicide. Now I am not sure that there is a relationship but it is an important thing to establish.

However, there is some evidence that the less the media talk about suicide, the fewer suicides there are, but it is seen most clearly when they talk about specific types of suicide such as jumping in front of a high speed train or a rock star suicide and people imitating that type of suicide coming from that demographic group.

**Summary:**

**Public Education:** We don’t have enough evidence measuring the success of large scale public education programmes. They seem like a good idea but we need to try and measure whether they really do what we are trying to achieve. We shouldn’t just be looking at public education, what happens to the suicide rate, we should look at the intermediate steps that we think would produce that change in suicide rates, such as effects on treatment seeking or increase in anti-depressant use etc.

**GP Education:** It is the same thing. We should look at other GPs recognising more depression. Are they treating more depression and what effect is that having on suicide rates? Are the people who are killing themselves people who have missed getting into the improved treatment cycle?

**Gatekeepers:** It is important that Gatekeepers get adequate training, understand what their role is in the system and their performance be monitored. They should be offered help if they need help.

**Treatment:** I have mentioned that certainly certain types of medication used in a very specific way for a specific diagnosis has a role to play, in fact a critical role to play.

**Psychotherapies:** Again, it is not one psychotherapy fits all. Specific psychotherapy in a specific indication has a role to play.

**Chain of Care:** That just is common sense, but it is the sort of thing that does not happen. You tell a person they need to get help. Do they get the help? When they are evaluated, is the help delivered? Do they accept it, do they come for follow-up etc? The better their programme, the better the chance of having a positive effect.

**Access to Means:** Really helps. It doesn't substitute for giving treatment and helping people. Leaving them in the suffering and making it harder for them to end their suffering is not a sufficient response to the problem of suicide.

**Media:** The media has to pay more attention to how it reports suicide because there is a potential lethal outcome if they don't do it properly.

Suicide Prevention Interventions need to be evidence driven and it is crucial that both the effectiveness of the intervention and also to be sure we understand how they work.

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Dublin  
November 2004*