

Suicide Prevention is possible

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Presentation outline

- Overall statistics
- Risk factors for suicide
- Prevention
 - Non-pharmacological
 - Pharmacological
- Broad initiatives
- Conclusions

World Wide - WHO

- 1 million per year
- Average rate about 15 per 100,000
- Male to female 3.6:1
- China 200,000

Suicide – Country & Gender

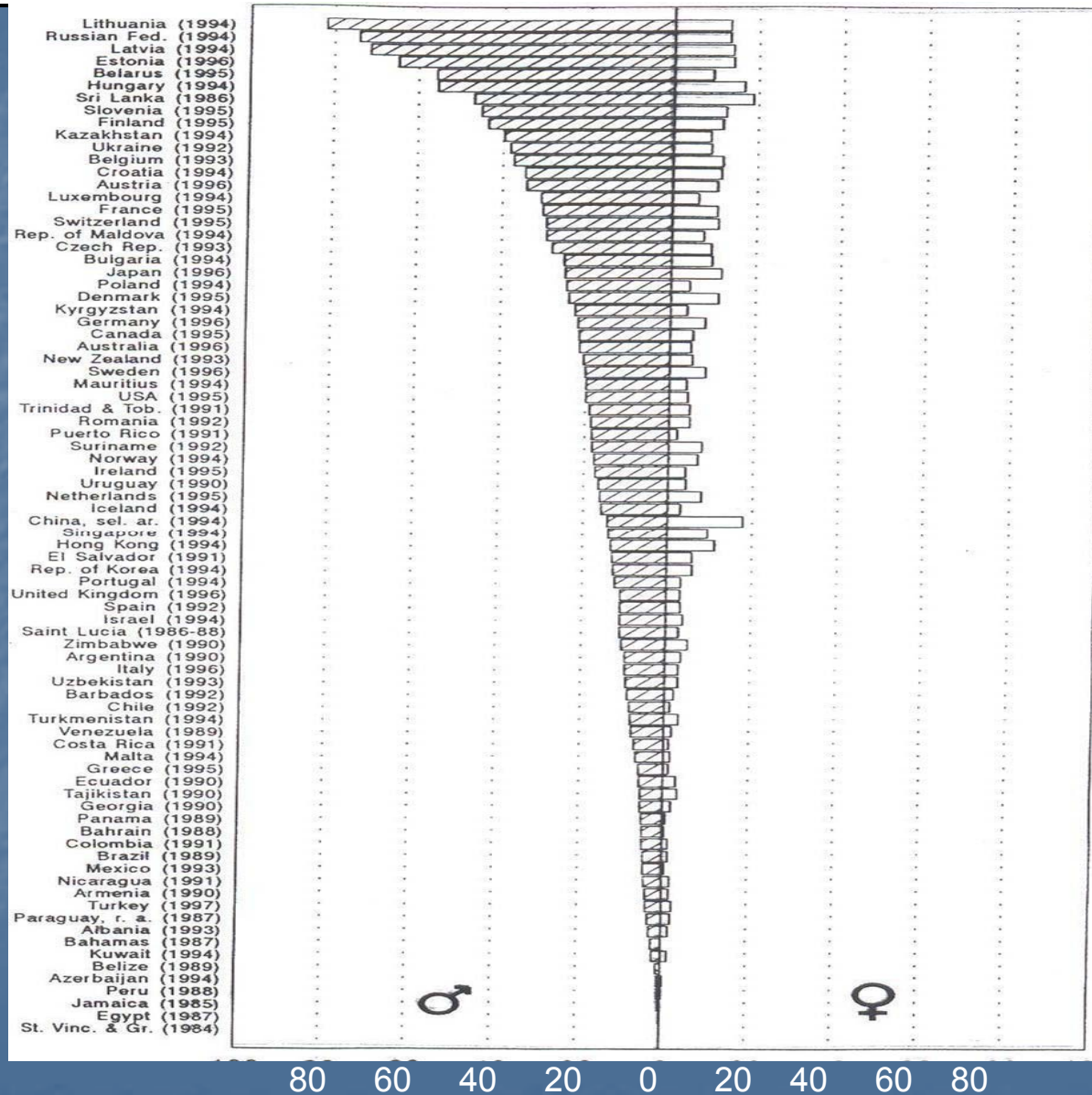
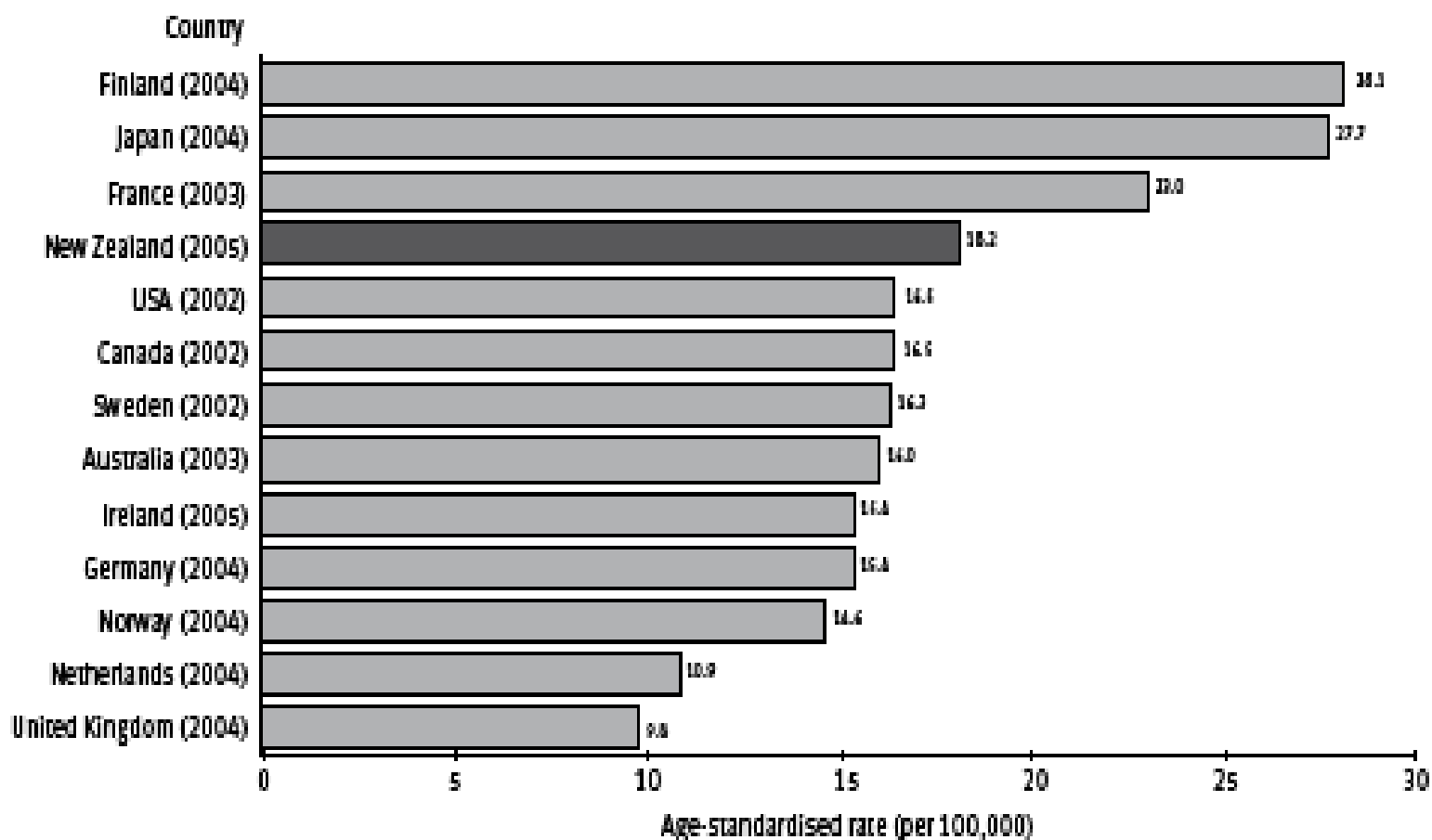


Figure 9: Age-standardised suicide rates for selected OECD countries, males



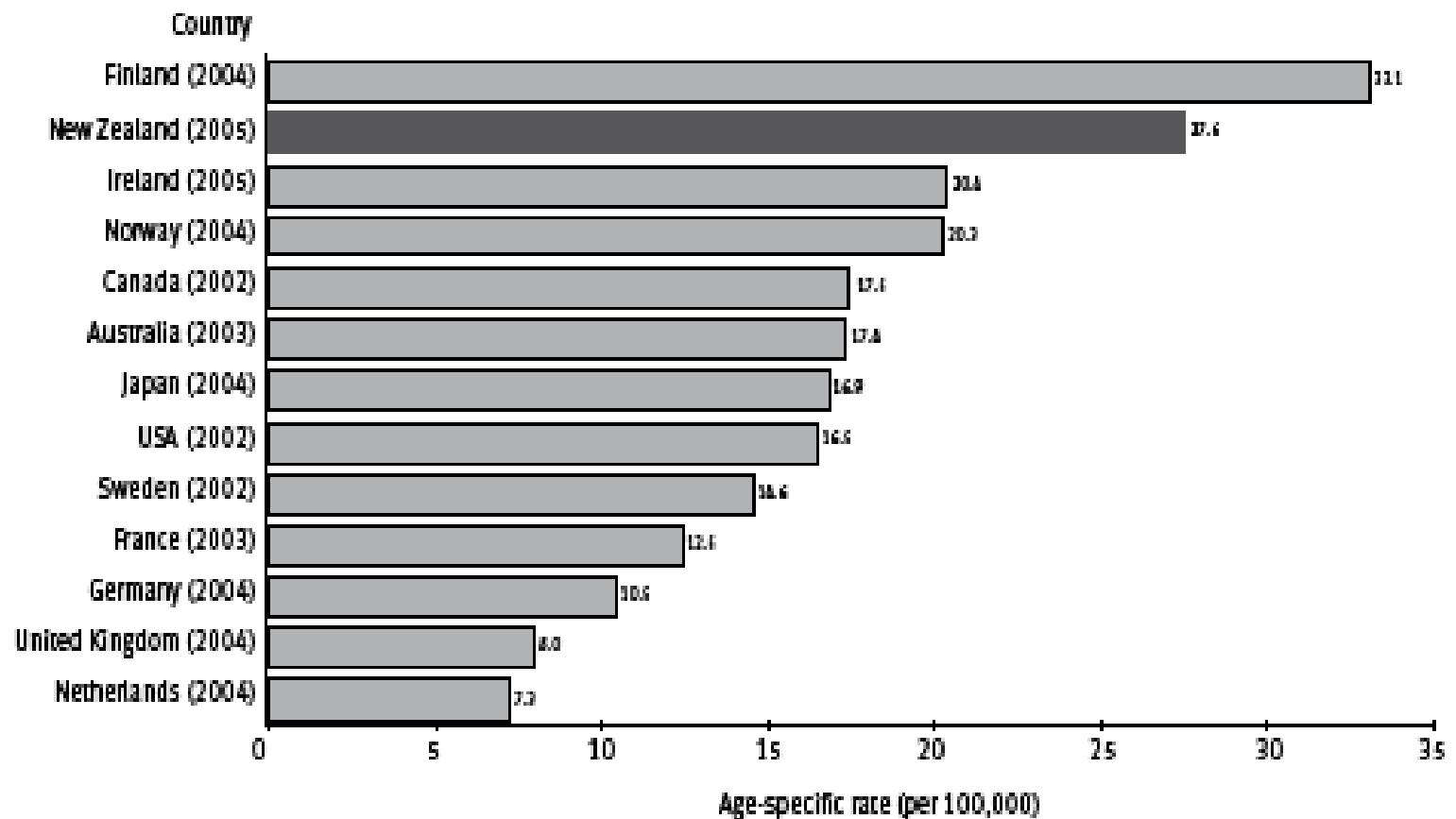
Source: World Health Organization⁴

Note: Rates are age-standardised to the WHO World Standard population. The New Zealand rate here is different to that presented elsewhere in this publication because it has been recalculated in the same manner as the calculations for the other countries, using data available on the WHO website.

Youth (15–24 year olds)

When ranked alongside the other countries in Figure 11, the New Zealand (2005) suicide rate for males aged 15–24 years is higher than that in Ireland (2005), but lower than that in Finland (2004).

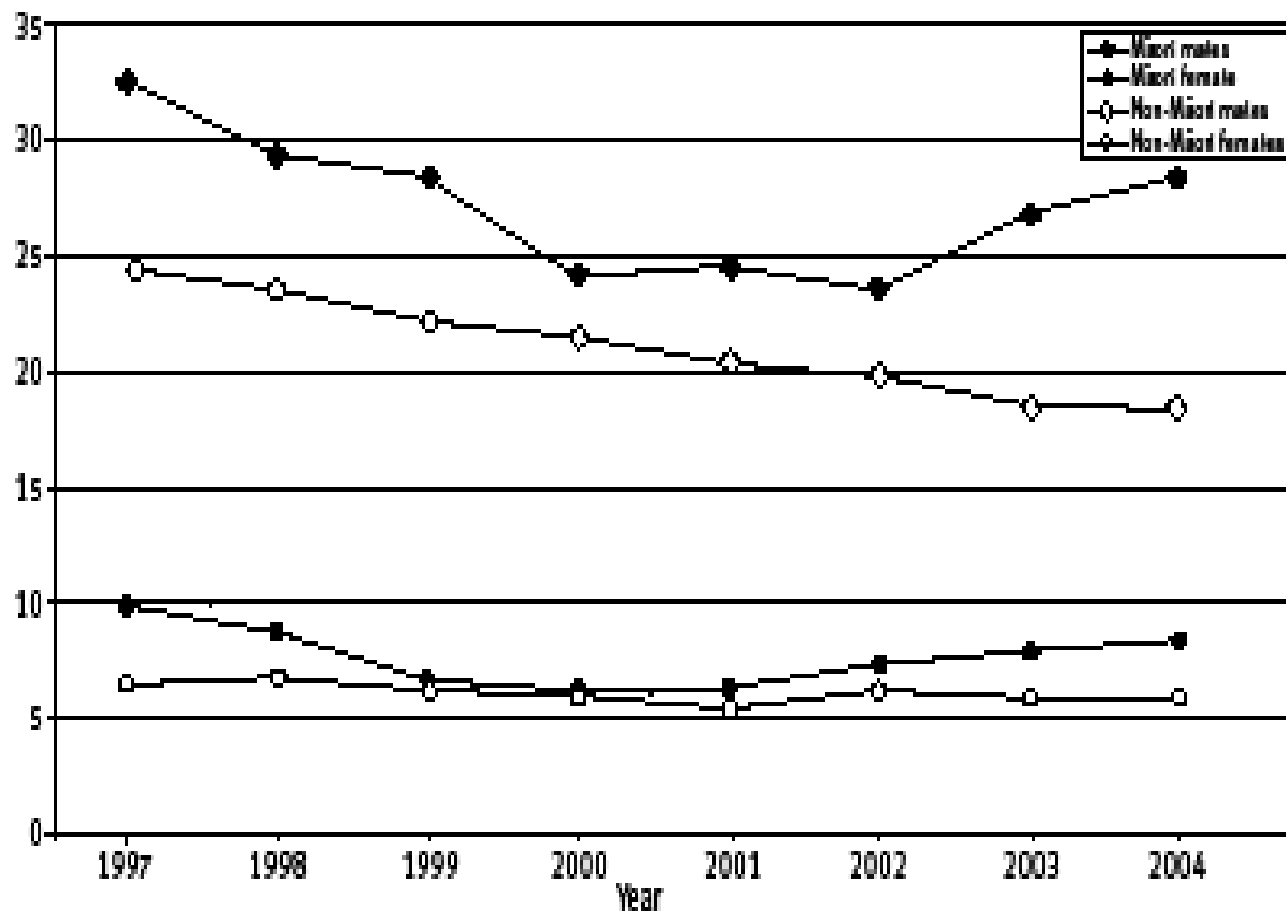
Figure 11: Age-specific suicide rates for selected OECD countries, males, 15–24 years



Source: World Health Organization

Figure 3: Māori and non-Māori suicide death rates, three-year moving averages, 1996–2005

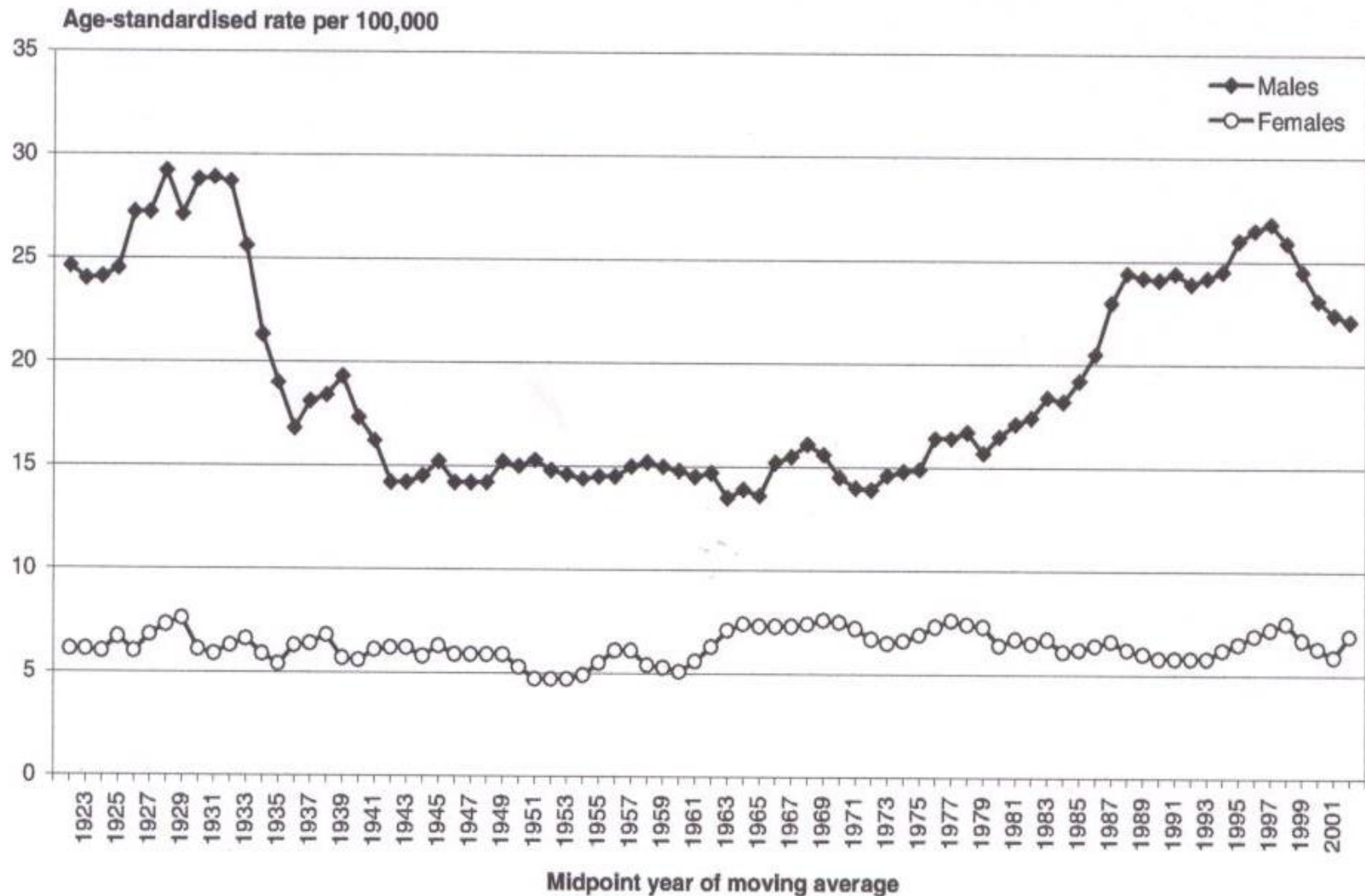
Age standardised rate (per 100,000)



Source: New Zealand Health Information Service

Note: Rates are per 100,000 population, age-standardised to the WHO World Standard population over 4 years old.

Figure 5: Suicide rate, by sex, three-year moving average, 1921–2003

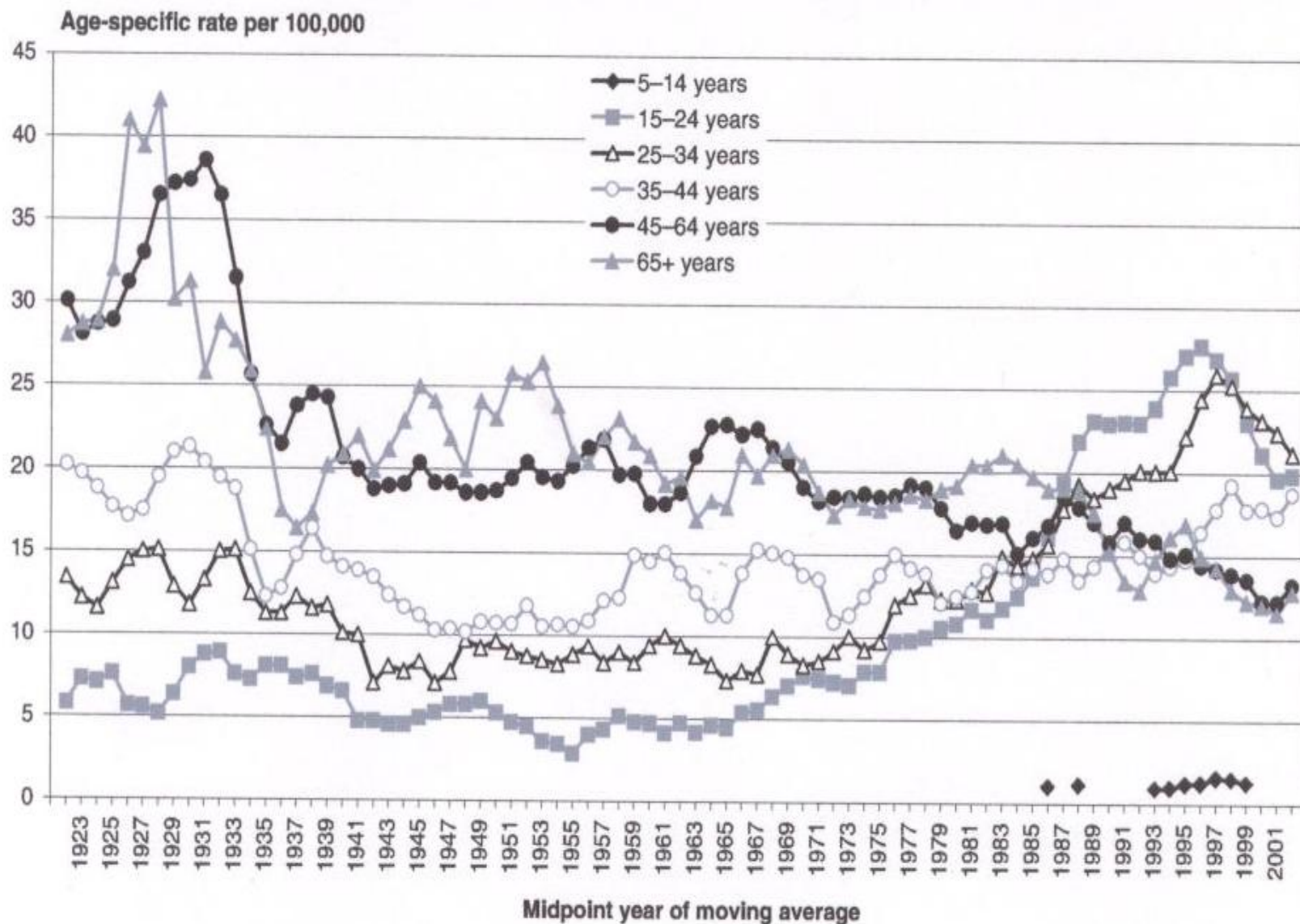


Source: New Zealand Health Information Service

Notes:

1. Rates per 100,000, age-standardised to the World Health Organization standard population.
2. For more information see 'Methods and Data Sources'.

Figure 6: Age-specific suicide rate, by age group, three-year moving average, 1921–2003



Source: New Zealand Health Information Service

Note: Rate was not included if count was less than 5.

Suicidal Behaviours in New Zealand

PHI Monitoring Report No. 15

- Suicide: 2005 – 502
 - M:F 3.1:1
- Peak number in 1998 - 579
- 3 year moving average 2003-05 – 13.2 per 100,000
- Peak in 1996-98 – 16.3 per 100,000
- Each year:
 - Suicide 1 in 7700
 - Hospitalised Suicide attempt 1 in 700
 - Suicidal ideation 1 in 30

Suicide Risk Factors I

- Male
- Previous history of suicidal behaviour
- Mental disorders
 - Depression
 - Substance abuse (alcohol and others)
 - Schizophrenia
- Hopelessness, despair, guilt
- Family history of suicide

Suicide Risk Factors II

- Social isolation
 - Separation/divorce
- Childhood deprivation
 - Parental loss
 - Violence
 - Sexual abuse
- Chronic physical illness
- Custody/prison
- Indigenous
- Sexual identity issues

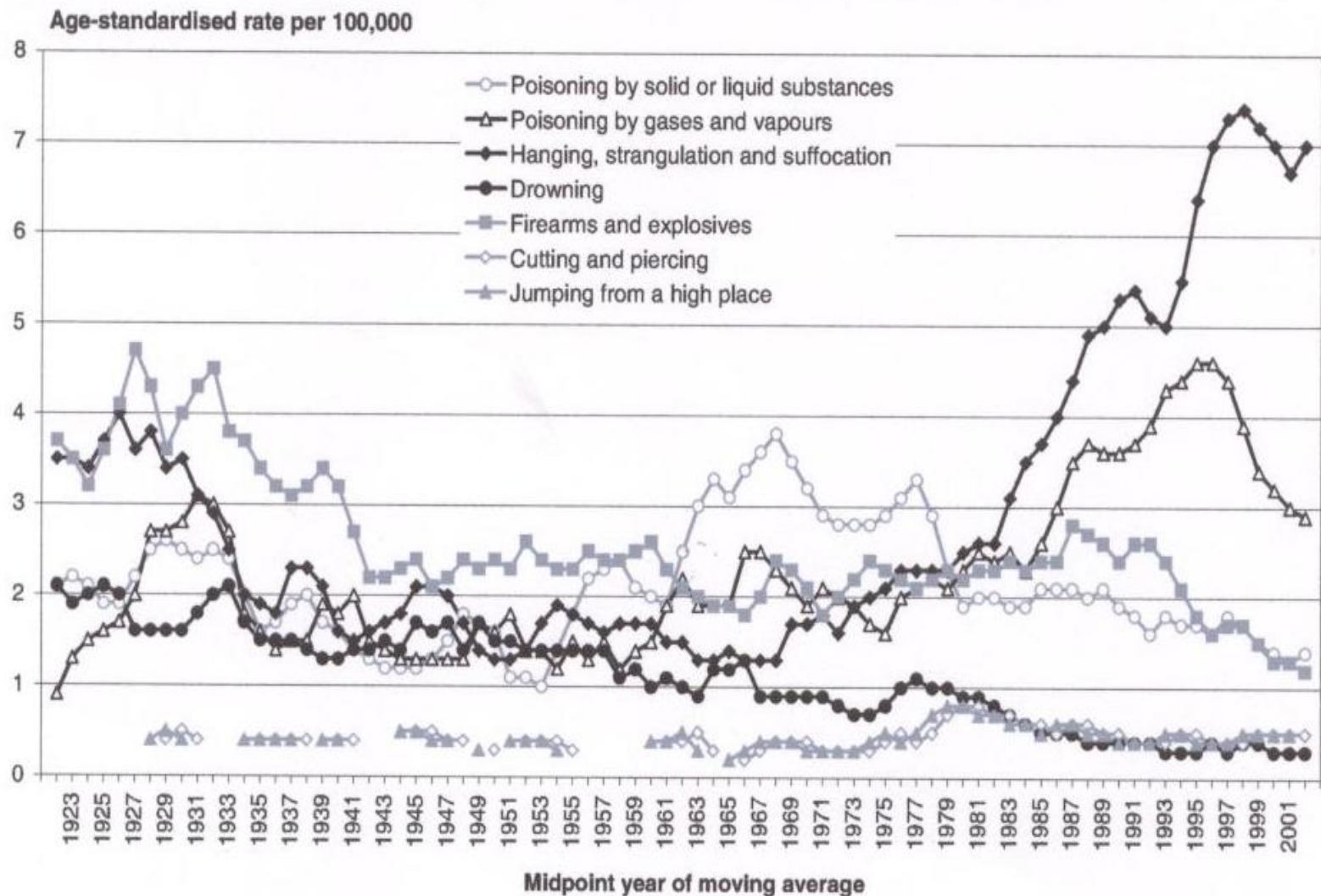
Suicide Prevention

- Restriction of access to method of suicide
- Media
- Treatment of mental illness
 - Non pharmacological
 - Routine assessment
 - Psychotherapies
 - Pharmacological
 - Depression
 - Bipolar Disorder
 - Schizophrenia
- National Programmes
- Recent population studies

Restriction of access to method:

- Priorities differ in different countries
 - e.g. . Pesticide safety
 - Western Samoa, Bowles, 1995
 - Sri Lanka
 - . Firearms – USA
 - . Local issues – e.g. bridges/car parks

Figure 7: Suicide rate, by method, three-year moving average, 1921–2003



Source: New Zealand Health Information Service

Notes:

1. Rates per 100,000, age-standardised to the World Health Organization standard population.
2. For more information see 'Methods and Data Sources'.

Restriction of access to method:

- Barbiturates

Oliver & Hetzel, 1972

- Coal gas

Kreitman, 1976

- Bridge access – Sydney Harbour

Harvey & Solomons, 1983

- Paracetamol

Hawton et al, 2001

- Firearms

Grossman et al, 2005

- Car Exhaust - CO

Brennan et al, 2006

- Pesticides

Gunnell et al, 2007

Firearms Legislation in New Zealand

Beautrais *et al*, 2006, ANZJP

- Amendment to the Arms Act, 1992
- Analysis 8 years before and 10 years after
 - Firearms suicide - ↓ 66% for youth
 - ↓ 39% for adults
 - ↓ 46% overall

Firearms Legislation

- Reduction in suicide: suggestive but not definitely causally related.

Beautrais et al, 2006, Ozanne-Smith et al, 2004

- Gun storage practices: Each of four practices associated with protective effect on youth suicide –
 - Gun locked
 - Unloaded
 - Ammunition locked
 - Ammunition stored separately

Grossman et al, 2005

Car exhausts

- Technology available
 - Catalytic converters
 - CO sensors in cabin
 - Exhaust design

Media approaches

- Based on “copy cat” theories
- Influence probably over-rated
- Possibly influence up to 3% to 5% in youngest age groups

Farr, 1841

“Some plan for discounting by common consent the detailed dramatic tales of suicide, murder and bloodshed in the newspapers is well worth the attention of their editors. No fact is better established in science than that suicide (and murder may perhaps be added) is often committed from imitation”.

Over 100 years until demonstrated statistically :

- Motto, 1967, 1970
 - Newspaper strike
- Schmidtke and Hafner, 1986
 - German TV series depicting young male suicide repeated despite protests
 - Naturalistic A-B-A-B-A research design
 - Increases in imitative suicides

Impact of media guidelines

Niederkrotenthaler and Sonneck, 2007

- Significant reduction in suicide in areas with highest coverage rate of collaborating newspapers
- Changes related to quality and quantity of media reporting

Responsible Media Reporting

- Non-sensational
- Provision of alternatives
- Emphasis on the fact that treatments are available

Influence of the internet

“a double-edged tool”

Tam *et al*, 2007, Eur J Intern Med

- Positive

CBT based programs

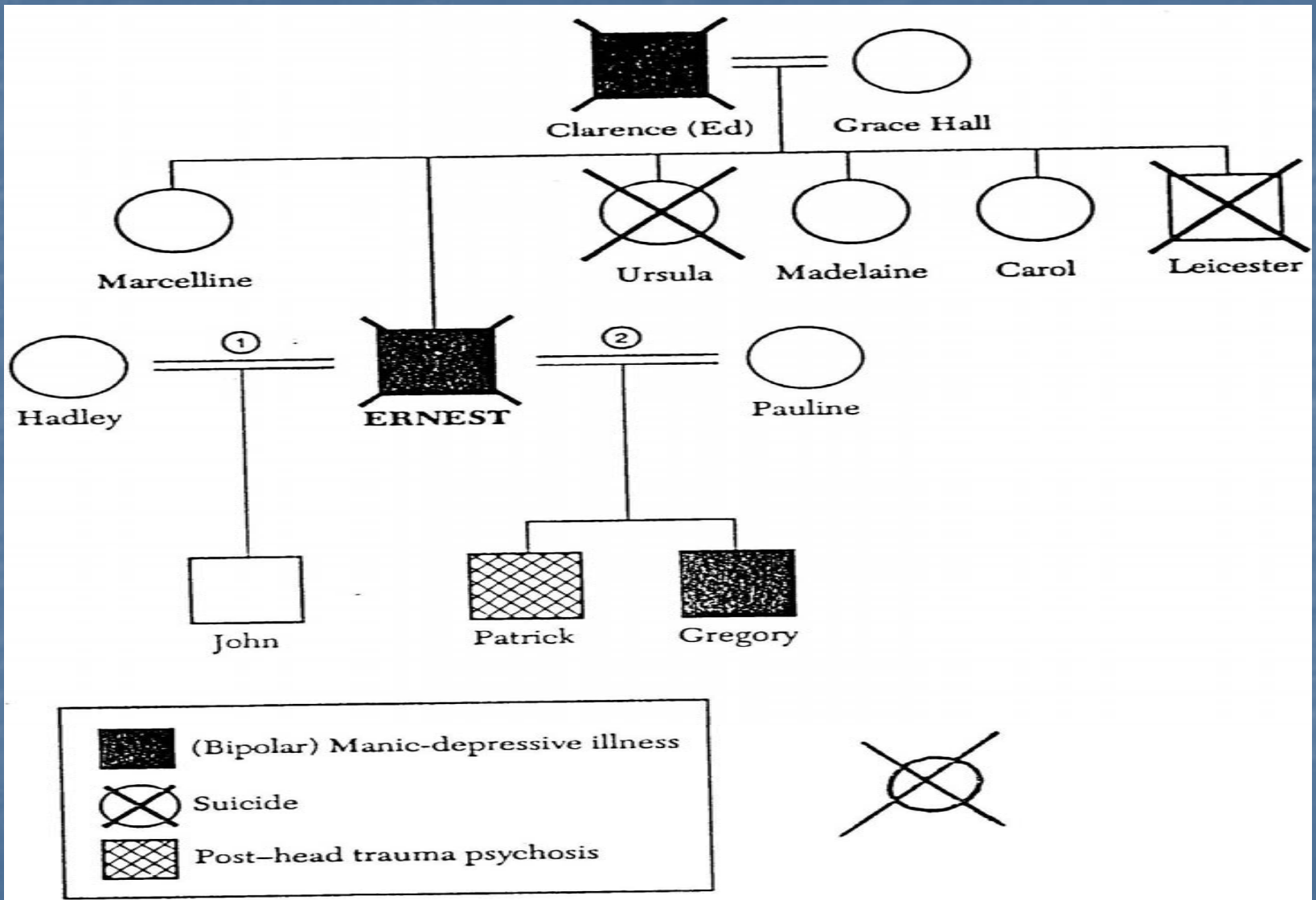
- Negative

Suicide promotion sites

Biological contributing factors to suicide

- Genetics
- Biochemistry

Ernest Hemingway – Partial Family History



Biographical Sources: Baker, 1980; Yalom and Yalom, 1971; Hendrickson, 1987; Lynn, 1987.

Genetic factors in suicidal thoughts and behaviour

(Statham et al, 1998)

- Twin study, 5995 respondents
- “Overall, genetic factors accounted for approximately 45% of the variance in suicidal thoughts and behaviour”

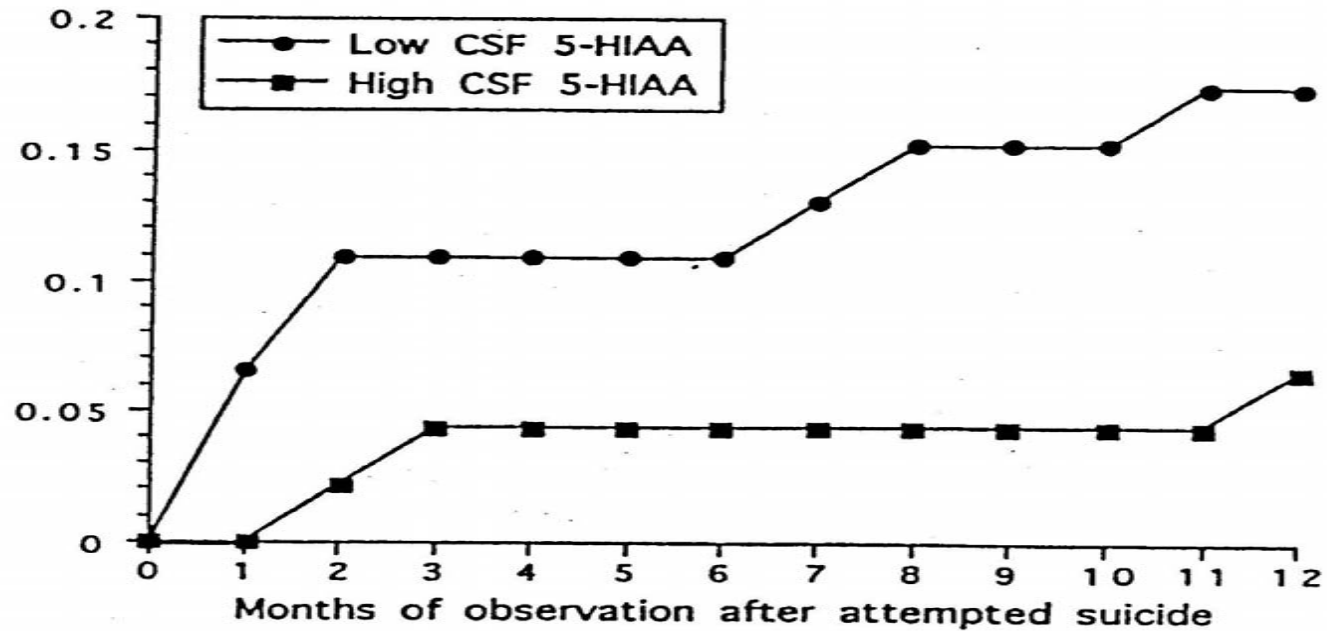
Genetic susceptibility

- Gene-environment interaction
- Those with one or two copies of the short allele of the serotonin T promoter polymorphism have greater susceptibility to depression and suicidality than those homozygous for the long allele

Biochemical theories

- Relate particularly to the serotonin system
- The serotonin metabolite, 5-HIAA can be measured in the CSF
- Well replicated results since Asberg et al, 1976

CSF 5-HIAA and Cumulative Suicide Risk



Cumulative suicide risk during first year after attempting suicide in patients with low vs. high CSF concentrations of 5-HIAA.

Nordstrom et al, 1994.

Just how important are mental disorders in suicide?

- “Psychological autopsy” studies from many countries (e.g. UK, USA, Sweden, Australia, NZ, India, Taiwan) demonstrate that about 90% of those who suicide have a mental disorder at the time.

- All very well knowing this
- Does treatment of mental illness reduce suicidal behaviour?
- Consider broad approaches:
 - Non-medication
 - Medication

Non-medication

- Broad community initiatives
- Clinical approaches
 - Routine assessment
 - Specific psychotherapies

Routine A & E Assessment

Hickey et al, 2001

- Those who were not assessed psychiatrically in A and E in Oxford had greater repetition of deliberate self harm

Kapur et al, 2002

- Similar results to Hickey et al.
- Calculated that only need to assess 12 patients to prevent one repetition of self poisoning

Initial Management

Crawford & Wessely, BMJ, 2008

“patients who discharge themselves before completing initial management have a considerably increased rate of repetition”

Specific psychotherapies

- Dialectical cognitive behaviour therapy

Linehan et al, 1991

- Specific for Borderline Personality Disorder (BPD)
- Results in less repetition of self harm

Other psychotherapies

- Inter-personal therapy
- Problem-solving therapy
- Variations of CBT
 - Mindfulness based

Themes in psychotherapy

- Interpersonal nature
 - Significant other
 - Communication aspect
- Aggression
 - Retaliation
 - Omnipotent mastery
- Issues of life and death
 - Escape/sleep
 - Re-union
 - Punishment
- Impulsiveness

Common non-medication therapeutic components

- Non-possessive warmth, genuineness and accurate empathy

Truax et al, 1971

- Connectedness to others

Frank, 1971

Medication treatment for suicide prevention

- Over the last decade there has emerged good evidence for suicide prevention by adequate treatment of depression, bipolar disorder and schizophrenia.

Depression

Deceptively simple term.

Can vary from a transient disturbance of mood to profound and persistent melancholic despair.

“the pain of severe depression is quite unimaginable to those who have not suffered it, and it kills in many instances because its anguish can no longer be borne. The prevention of many suicides will continue to be hindered until there is a general awareness of the nature of this pain”.

Styron, 1991

Depression and Suicide

Lonngqvist, 2000

- **60% of suicides have significant depressive conditions**
- **Major depression has 3-4% lifetime risk of suicide**
- **Suicidal ideation also strongly associated with depression**
- **Importance of mood disorders sometimes minimised, particularly in the young**

Mood disorders in suicide in the young

Shaffer et al, 1996

- 120 young persons under the age of 20 who died by suicide
 - 2/3 had a mood disorder
 - 50% symptoms > 3 years
 - < 5% symptoms < 3 months

Can anti-depressants help?

- RCTs in clinical samples have demonstrated a reduction in suicidal ideation.

e.g.

- Montgomery *et al*, 1995
- Letizia *et al*, 1996
- Szanto *et al*, 2003
- Mulder *et al*, 2008

BUT: Research dilemma

Despite the clear association of depression and suicide:

- “No single intervention has been shown in a well-conducted randomised controlled trial to reduce suicide”

However:

- Low base rate of suicide precludes RCT examination of suicide prevention per se.
- Need creative research methodologies that reflect clinical practice.

Pragmatic approach

Therefore, let us examine naturalistic real-world studies of depression and its treatment

Effect of increased antidepressant use in Sweden – I

- Predicted 25% decrease in suicide with 5-fold increase in antidepressant prescribing (1994, on 1991 data)
- Antidepressant use increased from 1% to 3.4% between 1991 and 1996

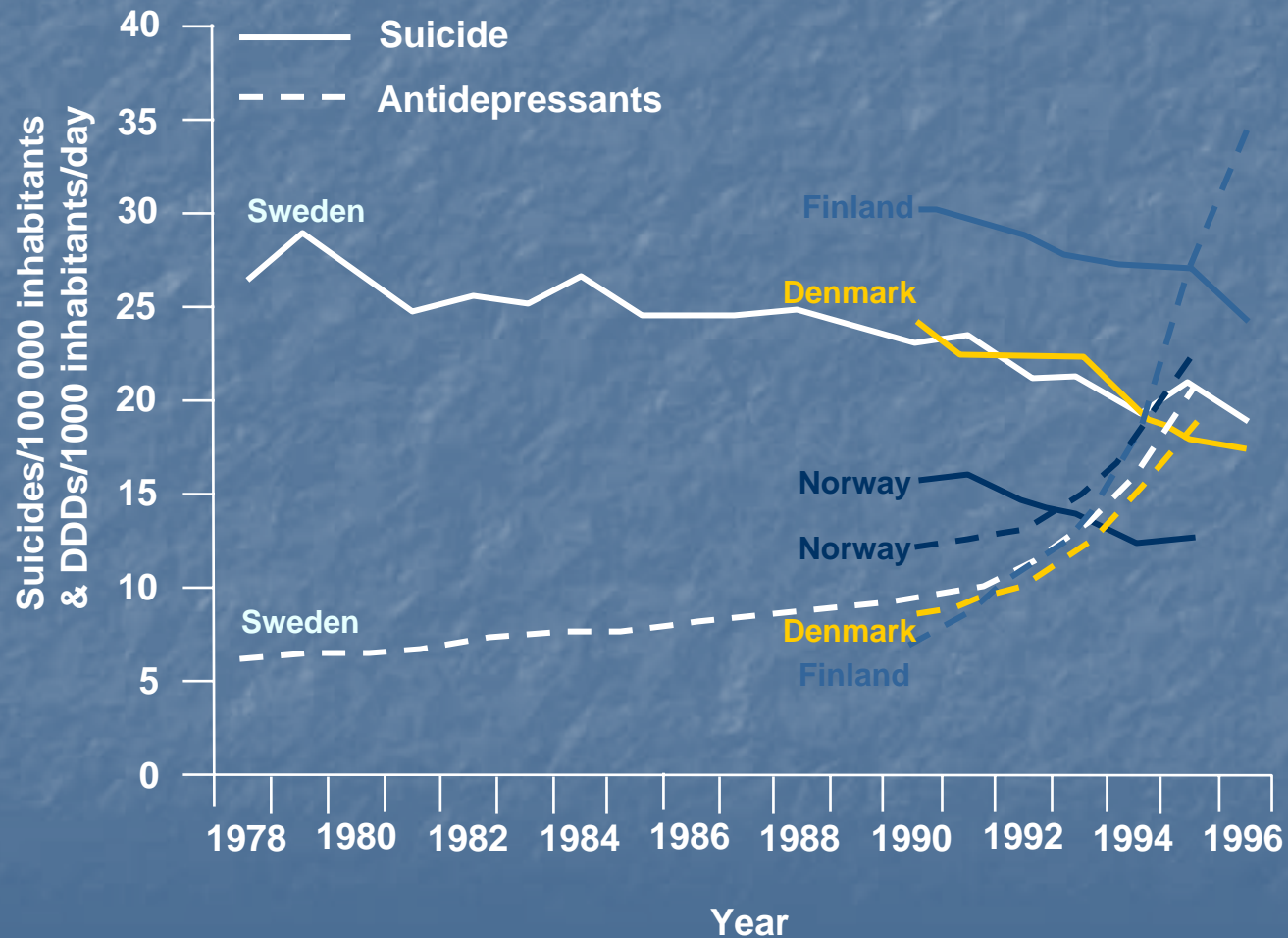
Effect of increased antidepressant use in Sweden – II



- Suicide by 19%
 - 1991: 23.3
 - 1996: 18.8

- Significant ($p < 0.05$) inverse correlation with antidepressant use

Effect of increased antidepressant use in Sweden – III



Combination of all available international SSRI data

Ludwig and Marcotte, J Policy Analysis Management 2005

- SSRI and suicide data from 27 countries
- Suicide rates fell fastest in those countries that experienced the most rapid rate of growth in SSRI sales
- 13% increase in SSRIs associated with 2.5% reduction in suicide rates

Combination of all available international SSRI data

Ludwig and Marcotte, J Policy Analysis Management 2005

- Suicide rate in 1999 would have been 17% higher than 1990 but for SSRIs.
- Relationship more pronounced for adults than children.

Need for further studies

- These studies are persuasive for most clinicians and researchers
- However, there has been concern that the newer antidepressants may precipitate suicide in some individuals, particularly in the young.

Table 10.1 SSRI use in young persons who died by suicide

Goldney, 2008

Researchers	Country	Ages (yrs)	No. of suicides	SSRI antidepressants before suicide
Jick <i>et al</i> (2004)	U.K.	10 – 19	15	0
Isacsson <i>et al</i> (2005)	Sweden	< 15	52	0
Moskos <i>et al</i> (2005)	US	13 – 21	49	0
Sondergard <i>et al</i> (2006)	Denmark	10 – 17	42	0
Leon <i>et al</i> (2006)	US	< 18	36	1
Total			194	1

An investigative journalist could be forgiven for asking why only 1 of 194 young persons who died by suicide had been prescribed antidepressants immediately prior to their death, bearing in mind that 2/3 of young suicides have mood disorders and there are studies demonstrating the effectiveness of antidepressants in young persons

Cautionary Note

- Despite previous studies, there is still some evidence indicating that a small percentage of people will have adverse reactions to ADs, and all people who are depressed and their relatives should be aware of the possibility of suicidal behaviour, **both in untreated and treated depression.**
- It is a balancing of potential risks and potential benefits.

Even risk in psychotherapy trial

- Trial of psychotherapy for adolescent depression
- “incidence of emergent suicidality was 12.5%”
- “rates similar to those reported recently in antidepressant trials”

Antidepressants associated with reduced SI and AS

Mulder et al, Acta Psychiatrica Scand, 2008

- 195 depressed patients
- AS reduced from 39 in six months prior to treatment to 20 during next six months
- SI reduced from 47% at baseline to 14% at 3 weeks
- 20 patients had emergent SI, only 5 of whom had not had some suicidal behaviour in six months prior to treatment
- Risk benefit ratio favours use of ADs

Suicide in Bipolar Disorders

- “ever present danger of suicide ... most particularly when the patient is going into or apparently coming out of a psychotic episode”.

Freedman and Kaplan, 1967

- 15 x risk compared to those with no mood disorder.

Harris and Barraclough, 1997

Treatment of Bipolar Disorders with Lithium

Cipriani, et al, *Am J Psychiatry*, 2005

■ Lithium

- Reduced the risk of suicide by 60%
- Reduced the risk of S + AS by 70%

Suicide in Schizophrenia

“The most serious of all schizophrenic symptoms is the suicidal drive”

Bleuler, 1911

- 10% lifetime risk
- 30-40 times higher than general population

De Hert and Peuskens, 2000

- 4.9% lifetime risk

Palmer et al, 2005

Schizophrenia and Clozapine

Meltzer and Okayli, 1995

- "Markedly less suicidality"
- HRS ↓
- AS 25% → 3.5%
- Lethality of attempted suicide ↓
- Seriousness of suicidal intent ↓
- Hopelessness ↓

Schizophrenia and Clozapine

Reid et al, 1998

Suicide rates:

USA – All patients	63.1
	per 100,000
USA – All on Clozapine	15.7
	per 100,000

Practical Assessment and Management

- Establish rapport
- Assess suicidal intent
- Enquire about means of suicide
- Assess mental state
- Management plan

Management plan

- If no mental disorder:
 - catharsis + follow up
- If interpersonal/family issues:
 - catharsis + problem solving approach
 - consider referral to psychologist or social worker
- If mental disorder:
 - Catharsis + standard management for that disorder
 - Appropriate psychotherapeutic support
 - Consider psychiatric referral and psychotropic medication if indicated

A person in the community approach

- The individual clinical approach is not enough for many people.
- A broad approach is desirable, and this has led to broad community treatment approaches and to National Suicide Prevention programmes

US Air Force Study

Knox et al, 2003

Whole of Air Force approach:

- Remove stigma from seeking help
- Enhance Mental Health Literacy
- Administrative policies to facilitate help seeking
- Access to intervention services

US Air Force Study

Knox et al, 2003

1990-1996 period compared to 1997-2002:

Over 5 million Service persons:

- 33% reduction in suicide
- decrease in homicide and family violence

National Programmes

Finland	9% reduction since 1985, after initial increase
Norway	20% reduction since 1989
Sri Lanka	Almost halved since 1995

Results of broad based multi-disciplinary approaches

New Zealand Suicide Prevention Initiatives

- 1994 – The Report and Recommendations of Steering Group on Youth Mental Health and Suicide Prevention
- 1998 – The New Zealand Youth Suicide Prevention Strategy: “In Our Hands” and “Kia Piki te Ora o te Taitamariki”.
- 2006 – New Zealand Suicide Prevention Strategy, 2006 – 2016
- 2008 – New Zealand Suicide Prevention Action Plan 2008 - 2012

Goals of New Zealand Suicide Prevention Action Plan 2008 – 2012 (1)

1. Promote mental health and well being, and prevent mental health problems
2. Improve the care of people who are experiencing mental disorders associated with suicidal behaviour
3. Improve the care of people who make non-fatal suicide attempts
4. Reduce access to the means of suicide

Goals of New Zealand Suicide Prevention Action Plan 2008 – 2012 (2)

5. Promote the safe reporting and portrayal of suicidal behaviour by the media
6. Support families/Whanau, friends and others affected by a suicide or suicide attempt
7. Expand the evidence about rates, causes and effective interventions

Changes in New Zealand

The three year moving average rate of suicide for 2003-2005 was 13.2 deaths per 100,000, a statistically significant decrease of 19% from the 1996-1998 peak of 16.3 per 100,000

Overview of management strategies:

- There is an increasing amount of evidence
- This is not rocket science
- Use of standard treatments

Standard treatments often not given

Marzuk et al, 1995

- 16.4% of 1,635 suicides on psychotropic medication at time of death

Hulten & Wasserman, 1998

- Lack of continuity of care

Waern et al, 1999

- Absence of enquiry about suicidal thoughts

UK National Confidential Inquiry (1999) in the UK and Burgess et al (2000) in Australia considered 22% and 20% respectively of suicides preventable but for:

- poor assessment and treatment
- poor staff-patient communication and relationships
- inadequate supervision
- lack of continuity of care and follow-up
- Unsafe facilities
- Poor staff morale – “malignant alienation”

“Even the staff who provided us with information on their patients, who could be excused for under-estimating, felt that the suicides were preventable in 22% of cases.”

National Confidential Inquiry, 1999.

Chad Buckle – Coroner Evans's report

- Inadequacy of the mental health unit
- Failure to update risk assessment
- Insufficient staffing
- “a system of psychiatric care under serious stress”

Overall:

- Suicidal behaviours are associated with an enormous personal and societal burden
- There are effective management strategies available

Suicide can be prevented

- Probably not all
- Some illnesses too intractable
- Often we are not given a chance to provide assistance
- Assistance may not be available

We need to:

- Remain optimistic
- Lobby for social action in regard to early antecedents
 - e.g. - child abuse
 - domestic violence
 - substance abuse
 - equity of access to services
 - stigma

These need to be lobbied for in their own right, not just for suicide prevention in the future

- Lobby for improvement in knowledge about factors contributing to suicide, with a focus on the relative importance of those risk factors
- Lobby for adequate treatment facilities for those already afflicted with emotional distress