

Suicide prevention: update of the summary of evidence

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Purpose and Summary of Document:

This document has been produced by the Vulnerable Groups Team of the Public Health Wales NHS Trust in conjunction with the Support Unit for Research Evidence at Cardiff University. It updates the document originally published by the National Public Health Service for Wales in 2007. This document brings together evidence relevant to the prevention of suicide and self harm. It adopts a public health approach to prevention and the evidence is presented at four levels. The document is primarily to support the health boards in developing suicide prevention plans but will be of relevance to other agencies and individuals with an interest in suicide and self harm prevention

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Introduction

Suicide and deliberate self harm have significant personal, social and economic consequences. Whilst there seems to be a broad consensus that many suicide deaths are preventable, there is no clear way to predict which individuals are likely to die from suicide and there is no research that demonstrates how suicide can be prevented in any individual¹. Many studies have identified factors associated with an elevated risk of suicide but none of these allow a level of prediction that is clinically useful¹. Despite this, an understanding of the risk factors associated with suicide is useful in targeting interventions at groups with an elevated risk of suicide.

Suicide is a relatively rare event. Because of this and notwithstanding the ethical implications, very large numbers would be needed to conduct randomised controlled trials of interventions to prevent it. As a consequence much of the evidence around suicide prevention focuses on interventions designed to prevent repetition of self harm.

This document is structured on a public health model of suicide prevention adopting a population based approach. This approach attempts to reduce the risk in the whole population by changing attitudes, knowledge, behaviours and norms that might predispose people to suicide.

Using this model suicide prevention can be considered at four levels. These are:

1. Primary prevention – population level. This includes suicide and self harm prevention initiatives that aim to increase public and professional awareness, create a better understanding of suicide and self harm, reduce stigma and encourage health seeking behaviour and measures to remove access to the means of suicide.
2. Early identification. This is also primary prevention but is more selective, targeting interventions at groups who may be at a greater risk of suicide than the general population. This level includes the identification and management of depression, management of substance abuse and mental illness and suicide prevention in prisons.
3. Crisis intervention (secondary prevention). This level addresses interventions for those who have already demonstrated suicidal or self harming behaviour.
4. Postvention (tertiary prevention). This level addresses the consequences of completed suicide. Interventions at this level may be targeted at specific individuals or at specific groups. This level includes helping those bereaved by suicide and the portrayal of suicide by the media.

This document summarises the evidence for interventions that may be of benefit in preventing suicide. The evidence is set out according to the four levels described above.

The review is designed to contribute to the development of policy and practice within Wales. It will support health boards and local authorities in developing suicide prevention

¹ Goldney RD. Prediction of suicide and attempted suicide. In: K Hawton, K Van Heeringen eds. *The international handbook of suicide and attempted suicide*. Chichester: John Wiley; 2000.

initiatives in response to *Talk to me*² the Wales action plan for reducing suicide and self harm. It is anticipated that the document will also be of relevance to other agencies and individuals with an interest in the prevention of suicide and self harm. While every effort has been made to find and briefly summarise the best available evidence, the statements are intended to act as signposts to reliable research, not as guidelines for the management of patients. Readers who are aware of any important studies that have been overlooked are encouraged to contact the project team.

Caveat

This document is a supplement to, not a substitute for, professional skills and experience. Users are advised to consult the supporting evidence for a consideration of all the implications of the recommendation.

² Welsh Assembly Government. *Talk to me. The National action plan to reduce suicide and self harm in Wales 2009-2014*. Cardiff: WAG; 2009. Available at: <http://www.wales.nhs.uk/documents/talktomee%5B1%5D.pdf>

Methodology

The convention used in this document to indicate the type of evidence is:

Type 1 evidence: well-designed systematic review (including at least one randomised controlled trial)

Type II evidence: well-designed randomised controlled trial

Type III evidence: well designed interventional studies without randomisation

Type IV evidence: well designed observational studies

Type V evidence: expert opinion; influential reports and studies

Weightman AL, Mann MK, Sander L, and Turley RL. *Health Evidence Bulletins Wales: A systematic approach to identifying the evidence. project methodology 5*. Cardiff: Information Services UWCM; 2004. Available at <http://hebw.cf.ac.uk/projectmethod/appendix3.htm> [Accessed 23rd Jun 2010]

The use of evidence type rather than evidence hierarchy has been chosen deliberately. Every attempt has been made to find the best available evidence within each topic. Evidence from high quality intervention studies (Types I and II) is included whenever available but other evidence is also cited where relevant. By valuing evidence from randomised controlled trials more highly than other types of study there is a danger that interventions with limited effectiveness might be judged to be more worthy than those based on non-randomised designs. Similarly, non-randomised and observational studies providing strong evidence of effectiveness (thus making a randomised trial unethical) might be undervalued.

Other research is also included, such as qualitative studies, which can provide insights into people's experiences and reveal potential enablers and barriers to the success of a particular intervention. Where no published research was available for a particular topic, expert opinion from influential reports or recommendations is included and this should also be highly regarded.

Although the statements are deliberately brief, statistically significant quantitative information has been provided where possible, using the units of measure provided in the cited publication(s). For guidelines, an indication is given as to whether they are based on a systematic review (evidence based guidelines) and/or developed via the consensus of an expert panel (expert consensus guidelines).

The literature review was carried out to update the evidence included in the first edition of this document³. The following information sources were systematically searched for papers published from January 2005 onwards. Searches were completed in June 2009.

³ National Public Health Service for Wales. [Suicide prevention: summary of the evidence](#). Cardiff: NPHS; 2007.

Databases

ASSIA, BNI, CINAHL, EBM Reviews (Cochrane Library+), Embase, HMIC, Medline, Medline in process, OpenSIGLE, PsycINFO, Social Science Citation Index, Social Services Abstracts, Sociological Abstracts.

Web sites

NHS Evidence Specialist Library (mental health), New Zealand Guidelines Group www.nzgg.org.nz, Canadian Task Force on Preventive Healthcare, United States Preventative Services Task Force AHRQ clinical guidelines www.ahrq.gov/clinic, National Guidelines Clearinghouse www.guideline.org, Australian National Health and Medical Research Council www.nhmrc.gov.au/publications, NHS Evidence National Library of Guidelines <http://www.library.nhs.uk/GuidelinesFinder/>, NHS Scotland, Ireland and Northern Ireland's Population Health Observatory (INiSPHO), NICE, Royal College of Psychiatrists, Sainsbury Centre for Mental Health, SIGN, Department of Health, Royal College of General Practitioners, Welsh Assembly Government.

A search filter was developed and tested. The following terms were used in database subject headings and text words (*=truncation term): Suicide, self injurious behaviour/behaviour, self inflicted wound(s), self mutilate*, self injur*, self harm, self lacerat*, self cut*, self poison*, self immolat*, auto mutilate*, parasuicide*, deliberate overdose, intentional overdose, intended overdose. These search terms were combined with filters to locate studies in Organisation for Economic Cooperation and Development (OECD) countries exploring the primary and secondary prevention of self-harm and suicide. A specific topic search on the media portrayal of suicide was also carried out. A full set of search strategies can be obtained from the project team.

To increase the sensitivity of the search (i.e. its ability to pick up all relevant publications) reference lists of all relevant systematic reviews were also scanned for any additional studies carried out in the UK.

A set of inclusion and exclusion criteria were drawn up with advice from the expert advisory group. In brief the included studies had to be in English and focussed on:

- Interventions to prevent or reduce suicide and self-harm
- Qualitative evidence of views and opinions (barriers and enablers to intervention success)

Specific exclusions were assisted suicide & euthanasia, non-deliberate drug overdose and treatments to save life post suicide attempt.

Where possible, studies based in the UK with a specific suicide or self harm outcome were included. For topics that were not covered by good quality UK based evidence or a reliable systematic review, primary studies from outside the UK were included, with an emphasis on research from countries with a similar suicide rate to the UK (i.e. below the OECD average for male and/or female suicide rates⁴): Australia, Canada, Czech Republic, Denmark, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands,

⁴ National Public Health Service for Wales. [Suicide in Wales: Technical document to support the Suicide prevention action plan for Wales](#). Cardiff: NPHS; 2008. [Accessed 17th May 2010]

Norway, Poland, Portugal, Spain, Slovak Republic, Sweden, United States. Occasionally studies from other countries were included where no other evidence was available. Some studies without a suicide or self-harm outcome were included where no other evidence was available (e.g. suicide awareness training, postvention, media portrayal).

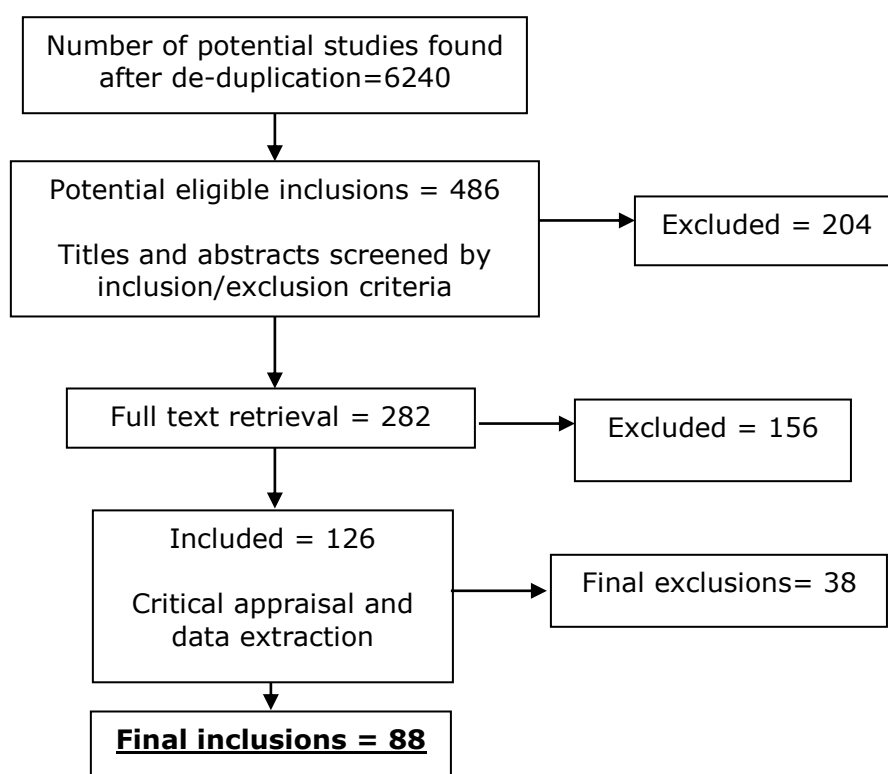
In addition, current National Institute for Health and Clinical Evidence (NICE) guidance (or other UK guidance if no current/recent NICE guidance) and more recent Cochrane reviews were sought to cover:

- Interventions to prevent or reduce suicide, suicidal ideation and self harm
- Interventions for recognised major risk factors for suicide and self harm: including alcohol misuse, drug misuse, eating disorders, mental illness (specifically depression, bi-polar disorder, schizophrenia), personality disorder, chronic physical illness

Where NICE guidance and Cochrane reviews exist for a topic then these were included rather than individual studies unless these studies had been published after the date of the searches used for the guidance or review.

Support Unit for Research Evidence (SURE) critical appraisal check-lists⁵ were used to appraise each study meeting the inclusion criteria. For each paper, critical appraisal and data extraction were carried out by one member of the team and checked by another. This process was overseen by a third member. Major concerns about the methodological quality of a paper were discussed by the project team and led to exclusion of some papers at this stage. A list of excluded papers is available from the project team. Any minor quality concerns (confounders) have been noted in the text.

The stages in the review are illustrated below:



⁵ Weightman AL, Mann MK, Sander L, Turley RL. *Health Evidence Bulletins Wales: A systematic approach to identifying the evidence. Project Methodology 5*. Cardiff: National Public Health Service for Wales; 2004. Available at: <http://hebw.cf.ac.uk/projectmethod/title.htm> [Accessed 20th Apr 2010]

Glossary of terms and symbols⁶

Arm	[In a controlled trial .] Refers to a group of participants allocated a particular treatment . In a randomised controlled trial , allocation to different arms is determined by the randomisation procedure. Many controlled trials have two arms, a group of participants assigned to an experimental intervention (sometimes called the treatment arm) and a group of participants assigned to a control (the control arm). Trials may have more than two arms, with more than one experimental arm and/or more than one control arm.
Attrition	The loss of participants during the course of a study. (Also called loss to follow up .) Participants that are lost during the study are often call dropouts .
Baseline characteristics	Values of demographic, clinical and other variables collected for each participant at the beginning of a trial, before the intervention is administered.
Bias	[In statistics.] A systematic error or deviation in results or inferences from the truth. In studies of the effects of health care, the main types of bias arise from systematic differences in the groups that are compared (selection bias), the care that is provided, exposure to other factors apart from the intervention of interest (performance bias), withdrawals or exclusions of people entered into a study (attrition bias) or how outcomes are assessed (detection bias). Reviews of studies may also be particularly affected by reporting bias , where a biased subset of all the relevant data is available.
Blinding	[In a controlled trial .] The process of preventing those involved in a trial from knowing to which comparison group a particular participant belongs. The risk of bias is minimised when as few people as possible know who is receiving the experimental intervention and who the control intervention. Participants, caregivers, outcome assessors, and analysts are all candidates for being blinded. Blinding of certain groups is not always possible, for example surgeons in surgical trials. The terms single blind, double blind and triple blind are in common use, but are not used consistently and so are ambiguous unless the specific people who are blinded are listed.
Case series	A study reporting observations on a series of individuals, usually all receiving the same intervention , with no control group .
Case study	A study reporting observations on a single individual. (Also called anecdote, case history, or single case report.)
Chi-squared test (χ^2)	The chi-square test is used to determine whether there is a significant difference between the expected frequencies and the observed frequencies in one or more categories.

⁶ Adapted from Cochrane Collaboration glossary of research terms. Available at: <http://www2.cochrane.org/resources/glossary.htm> [Accessed 6th May 2010]

Clinical trial	An experiment to compare the effects of two or more healthcare interventions . Clinical trial is an umbrella term for a variety of designs of healthcare trials, including uncontrolled trials , controlled trials , and randomised controlled trials . (Also called intervention study.)
Cluster randomised trial	A trial in which clusters of individuals (e.g. clinics, families, geographical areas), rather than individuals themselves, are randomised to different arms .
Cochrane Review	Cochrane Reviews are systematic summaries of evidence of the effects of healthcare interventions. They are intended to help people make practical decisions. For a review to be called a 'Cochrane Review' it must be in the Cochrane Database of Systematic Reviews or the Cochrane Methodology Register. The specific methods used in a Review are described in the text of the review.
Cohort study	An observational study in which a defined group of people (the cohort) is followed over time. The outcomes of people in subsets of this cohort are compared, to examine people who were exposed or not exposed (or exposed at different levels) to a particular intervention or other factor of interest. A prospective cohort study assembles participants and follows them into the future. A retrospective (or historical) cohort study identifies subjects from past records and follows them from the time of those records to the present. Because subjects are not allocated by the investigator to different interventions or other exposures, adjusted analysis is usually required to minimise the influence of other factors (confounders).
Concealment of allocation	The process used to ensure that the person deciding to enter a participant into a randomised controlled trial does not know the comparison group into which that individual will be allocated. This is distinct from blinding, and is aimed at preventing selection bias . Some attempts at concealing allocation are more prone to manipulation than others, and the method of allocation concealment is used as an assessment of the quality of a trial.
Confidence interval (CI)	A measure of the uncertainty around the main finding of a statistical analysis. Estimates of unknown quantities, such as the odds ratio comparing an experimental intervention with a control , are usually presented as a point estimate and a 95% confidence interval. This means that if someone were to keep repeating a study in other samples from the same population , 95% of the confidence intervals from those studies would contain the true value of the unknown quantity. Alternatives to 95%, such as 90% and 99% confidence intervals, are sometimes used. Wider intervals indicate lower precision; narrow intervals, greater precision.
Confounder	A factor that is associated with both an intervention (or exposure) and the outcome of interest. For example, if people in the experimental group of a controlled trial are younger than those in the control group , it will be difficult to decide whether a lower risk of death in one group is due to the intervention or the difference in ages. Age is then said to be a confounder, or a confounding variable. Randomisation is used to minimise imbalances in confounding variables between experimental and control groups. Confounding is a major concern in non-randomised studies . See also adjusted analyses

Control	<ol style="list-style-type: none"> 1. [In a controlled trial:] A participant in the arm that acts as a comparator for one or more experimental interventions. Controls may receive placebo, no treatment, standard treatment, or an active intervention, such as a standard drug. 2. [In a case-control study:] A person in the group without the disease or outcome of interest. 3. [In statistics:] To adjust for, or take into account, extraneous influences or observations.
Control group	<ol style="list-style-type: none"> 1. [In a controlled trial:] The arm that acts as a comparator for one or more experimental interventions. See also control. (Also called comparison group.) 2. [In a case-control study:] The group without the disease or outcome of interest. (Also called comparison group.)
Controlled before and after study	A non-randomised study design where a control population of similar characteristics and performance as the intervention group is identified. Data are collected before and after the intervention in both the control and intervention groups.
Controlled clinical trial (CCT)	Trials using quasi-randomisation, or trials where double blinding was used but randomisation was not mentioned.
Controlled trial	A clinical trial that has a control group . Such trials are not necessarily randomised.
Cross-sectional study	A study measuring the distribution of some characteristic(s) in a population at a particular point in time. (Also called a survey .)
Degrees of freedom (df)	A concept that refers to the number of independent contributions to a sampling distribution (such as chi-squared distribution). In a contingency table , it is one less than the number of row categories multiplied by one less than the number of column categories; e.g. a 2 x 2 table comparing two groups for a dichotomous outcome , such as death, has one degree of freedom.
Dependent variable	The outcome or response that results from changes to an independent variable . In a clinical trial , the outcome (over which the investigator has no direct control) is the dependent variable, and the treatment arm is the independent variable. The dependent variable is traditionally plotted on the vertical axis on graphs. (Also called outcome variable.)
Experimental study	A study in which the investigators actively intervene to test a hypothesis . In a controlled trial , one type of experiment, the people receiving the treatment being tested are said to be in the experimental group or arm of the trial.
Follow up	The observation over a period of time of study/trial participants to measure outcomes under investigation.

Heterogeneity	<ol style="list-style-type: none">1. Used in a general sense to describe the variation in, or diversity of, participants, interventions, and measurement of outcomes across a set of studies, or the variation in internal validity of those studies.2. Used specifically, as statistical heterogeneity, to describe the degree of variation in the effect estimates from a set of studies. Also used to indicate the presence of variability among studies beyond the amount expected due solely to the play of chance.
Hypothesis	<ol style="list-style-type: none">1. Used in a general sense to describe the variation in, or diversity of, participants, interventions, and measurement of outcomes across a set of studies, or the variation in internal validity of those studies.2. Used specifically, as statistical heterogeneity, to describe the degree of variation in the effect estimates from a set of studies. Also used to indicate the presence of variability among studies beyond the amount expected due solely to the play of chance.
Hypothesis test	A statistical procedure to determine whether to reject a null hypothesis on the basis of the observed data.
Intention to treat analysis	A strategy for analysing data from a randomised controlled trial . All participants are included in the arm to which they were allocated, whether or not they received (or completed) the intervention given to that arm. Intention-to-treat analysis prevents bias caused by the loss of participants, which may disrupt the baseline equivalence established by randomisation and which may reflect non-adherence to the protocol.
Interaction	The situation in which the effect of one independent variable on the outcome is affected by the value of a second independent variable. In a trial, a test of interaction examines whether the treatment effect varies across sub-groups of participants .
Interrupted time series	A research design that collects observations at multiple time points before and after an intervention (interruption). The design attempts to detect whether the intervention has had an effect significantly greater than the underlying trend.
Intervention	The process of intervening on people, groups, entities or objects in an experimental study . In controlled trials , the word is sometimes used to describe the regimens in all comparison groups , including placebo and no-treatment arms . See also treatment, experimental intervention and control .
Intervention group	A group of participants in a study receiving a particular health care intervention . Parallel group trials include at least two intervention groups
Logistic regression	A form of regression analysis that models an individual's odds of disease or some other outcome as a function of a risk factor or intervention . It is widely used for dichotomous outcomes, in particular to carry out adjusted analysis .
Meta-analysis	The use of statistical techniques in a systematic review to integrate the results of included studies. Sometimes misused as a synonym for systematic reviews, where the review includes a meta-analysis.

Non randomised study	Any quantitative study estimating the effectiveness of an intervention (harm or benefit) that does not use randomisation to allocate units to comparison groups (including studies where 'allocation' occurs in the course of usual treatment decisions or peoples' choices, i.e. studies usually called 'observational'). To avoid ambiguity, the term should be substantiated using a description of the type of question being addressed. For example, a 'non-randomised intervention study' is typically a comparative study of an experimental intervention against some control intervention (or no intervention) that is not a randomised controlled trial . There are many possible types of non-randomised intervention study, including cohort studies , case-control studies , controlled before-and-after studies , interrupted-time-series studies and controlled trials that do not use appropriate randomisation strategies (sometimes called quasi-randomised studies).
Null hypothesis	The statistical hypothesis that one variable (e.g. which treatment a study participant was allocated to receive) has no association with another variable or set of variables (e.g. whether or not a study participant died), or that two or more population distributions do not differ from one another. In simplest terms, the null hypothesis states that the factor of interest (e.g. treatment) has no impact on outcome (e.g. risk of death).
Observational study	A study in which the investigators do not seek to intervene, and simply observe the course of events. Changes or differences in one characteristic (e.g. whether or not people received the intervention of interest) are studied in relation to changes or differences in other characteristic(s) (e.g. whether or not they died), without action by the investigator. There is a greater risk of selection bias than in experimental studies . See also randomised controlled trial . (Also called non-experimental study .)
Odds	A way of expressing the chance of an event, calculated by dividing the number of individuals in a sample who experienced the event by the number for whom it did not occur. For example, if in a sample of 100, 20 people died and 80 people survived the odds of death are $20/80 = \frac{1}{4}$, 0.25 or 1:4.
Odds ratio	The ratio of the odds of an event in one group to the odds of an event in another group. In studies of treatment effect , the odds in the treatment group are usually divided by the odds in the control group . An odds ratio of one indicates no difference between comparison groups . For undesirable outcomes an OR that is less than one indicates that the intervention was effective in reducing the risk of that outcome. When the risk is small, odds ratios are very similar to risk ratios . (Also called OR .)
Participant	An individual who is studied in a trial, often but not necessarily a patient.
P value	The probability (ranging from zero to one) that the results observed in a study (or results more extreme) could have occurred by chance if in reality the null hypothesis was true. In a meta-analysis , the P-value for the overall effect assesses the overall statistical significance of the difference between the intervention groups .

Randomised controlled trial	An experiment in which two or more interventions, possibly including a control intervention or no intervention, are compared by being randomly allocated to participants. In most trials one intervention is assigned to each individual but sometimes assignment is to defined groups of individuals (for example, in a household) or interventions are assigned within individuals (for example, in different orders or to different parts of the body).
Regression analysis	A statistical modelling technique used to estimate or predict the influence of one or more independent variables on a dependent variable , e.g. the effect of age, sex, and educational level on the prevalence of a disease. Logistic regression and meta-regression are types of regression analysis
Risk	The proportion of participants experiencing the event of interest. Thus, if out of 100 participants the event (e.g. a stroke) is observed in 32, the risk is 0.32. The control group risk is the risk amongst the control group. The risk is sometimes referred to as the event rate, and the control group risk as the control event rate. However, these latter terms confuse risk with rate .
Statistical significance	A result that is unlikely to have happened by chance. The usual threshold for this judgement is that the results, or more extreme results, would occur by chance with a probability of less than 0.05 if the null hypothesis was true. Statistical tests produce a p-value used to assess this.
Variable	A result that is unlikely to have happened by chance. The usual threshold for this judgement is that the results, or more extreme results, would occur by chance with a probability of less than 0.05 if the null hypothesis was true. Statistical tests produce a p-value used to assess this.

Level 1. Primary prevention population level interventions

This section addresses initiatives for primary prevention of suicide and self harm that are targeted at the whole population.

1.1. General population level suicide and self harm prevention

Nationwide suicide prevention strategies

The ***National suicide prevention strategy for England*** was launched in 2002. This had six goals for action to support the target to reduce the death rate from suicide and undetermined injury by at least a fifth by 2010

1. To reduce risk in key high risk groups
2. To promote mental well-being in the wider population
3. To reduce the availability and lethality of suicide methods
4. To improve reporting of suicidal behaviour in the media
5. To promote research on suicide and suicide prevention
6. To improve monitoring of progress towards the *Saving Lives: Our Healthier Nation* target for reducing suicide

The baseline suicide rate was 9.2 deaths per 100,000 population (1995/6/7). The most recent progress report shows a rate of 7.9 deaths per 100,000 population (2005/6/7)

The ***National suicide prevention strategy for Scotland*** was launched in 2002. This was the first phase of a comprehensive 10-year plan with the goal of reducing the suicide rate in Scotland by 20% by 2013. The strategy sets out 7 objectives to support the achievement of this goal

1. Early prevention and intervention
2. Responding to immediate crisis
3. Longer term work to provide hope and support recovery
4. Coping with suicidal behaviour and completed suicide
5. Promoting greater public awareness and encouraging people to seek help early
6. Supporting the media
7. Knowing what works

Based on three-year rolling averages there was a 10% fall in suicide rates between 2000-02 and 2006-08. These rates have shown little change since 2003-05 although rates in men have increased marginally in the latest 3-year period.

Supporting evidence

Type IV evidence
Before and after study

Department of Health. *National suicide prevention strategy for England*. London: DoH; 2002. Available at: http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_4019548.pdf [Accessed 6th May 2010]

National Mental Health Development Unit. *National suicide prevention strategy for England. Annual report of progress 2008*. Leeds: National Mental Health Development Unit; 2008. Available at: <http://www.nmhd.org.uk/silo/files/national-suicide-prevention-strategy-for-england--annual-report-on-progress-2008.pdf> [Accessed 6th May 2010]

Type IV evidence
Before and after study

Scottish Executive. *Choose life: the national strategy and action plan to prevent suicide in Scotland*. Edinburgh: The Scottish Executive; 2002. Available at: <http://www.scotland.gov.uk/Resource/Doc/46932/0013932.pdf> [Accessed 6th May 2010]

Russell P et al. *Evaluation of phase 2 of Choose life*. Edinburgh: Scottish Government Social Research; 2010. Available at: <http://www.scotland.gov.uk/Resource/Doc/308323/0097115.pdf> [Accessed 6th May 2010]

National suicide prevention initiatives

This review examined the evidence for the effectiveness of **specific suicide preventative interventions**. The search covered 1966 to June 2005. Included studies were 10 systematic reviews and meta-analyses, 18 randomised controlled trials, 24 cohort studies and 41 ecological or population based studies. The countries where the studies took place included the UK, USA, Hungary, Slovenia, Japan, Germany, Australia, New Zealand, Brazil and Norway.

Heterogeneity of the study populations prevented meta-analysis so a narrative synthesis was used.

The authors concluded that physician education in depression recognition and treatment and restricting access to lethal means reduces suicide rates. Other interventions including public education, screening programs and media education need more testing.

Supporting evidence

Type V evidence
Literature review

Mann JJ et al. Suicide prevention strategies: A systematic review. *JAMA* 2005; 294: 2064-74.

Some methodological weaknesses. No mention of reference list follow up or hand search. The search terms are provided but are not comprehensive. No presentation of search results. The included languages are not specified.

Interventions to encourage help seeking

The **US Air Force suicide programme** was introduced in response to an increase in suicide rates amongst Air Force personnel. The intervention aimed to remove the stigma of seeking help for mental health or psychosocial problems, enhance understanding of mental health and to change policies and social norms. The initiatives included;

- Suicide awareness education and training in squadron commander courses
- Suicide prevention in military education curriculum
- Guidelines for commanders on use of mental health services to improve referral of active duty members for mental health evaluation, emphasis on mental health professionals being seen by commanders as partners in improving duty performance
- Strengthening preventative role of mental health personnel
- Community education and training for non-professionals in understanding suicide, intervention skills and referral procedures for people potentially at risk
- Changes in policies to ensure individuals under investigation for legal problems are assessed for suicide risk
- Establishment of critical incident stress management team to respond to traumatic events including completed suicides

Participants were 5,260,292 US Air Force personnel on active duty between 1990 and 2002, 84% were male. The prevention programme was implemented in 1996 and is ongoing. This study reports the effectiveness of the first six years.

Implementation of the programme was associated with a sustained decline in the rate of suicide and other adverse outcomes such as domestic violence. A 33% (95% CI 0.57 to 0.80) relative risk reduction was observed for suicide after the intervention.

Supporting evidence

Type IV evidence
Before and after study

Knox KL et al. Risk of suicide and related adverse outcomes after exposure to a suicide prevention programme in the US Air Force: cohort study. *BMJ* 2003; 327: 1376.

Consideration needs to be given to whether similar results would be found in different populations. 84% of the population in this study were male.

1.2. Primary prevention of suicide and self harm interventions for children and young people

Classroom based preventative interventions

Signs of suicide (SOS) is a **school based prevention programme** developed in the USA. It combines a curriculum that aims to raise awareness of suicide and its related issues with brief screening for depression and other risk factors associated with suicidal behaviour. It focuses on two risk factors, depression and problematic use of alcohol.

The evaluation involved 4,133 students in 9 high schools in the USA. Self administered questionnaires were completed by students 3 months after programme implementation.

Significantly lower rates of suicide attempts were reported among students in the intervention group who were approximately 40% less likely to report a suicide attempt in the past 3 months compared with those in the control group (OR = $e^{-.47} = 0.63$), equating to a three-month rate of suicide attempts in the SOS group of 3.0%, compared to 4.6% among controls.

The effects of the SOS program on suicidal ideation did not achieve statistical significance.

Supporting evidence

Type II evidence
Randomised controlled trial

Aseltine RH Jr et al. Evaluating the SOS suicide prevention program: a replication and extension. *BMC Public Health*. 2007; 7: 161.
Available at:

<http://www.biomedcentral.com/1471-2458/7/161> [Accessed 17th Jul 2009]

This study relied on self-reports of suicide attempts. Participants were not blinded as to whether they were in the intervention or control group. Because classes rather than schools were assigned to intervention or control it is likely that there was contamination of the control group.

The reporting of the statistical methods used was poor and no confidence intervals were provided. The follow up period was very short. The findings of this study may not be generalisable to the UK.

Two class room based universal preventative interventions for suicidal ideation and suicide attempts were tested against controls.

The **Good Behaviour Game** was directed at socialising children for the student role and reducing aggressive, disruptive behaviour. **Mastery Learning** was aimed at improving academic achievement. Two cohorts were used but only cohort 1 fully described in this study.

Cohort 1: Controls = 684, Mastery Learning = 274, The Good Behaviour Game = 238. The interventions lasted for two years. Results were assessed by face-to-face interviewing 15 years after school entry when participants were aged 19 to 21 years.

No statistically significant impact on either suicide ideation or suicide attempts was found for Mastery Learning.

The Good Behaviour Game reduced the risk of suicide ideation (full adjustment) odds ratio = 0.4 (95% CI 0.2-0.9) p= 0.044. This reduction in suicide ideation was observed regardless of adjustment.

The Good Behaviour Game reduced the risk of suicide attempt (full adjustment) odds ratio = 0.3 (95% CI 0.1-0.7) p= 0.008 but this reduction in suicide attempt was not observed with all adjusted models i.e. Model 2 and 3.

In cohort 2 the impact of the Good Behaviour Game was greatly reduced, the authors argued that classroom variability and heterogeneity across the 3 control conditions were markedly higher in the second cohort compared to the first; hence, statistical power was reduced.

Supporting evidence

Type III evidence

Controlled clinical trial

Wilcox HC et al. The impact of two universal randomized first- and second-grade classroom interventions on young adult suicide ideation and attempts. *Drug Alcohol Depend* 2008; 95(SUPPL 1): S60-S73.

This study took place in the USA where Mastery Learning is a widely used teaching strategy, these interventions may not generalise to a UK setting.

It was not possible for teachers and pupils to be blinded to whether the intervention or control was delivered so this is a potential source of bias. Suicide attempts were self reported and caregiver data was collected retrospectively, both potential sources of bias.

NB: Model 1 unadjusted; Model 2 adjusted for gender, race, and baseline levels of aggressive, disruptive behaviour, depression, and anxiety as measured in Fall of first grade; Model 3 adjusts for covariates in Model 2 as well as caregiver suicidality and mental illness that were obtained retrospectively at the young adult interviews; Model 4 is Model 2 plus terms to capture a hypothesized interaction of design and baseline aggressive, disruptive behaviour, depression, and anxiety

Adolescents views on preventing self harm

2,954 pupils from 41 secondary schools in England responded to the open-ended question in a self-report anonymous questionnaire:

“What do you think could be done to help prevent young people from feeling that they want to harm themselves?”

11 broad categories of responses were identified covering causes and possible ways of preventing suicidal behaviour in young people, including; the primacy of informal social networks over professional organisations, the importance of confiding stable relationships, the need for structured group activities, and the key role that schools play in young peoples lives.

Conclusions: The adolescents in this study considered family, friends and school as the main sources of support in preventing suicidal behaviour, and more pertinent than external helping agencies. Enhancing the provision of school-based mental health programmes and increased youth-orientation in helping services are indicated.

Supporting evidence

Type IV evidence
Questionnaire survey

Fortune S, Sinclair J, Hawton K. Adolescents' views on preventing self-harm. *Soc Psychiatry Psychiatr Epidemiol* 2008; 43: 96-104.

1.3. Reducing access to the means of suicide

Safety barriers

In 1996 suicide **safety barriers** were removed from a central city bridge in an Australasian metropolitan area after having been in place for 60 years.

Removal of the barriers was followed by a substantial increase in suicides by jumping from the site. In the period 1992 – 1995 there were three suicides, from 1997-2000 there were fifteen ($\chi^2 = 8$, $df = 1$, $p < 0.01$).

Following the removal of the barriers the rate of suicides by jumping in the metropolitan area in question did not change but the pattern changed significantly with more suicides from the bridge and fewer at other sites.

From a study based on Coroner's inquest files, the number of deaths by jumping from the Clifton Suspension Bridge in Bristol halved following the **construction of barriers** from 8.2 per year (1994–1998) to 4.0 per year (1999–2003).

Difference in means -4.2 (95% CI -5.9 to -1.4 ; $p = 0.008$) in the 5 years after the construction of the barriers compared with the previous 5 years.

The decline in deaths was only observed in men (90%, 55/61, of the deaths were male).

Supporting evidence

Type IV evidence
Retrospective before and after study

Beautrais A L. Effectiveness of barriers at suicide jumping sites: a case study. *Aust N Z Psychiatry* 2001; 35: 557-62.

Author's limitations: Full coronial data for suicides by jumping were not available after 1998 although data for suicides from the bridge were available up until 2000. These restrictions on data availability reduce the statistical precision of the before and after comparisons reported. All data are based on official records and are subject to the imprecision's of official data.

Type IV evidence
Retrospective before and after study

Bennewith O, Nowers M, Gunnell D. Effect of barriers on the Clifton Suspension Bridge, England, on local patterns of suicide: implications for prevention. *Br J Psychiatry* 2007; 190: 266-7.

Small sample number, 41 in 1994-1998 and 20 in 1999-2003. Authors state that any impact on female suicide rates would be minimal as only one woman jumped from the bridge in the 5yrs prior to the installation of the barriers. In addition in the 5 years after the construction of the barriers there was a non-significant increase compared with the previous 5 years in the number of deaths by jumping from sites other than the suspension bridge: from 6.2 deaths per year to 8.4 deaths per year ($p=0.2$). This increase was entirely due to a rise in female deaths by jumping – in keeping with national trends in female suicide by jumping.

This study from the USA assessed the effectiveness of installing a **safety fence** at the Memorial Bridge in Augusta, Maine. The study covered a period of 22 years and 2 months from 1 April 1960 to 31 July 2005. The safety fence was installed during 1983.

A total of 14 suicides involving the Memorial Bridge were identified from death certificates; all occurred before installation of the safety fence.

From 1960 until the installation of the safety fence (22/23 years), there were nine suicides in Augusta from jumping from a high place (n=3) or drowning (n=6) that were not associated with the Memorial Bridge. Only one of these deaths involved jumping from a bridge. After installation of the safety fence, until 2005 (22/23 years), there were nine suicides in Augusta from jumping from a high place (n=3) or drowning (n=6) not associated with the Memorial Bridge. Two of these deaths involved jumping from a bridge.

The study author concluded that the safety fence was effective in preventing suicides from the bridge. There was no evidence that suicidal individuals sought alternative sites for jumping.

This study examined the effectiveness of installing **platform screen doors** for preventing railway suicides.

Based on evidence from the Coroner's Court, a significant decrease in the 5-year average annual number of railway suicides in Hong Kong was observed from 10.2 cases for the pre-installation period to only 4.4 for the post-installation period, which accounted for an age and gender adjusted 5-year average percentage change of -59.9% ($p=0.0003$) by Poisson regression analysis.

No significant evidence of any transition trend of railway suicides was found ($p=0.614$). This indicated that such a dramatic change was very likely to be a result of limiting passengers' access to the railway track by platform screen doors, rather than a natural transition in suicide epidemiology.

Analyses suggested that there was no significant sign of substitution by displacing potential attempters to unsealed platforms ($p=0.9051$).

Supporting evidence

Type IV evidence
Retrospective before and after study

Pelletier AR. Preventing suicide by jumping: the effect of a bridge safety fence. *Inj Prev* 2007; 13: 57-9.

Data for 1968 were not available. Electronic death records from 1960 to 1974 did not meet current data quality standards. Data was not available for non-fatal incidents involving the Memorial Bridge. Focusing only on deaths underestimated the public health effect of suicide attempts from the bridge.

Type IV evidence
Retrospective before and after study

Law CK et al. Evaluating the effectiveness of barrier installation for preventing railway suicides in Hong Kong. *J Affect Disord* 2009; 114: 254-62.

The study accounted for less than 1% of all suicides and is therefore not sufficient to assess the existence of substitution.

Packaging and presentation of drugs

Legislation on the packaging of paracetamol and salicylates was introduced in the UK September 1998; this restricted the number of tablets that could be sold in one transaction. This study assessed the impact of this legislation on suicidal behaviour.

The annual number of deaths from paracetamol poisoning decreased by 21% (95% CI 5% to 43%) and the number from salicylates decreased by 48% (11% to 70%). The average number of tablets taken in paracetamol overdoses decreased by 7% (95% CI 0% to 12%) and the proportion involving >32 tablets decreased by 17% (95% CI 4% to 28%). The average number of tablets taken in salicylate overdoses did not decrease.

The authors concluded that legislation restricting pack sizes had substantial beneficial effects on mortality and morbidity associated with these drugs.

80 Patients admitted to hospital because of **paracetamol overdoses** were studied in order to determine their **characteristics and factors** which might have deterred them from taking paracetamol or reduced the dangers of the overdose.

25 patients with acute liver dysfunction were associated with the consumption of more than 25 tablets (odds ratio 4.46, 95% CI 1.31 to 17.41, $p=0.014$). The proportionate use of tablets from blister packs (60%) and loose preparations (46%, some patients used both types) reflected their general availability. More of those who took tablets from a loose preparation consumed 25 or more tablets (odds ratio = 3.0, 95% CI 1.12 to 9.95, $p=0.028$).

Supporting evidence

Type IV evidence
Retrospective before and after study

Hawton K et al. Effects of legislation restricting pack sizes of paracetamol and salicylate in the United Kingdom: before and after study. *BMJ* 2001; 322:1203 – 7.

Type IV evidence
Cross sectional study

Hawton K et al. Paracetamol self-poisoning. Characteristics, prevention and harm reduction. *Br J Psychiatry* 1996; 168: 43-8.

This study, undertaken in the UK, evaluated **whether** the recent **fall in** the number of **paracetamol deaths is different to trends in fatal poisoning** involving aspirin, paracetamol compounds, antidepressants, or non drug poisoning suicide. Paracetamol deaths (from the Office for National Statistics' drug-poisoning deaths database) were compared against poisoning deaths involving compound paracetamol (not covered by the regulations), aspirin, antidepressants and non poisoning suicide deaths.

There was a downward step-change (trend) in the annual age-standardised mortality rate for paracetamol deaths, of -2.69 per million ($p < 0.003$) across the pre and post intervention periods, but no evidence of a change in slope ($p < 0.128$) in the post intervention period. The time series for paracetamol compounds differed from paracetamol, having a greater step-change (coefficient = 0.81; $p = 0.012$) and greater post intervention decline (coefficient = -0.19; $p = 0.031$). The change in trends for aspirin or antidepressants appeared to be no different to the change in paracetamol trends.

The number of non drug poisoning suicides increased slightly during the transition period, 1998-2000, but this may have been due to random annual variation.

The authors concluded that there is little evidence to support the hypothesis that the 1998 regulations limiting pack size resulted in a greater reduction in poisoning deaths than occurred for other drugs or non-drug poisoning suicides.

Use of bittering agents

The impact of bittering agents on suicidal ingestions of antifreeze was assessed by comparing suicidal **antifreeze ingestions** after bittering requirements introduced ($n=130$) with states (or at times) where bittering was not required ($n=3,493$).

There was no significant change in the frequency of ethylene glycol suicidal ingestions in California and Oregon after implementation of bittering legislation. There was a suggested *increase* in the absolute count of ethylene glycol suicidal cases 66 vs 94 for 18 month pre- and post- implementation periods and in the percentage of all suicidal cases from pre-implementation to post-implementation periods (0.216% to 0.291%) but this increase did not reach statistical significance ($p = 0.06$).

The authors of the study concluded that the addition of bittering agents to antifreeze for the purpose of limiting the frequency or severity of suicidal ingestions could not be justified using U.S. poison control data.

Supporting evidence

Type IV evidence
Retrospective interrupted time series

Morgan OW, Griffiths C, Majeed A. Interrupted time-series analysis of regulations to reduce paracetamol (acetaminophen) poisoning. *PLoS Med* 2007; 4: 654-9.

Because of the study design it is impossible to rule out other explanations for observed changes in time series. It would not be ethical, or appropriate to use a different design.

Supporting evidence

Type IV evidence
Retrospective cohort

White NC et al. The impact of bittering agents on suicidal ingestions of antifreeze. *Clin Toxicol* 2008; 46: 507-14.

The study design chosen may not be the most appropriate. A before and after analysis on the 2 states involved with bittering regulations might have been better.

Longer follow-up might have been beneficial because this element of the study coincided with publicity surrounding antifreeze poisoning.

Level 2: Primary prevention in those at increased risk of suicide and self harm

This section is concerned with primary prevention of suicide and self harm and considers interventions targeted at groups who may be at greater risk of suicide than the general population. Interventions at this level aim to identify at risk groups and address the factors that put them at risk of suicide. A table of risk factors associated with suicide is included at appendix I.

2.1. Screening for suicide risk

Routine screening in primary care

The United States Preventative Services Task Force (USPSTF) has concluded that there is insufficient evidence to recommend for or against **routine screening** by primary care clinicians to detect suicide risk in the general population.

This recommendation is based on systematic literature review from 1966 to June 30 2002. Only 1 cohort study evaluating a screening tool for suicide risk was identified.

Screening psychiatric patients

A 10 year prospective study in the USA of 207 patients who had been admitted to hospital with suicidal thinking found that a score of 10 or more on the **Beck Hopelessness Scale** correctly identified 91% of eventual suicides.

The number of true positives, (that is individuals who scored 10 or more and eventually died by suicide) was 10 but there were 76 false positives. The high proportion of false positive limits the clinical usefulness of the scale.

A 7 year prospective study in the USA of 1, 958 psychiatric outpatients showed that a score of 9 or above on the **Beck Hopelessness scale** correctly identified 16 of the 17 patients who died by suicide during the follow up period. However the group with this score included 1145 individuals who did not die by suicide.

Using the Beck Depression Score and a cut-off score of 23 or above identified a group of 743, 13 of whom died by suicide during the follow up period. The high number of false positives identified by these scales limits their clinical application.

Supporting evidence

Evidence based guideline.

Gaynes BN et al. Screening for suicide risk: recommendation and topic area. *Ann Intern Med* 2004; 140: 820-1.

Supporting evidence

Type IV evidence

Cohort study

Beck AT. Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *Am J Psychiatry* 1985; 142: 559-63.

Type IV evidence

Cohort study

Beck AT et al. Relationship between hopelessness and ultimate suicide: a replication with psychiatric outpatients. *Am J Psychiatry* 1990; 147:190-95.

This multicentre study, involving 980 patients aged 18 to 65 in 11 countries, examined the ability of the International Suicide Prevention Trial (InterSePT) **Scale for Suicidal Thinking (ISST)** and the **Calgary Depression Scale (CDS)** to predict suicide attempts or hospitalisations to prevent attempts (referred to as Type 1 events) during the InterSePT trial.

The ratings of patients adjusted to have experienced a Type 1 event (Group 1) were compared with patients who did not (Group 2). The ISST and CDS ratings taken 2-8 weeks before a Type 1 event (pre-1) and 2-12 weeks before that (pre-2) were analysed to test the hypothesis that the difference between these two measures was significantly greater for Group 1 than Group 2.

Patients with type 1 events showed a greater worsening in both ISST and CDS ratings between two measures taken before the event than control patients but the sensitivity and specificity of a worsening in ratings was not sufficient to provide definitive warning of an impending Type 1 event. Other characteristics of the patients with Type 1 event provide additional warning e.g. overall higher ratings on these scales, slower improvement in suicidality during treatment and previous number of suicide attempts.

The countries included, at the time of the study, were Argentina, Canada, Croatia, Chile, Czechoslovakia, France, Hungary, Italy, South Africa, UK and USA.

The authors state that ISST and CDS ratings are not sufficient for use on their own but may provide some additional information that can assist clinical decision making regarding patients with schizophrenia and schizoaffective disorder.

Supporting evidence

Type IV evidence

Case control study

Ayer DW, Jayathilake K, Meltzer HY. The InterSEPT suicide scale for prediction of imminent suicidal Behaviors. *Psychiatry Res* 2008; 161: 87-96.

Screening school students

This study involved 2,342 students aged 13-19 years in 6 high schools in New York State, USA in 2002-2004 (80.3% white, 58.1% boys). It examined whether **asking about suicidal ideation or behaviour during a screening program** creates distress or increases suicidal ideation among high school students generally or among high-risk students reporting depressive symptoms, substance use problems or suicide attempts.

Students exposed to suicide questions as part of a screening programme for mood, depression, suicidal ideation/attempt and substance use, were no more likely to report suicidal ideation two days after the survey than unexposed students (4.7% and 3.9% respectively; odds ratio = 1.20 (95% CI 0.72 to 2.00); $p=0.49$).

On the contrary, students with a previous suicide attempt in the experimental group appeared less suicidal (they showed lower levels of distress and suicidal ideation) than those with previous suicide attempts in the control group. Odds ratio = 0.17 (95% CI 0.04 to 0.72); $p=0.02$.

Supporting evidence

Type II evidence
Controlled clinical trial

Gould MS et al. Evaluating iatrogenic risk of youth suicide screening programs. A randomized controlled trial. *JAMA* 2005; 293: 1635-43.

There are some significant methodological problems. No concealment of allocation. No baseline data were presented although no significant differences are reported in the text. It is not possible to tell if study personnel were blinded. Suicidal ideation was assessed by a validated questionnaire (SIJ-JR) but interim suicidality (i.e. feelings since the first survey) was assessed by questions that do not appear to have been validated. It is unclear if the findings of this study would generalise to other settings.

2.2 Identification and management of depression

Screening adults for depression in primary care

The United States Preventative Services Task Force (USPSTF) **recommends screening adults for depression** when staff assisted depression care supports are in place to assure accurate diagnosis, effective treatment and follow up (Grade B recommendation; there is a high certainty that the net benefit is moderate or there is moderate certainty that the net benefit is moderate to substantial)

The USPSTF recommends against routinely screening adults for depression when staff assisted depression care supports are not in place. There may be considerations that support screening for depression in an individual patient (Grade C recommendation; The USPSTF recommends against routinely providing the service. There may be considerations that support providing the service in an individual patient. There is a moderate or high certainty that the net benefit is small).

The recommendations were based on a systematic literature review from 1998 to December 2007. 7 screening studies, either randomised or controlled clinical trials were included with a total of 2,559 participants.

Education for primary care practitioners

A randomised controlled trial was used in 60 primary care practices in an English health district to assess the effectiveness of an educational programme, based on a **clinical practice guideline**, for improving the recognition and outcome of depression.

The education was well received by participants 80% of whom thought it would change their management of patients with depression. 21,409 patients were screened of whom 4,192 were classified as depressed by the hospital anxiety and depression scale (HAD). The sensitivity of physicians to depressive symptoms was 39% in the intervention group and 36% in the control group after education (odds ratio 1.2, 95% CI 0.88 to 1.61).

The outcome for depressed patients as a whole, at 6 weeks or 6 months after the assessment did not significantly improve.

Supporting evidence Evidence based guideline

U.S. Preventative Services Task Force. Screening for depression in adults: US Preventative Services Task Force recommendation statement. *Ann Intern Med* 2009; 151: 784-93.

Supporting evidence Type II evidence Randomised controlled trial

Thompson C et al. Effects of a clinical-practice guideline and practice-based education on detection and outcome of depression in primary care: Hampshire Depression Project randomised controlled trial. *Lancet* 2005; 355: 185-91.

In Sweden an **educational programme** on the symptoms, diagnosis, prevention and treatment of depression was offered to all GPs on the island of Gotland. 10 completed the programme. After the programme, compared with mainland Sweden, there was a non significant decrease in the number of suicides ($\chi^2 = 3.3$), a significant increase in the prescription of antidepressants ($\chi^2 = 23.0$, $p < 0.001$) and a decrease in the prescription of major tranquilisers, sedatives and hypnotics.

Three years after the project ended, inpatient care for depressive disorders had increased, the prescription of antidepressants had stabilised and the suicide rate had returned almost to baseline. The authors concluded that the effects were related in time to the educational programme indicating that that they were real and not only a coincidence with local effects on Gotland. They recommended that educational programmes should be repeated every two years for long term effects.

Community based programmes for depression

The **Nuremberg Alliance Against Depression** was a 2 year intervention programme for improving the care of people with depression implemented in Germany. The programme had four levels: Training of family doctors and support through different methods; a public relations campaign informing about depression; cooperation with community facilitators (teachers, priests, local media, etc.); and support for self-help activities and support for high-risk groups.

The programme was assessed by comparing the baseline number of suicidal acts (completed and attempted suicides) and those following the intervention in Nuremberg and the control region. Since suicide is a rare event suicidal acts was used as the outcome to give the study sufficient power to detect any difference between baseline and follow up rates. The number of suicide attempts in Nuremberg fell from 520 at baseline to 425 (-18.3%) during the first intervention year and to 382 (-26.5%) in the second intervention year. In the control region Wuerzburg, the number of suicide attempts changed from 125 at baseline to 140 (+12.0%) during the first and 156 (+24.8%) during the second intervention year. Suicide attempts in both Nuremberg and Wuerzburg were classified as such on the basis of an interview undertaken as part of the WHO/EURO Multicentre Study on Suicidal Behaviour.

Compared to the control region, a reduction in frequency of suicidal acts was observed in Nuremberg during the 2-year intervention (2001 v. 2000: -19.4%; $p \leq 0.082$; 2002 v. 2000: -24%, $p \leq 0.004$). Considering suicide attempts only (secondary outcome criterion), the same effect was found (2001 v. 2000: -18.3%, $p \leq 0.023$; 2002 v. 2000: -26.5%, $p < 0.001$). The reduction was most noticeable for high-risk methods (e.g. hanging, jumping, and shooting).

Supporting evidence

Type III evidence
Controlled before and after study

Rutz W, von Knorring L, Walinder J. Long-term effects of an educational program for general practitioners given by the Swedish Committee for the Prevention and Treatment of Depression. *Acta Psychiatr Scand* 1992; 85: 83-8.

Supporting evidence

Type III evidence
Controlled before and after study

Hegerl U et al. The alliance against depression: 2-year evaluation of a community-based intervention to reduce suicidality. *Psychol Med* 2006; 36:1225-33.

This was a pilot study and provides weak evidence of the effectiveness of the programme. The authors noted that the intervention (industrial city) and control (smaller University town) sites differed in demographic characteristics. They deemed differences between control and intervention groups were tolerable as the focus was on changes after the intervention and not in differences at base rates.

The increase in suicides in the control region is not well discussed. There is potential for bias in recording of suicide attempts since the enhanced awareness during the intervention year could have lowered the threshold for classifying ambiguous accidents and self-injurious acts as suicide attempts.

2.2.1 Depression in adults

Treatment of depression in adults in primary and secondary care

This guidance addresses a major risk for suicide and self harm but is not specific to suicide and self harm prevention.

Evidence based guideline

The National Institute for Health and Clinical Excellence has issued **guidance on the management of depression**. This covers the treatment and management of depression in adults as defined by DSM-IV

- Subthreshold depressive symptoms: fewer than 5 symptoms of depression.
- Mild depression: few, if any, symptoms in excess of the 5 required to make the diagnosis, and symptoms result in only minor functional impairment.
- Moderate depression: Symptoms or functional impairment are between 'mild' and 'severe'.
- Severe depression: Most symptoms and the symptoms markedly interfere with functioning. Can occur with or without psychotic symptoms.

National Institute for Health and Clinical Excellence. *Depression in adults (update): the treatment and management of depression in adults*. CG90. London: NICE; 2009.

Available at:

<http://guidance.nice.org.uk/CG90/Guidance/pdf/English>
[Accessed 14th Jan 2010]

Quick reference guide

<http://guidance.nice.org.uk/CG90/QuickRefGuide/pdf/English>
[Accessed 14th Jan 2010]

Clinical guideline 90 is a partial update of clinical guideline 23

Identification and treatment of antenatal and postnatal mental health problems

This guidance addresses some of the risk factors for suicide and self harm but is not specific to suicide and self harm prevention.

Evidence based guideline

The National Institute for Health and Clinical Excellence guidance on antenatal and postnatal mental health makes recommendations for the prevention, prediction, detection and treatment of mental disorders, particularly depression, in women during pregnancy and the postnatal period. It provides specific guidance on depression, anxiety and eating disorders and severe mental disorders.

National Institute for Health and Clinical Excellence. *Antenatal and postnatal mental health. Clinical management and service guidance*. CG45. London: NICE; 2007.

Available at:

<http://guidance.nice.org.uk/CG45/Guidance/pdf/English>
[Accessed 17th Jul 2009]

Quick reference guide

<http://guidance.nice.org.uk/CG45/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

2.2.2 Depression in children and young people

Routine screening in primary care

The US Preventative Services Task Force has assessed the **health effects of routine primary care** screening for major depressive disorder among children and adolescents aged 7 to 18 years. The review also examined efficacy and adverse effects of treatments (SSRIs and/or psychotherapy). Treating depressed youth with selective serotonin reuptake inhibitors may be associated with a small increased risk of suicidality and should only be considered if judicious clinical monitoring is possible.

Based on an analysis of nine trials (n=2,013) the authors concluded that even the most conservative estimates indicate that the risk of suicidality (suicide ideation, attempts or preparatory action) may increase absolutely by 1% or 2%. Based on an increased absolute risk of 2%, for one patient to develop suicidality attributable to antidepressant therapy, ~ 50 patients would need to be treated. No suicide deaths occurred in any of the trials.

Search to May 2006, some further searches to May 2007

The review authors concluded that the limited available data suggest that primary care-feasible screening tools may accurately identify depressed adolescents and treatment can improve depression outcomes. Treating depressed youth with selective serotonin reuptake inhibitors may be associated with a small increased risk of suicidality and should only be considered if judicious clinical monitoring is possible.

Identification and management of depression

This guidance addresses a major risk factor for suicide and self harm but is not specific to suicide and self harm prevention

The National Institute for Clinical Excellence has issued guidance on the identification and management of depression in children and young people in **primary, community and secondary care**. This sets out the treatment and management of depression according to the definition of ICD 10

- Mild depression
- Moderate and severe depression
- Severe depression with psychotic symptoms

Supporting evidence

Type I evidence
Systematic review of RCTs

Williams SB et al. Screening for child and adolescent depression in primary care settings: a systematic evidence review for the US Preventive Services Task Force. *Pediatrics* 2009; 123: e716-e735

Only English language studies were considered. No test for potential publication bias was carried out though a comprehensive search for unpublished studies was included.

Evidence based guideline

National Institute for Health and Clinical Excellence. *Depression in children and young people. Identification and management in primary, community and secondary care*. CG28. London: NICE; 2005. Available at: <http://guidance.nice.org.uk/CG28/Guidance/pdf/English> [Accessed 17th Jul 2009]

Quick reference guide
<http://guidance.nice.org.uk/CG28/QuickRefGuide/pdf/English> [Accessed 17th Jul 2009]

Selective serotonin reuptake inhibitors (SSRIs)

This Cochrane Review set out to determine the efficacy and adverse outcomes, including definitive suicidal behaviour and suicidal ideation, of **SSRIs compared with placebo** in the treatment of depressive disorders in children and adolescents.

There was evidence of an increased risk of suicidal ideation and behaviour for those prescribed SSRIs. Based on 10 trials with 1864 patients in total (three trials each of Paroxetine, Fluoxetine, Citalopram and one of Sertraline with no events reported) the relative risk for suicide related outcome (ideation and attempt combined) was 1.80 (95% CI 1.19 to 2.72).

The searches covered Medline and PsycINFO to October 2005, CENTRAL to issue 2, 2004

The reviewers concluded that caution is required to interpret the results. First, there were methodological issues, including high drop out, issues regarding measurement instruments and clinical usefulness of outcomes, often variously defined across trials. Second, patients seen in clinical practice are likely to be more unwell and at greater risk of suicide, compared to those in the trials, and it is unclear how this group would respond to SSRIs. This needs to be considered, along with the evidence of an increased risk of suicide related outcomes in those treated with SSRIs. It is unclear what the effect of SSRIs is on suicide completion. While untreated depression is associated with the risk of completed suicide and impacts on functioning, it is unclear whether SSRIs would modify this risk in a clinically meaningful way.

Supporting evidence

Type I evidence

Systematic review of RCTs

Hetrick SE, Merry S, McKenzie J, Sindahl P, Proctor M. Selective serotonin reuptake inhibitors (SSRIs) for depressive disorders in children and adolescents. *Cochrane Database Syst Rev* 2007, Issue 3. Art. No.: CD004851. DOI: 10.1002/14651858.CD004851.pub2 Available at: <http://mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004851/frame.html> [Accessed 17th Jul 2009]

Summary:

<http://www2.cochrane.org/reviews/en/ab004851.html> [Accessed 17th Jul 2009]

This review assessed efficacy of and risk of reported suicidal ideation/suicide attempt, of **second-generation antidepressants** (selective serotonin reuptake inhibitors, nefazodone, venlafaxine, and mirtazapine) in children and adolescents <19 years with paediatric major depressive disorder (MDD), obsessive-compulsive disorder (OCD) and non-OCD anxiety disorders.

Benefits of antidepressants appeared to be much greater than risks from suicidal ideation/suicide risk across indications, although comparison of benefit to risk varies as a function of indication, age, chronicity and study conditions.

Based on the information in the text (*there appear to be some errors in the tables*) from 27 placebo controlled trials of paediatric MDD (n=15), OCD (n=6) and non-OCD anxiety disorders (n=6) pooled risk differences significantly favoured antidepressants for MDD (11.0 %, 95% CI 7.1% to 14.9%), OCD (19.8%, 13.0% to 26.6%) and non-OCD anxiety disorders (37.1%, 22.5% to 51.7%).

There was an increased risk difference of suicidal ideation/suicide attempt across all trials and indications for drug vs placebo (0.7%, 95% CI 0.1% to 1.3%; Number needed to harm 143, 95% CI 77 to 1000) the pooled risk differences within each risk indication were not statistically significant: 0.9% (95% CI, -0.1% to 1.9%) for MDD, 0.5% (-1.2% to 2.2%) for OCD, and 0.7% (-0.4% to 1.8%) for non-OCD anxiety disorders. There were no completed suicides.

The literature search covered the years from 1998 to 2006. Studies were included from Canada, USA, India, Costa Rica, Mexico, South Africa and Belgium.

Supporting evidence

Type I evidence Systematic review of RCTs

Bridge JA et al. Clinical response and risk for reported suicidal ideation and suicide attempts in paediatric antidepressant treatment: A meta-analysis of randomized controlled trials. *JAMA* 2007; 297: 1683-96.

Expert analysis of this paper (Hammad 2007) – noted that the reported analyses are post-hoc and caution is generally warranted in interpreting the findings. In addition, most of the RCTs were short term and could not address longer-term benefits and risks. However the analysis supported the paper's and FDA recommendations for the cautious and closely monitored use of these drugs in children and adolescents to maximise benefit and minimise risks.

There are errors in this paper. For example: eTable 2 is different to Table 2. There appears to be inconsistent rounding up/down of results. It is also hard to link text results to tables.

This UK study involved 208 adolescents, aged 11-17, with moderate to severe major or probable major depression who had not responded to a brief initial intervention from 6 outpatient clinics and assessed whether a combination of a **selective serotonin reuptake inhibitor (SSRI) and cognitive behaviour therapy (CBT)** together with clinical care is more effective in the short term.

On average there was a decrease in suicidal thoughts and self harm in both arms of the trial. There was no evidence of a protective effect of cognitive behaviour therapy on suicidal thinking or action. The treatment effects (mean differences in outcomes averaged over the follow up time points of 6,12 and 28 weeks, with 95% CI) were 0.91 (0.39 to 2.11, $p=0.82$) for suicidal ideation, 0.86 (0.38 to 1.94, $p=0.71$) for suicidal acts, 2.68 (1.15 to 6.26, $p=0.023$) for non-suicidal self harm. The apparent treatment effect for self harm was no longer present when the low reported levels of self harm at 6 weeks (in the SSRI alone group) were removed from the analysis.

The authors concluded that for adolescents with moderate to severe major depression there is no evidence that the combination of CBT plus an SSRI in the presence of routine clinical care contributes to an improved outcome by 28 weeks compared with the provision of routine clinical care plus an SSRI alone.

Supporting evidence

Type II evidence

Randomised controlled trial

Goodyer I et al. Selective serotonin reuptake inhibitors (SSRIs) and routine specialist care with and without cognitive behaviour therapy in adolescents with major depression: Randomised controlled trial. *BMJ* 2007; 335: 142-6.

The authors stated that low attendance rates for CBT may have limited the potential for efficacy although no data were provided.

2.3 Prevention and treatment of drug and alcohol misuse

2.3.1 Adults

Psychosocial interventions for misuse of opioids, stimulants and cannabis

This guidance addresses a major risk factor for suicide and self harm but is not specific to suicide and self harm prevention.

NICE has issued guidance on the use of psychosocial interventions in the treatment of people who misuse opioids, stimulants and cannabis in the healthcare and criminal justice settings.

Evidence based guideline

National Institute for Health and Clinical Excellence. *Drug misuse. Psychosocial interventions*. CG51. London: NICE; 2007. Available at: <http://guidance.nice.org.uk/CG51/Guidance/pdf/English> [Accessed Jul 17th 2009]

Quick reference guide
<http://guidance.nice.org.uk/CG51/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

Prevention of alcohol misuse

This guidance addresses a major risk factor for suicide and self harm but is not specific to suicide and self harm prevention.

NICE has issued guidance on preventing the development of hazardous and harmful drinking

Evidence based guideline

National Institute for Health and Clinical Excellence. *Alcohol use disorders: preventing the development of hazardous and harmful drinking* Public Health Guidance 24. London: NICE; 2010. Available at: <http://www.nice.org.uk/nicemedia/live/13001/48984/48984.pdf> [Accessed 22nd July 2010]

Management of alcohol dependence in primary care

This guidance addresses a major risk factor for suicide and self harm but is not specific to suicide and self harm prevention.

Guidelines for the management of harmful drinking and alcohol dependence in primary care have been developed by the Scottish Intercollegiate Guidelines Network.

Evidence based guideline

Scottish Intercollegiate Guidelines Network. *The management of harmful drinking and alcohol dependence in primary care*. Guideline 74. Edinburgh: SIGN; 2003. Updated 2004. Available at: <http://www.sign.ac.uk/guidelines/fulltext/74/index.html> [Accessed 23rd May 2010]

Brief interventions for alcohol misuse

This review considered whether **brief interventions** reduce alcohol consumption and improve outcomes for heavy alcohol users admitted to general hospital inpatient units. Studies on adults aged 16 and over admitted to hospital for any treatment other than alcohol treatment, identified as regularly consuming alcohol above the recommended limits for the country in which the study took place were included.

11 randomised controlled trials and controlled trials involving 2,441 participants were included. 5 of the included studies took place in the UK. The evidence is inconclusive. From two studies it appears that alcohol consumption could be reduced at one year follow up, although further research is recommended. Meta-analysis of 3 studies showed that, compared to a control intervention, brief intervention reduced the amount of alcohol consumed per week by 69 grams (95% CI: 10 to 128) at 6 months follow up. The small number of studies with comparable outcomes means the evidence remains weak.

A meta-analysis of standardised mean differences of alcohol consumption at one year follow up, based on change scores from baseline, showed that participants receiving brief interventions drank significantly less alcohol per week ($p= 0.02$) than those in the control groups (SMD -0.18; 95% CI, -0.33 to -0.03). No significant difference was observed at six month follow-up. A sensitivity analysis revealed a trend towards consuming fewer grams of alcohol per week ($p= 0.07$), in those receiving the brief intervention compared with those in the control group at 6 month follow-up.

Supporting evidence

Type I evidence

Systematic review of RCTs

McQueen J et al. Brief intervention for heavy alcohol users admitted to general hospital wards. *Cochrane Database Syst Rev* 2009. Issue 3. Art. No.: CD005191 DOI: 10.1002/14651858.CD005191.pub2 <http://www.cochrane.org/reviews/en/ab005191.html> [Accessed 17th May 2010]

Literature search to June 2008.

Interventions for substance misuse

3,733 patients entering a **non methadone substance-abuse disorder treatment programme** (the National Treatment Improvement Evaluation Study, NTIES) in the USA were involved in an observational study to examine whether treatment setting, length of treatment and availability/use of psychiatric services are associated with a reduced likelihood of a suicide attempt during and in the first 1 year after treatment.

Suicide attempts made during treatment were less likely in patients treated in residential as compared with outpatient settings. The rate of suicide in outpatient settings (3%; n=37/1,294) was approximately three times as high as the rate of suicide attempt in residential treatment settings (1%; 16/1,739). Odds ratio for residential versus outpatient setting = 0.26 (p=0.01).

A longer course of treatment was associated with a lower likelihood of a post treatment suicide attempt. For patients who were engaged in treatment for a month or less, the rate of post treatment suicide attempt was 5.4% (41/756), compared with a rate of 2.6% (39/1,479) in those who were engaged for four months or more. Odds ratio for longer vs shorter length of treatment = 0.70 (p=0.01).

Supporting evidence

Type IV evidence
Cohort study

Ilgen MA et al. Substance use-disorder treatment and a decline in attempted suicide during and after treatment. *J Stud Alcohol Drugs* 2007; 68: 503-9.

This is a weak study design to explore an intervention (observational cohort) although it is recognised that choice of study design is limited for this type of intervention. There were many baseline differences between patients in the residential and outpatient treatment programmes and some between participants with/without follow-up data (although follow-up data for 81% was available at 1-year).

2.3.2 Children and young people

Prevention and reduction of substance misuse

The guidance addresses risk factors but is not specific to the prevention of suicide and self harm

NICE has issued guidance on community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people.

Evidence based guideline

National Institute for Health and Clinical Excellence. *Community-based interventions to reduce substance misuse among vulnerable and disadvantaged children and young people*. PH4. London: NICE; 2007. Available at: <http://guidance.nice.org.uk/PH4/Guidance/pdf/English> [Accessed 17th Jul 2009]

Quick reference guide
<http://guidance.nice.org.uk/PH4/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

The guidance addresses risk factors but is not specific to the prevention of suicide and self harm

NICE has issued recommendations on interventions in schools to prevent and reduce alcohol use among children and young people.

Evidence based guideline

National Institute for Health and Clinical Evidence. *Interventions in schools to prevent and reduce alcohol use among children and young people*. PH7. London: NICE; 2007. Available at: [date accessed?] <http://guidance.nice.org.uk/PH7/Guidance/pdf/English> [Accessed 17th Jul 2009]

Quick reference guide
<http://guidance.nice.org.uk/PH7/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

Note that more recent NICE guidance has been issued covering children, young people and adults.

National Institute for Health and Clinical Excellence. *Alcohol use disorders: preventing the development of hazardous and harmful drinking* Public Health Guidance 24. London: NICE; 2010. Available at: <http://www.nice.org.uk/nicemedia/live/13001/48984/48984.pdf> [Accessed 22nd July 2010]

This study aimed to assess the magnitude and course of suicidal ideation during outpatient treatment and aftercare for adolescents with alcohol use disorders. Participants were 177 adolescents aged 14 to 18 years. The study was undertaken in the USA.

Following 9 weekly sessions of **cognitive behavioural therapy**, subjects were assigned to (1) no active aftercare; (2) four manual-guided face to face relapse prevention sessions; (3) Four manual-guided telephone relapse prevention sessions.

There was no significant overall change from baseline to end of treatment suicide ideation scores. Following aftercare there was a significant difference between those assigned to in-person aftercare versus no active aftercare. Mean Suicide Ideation Questionnaire (SIQ-JR, Reynolds, 1988) measure changed from 13.1 (95% CI 12.4-22.1) to 8.8 (95% CI 8.1-12.2) ($p=0.009$) for in-person care versus 7.0 (95% CI 9.2-15.7) to 7.7 (95% CI 8.0-12.3) ($p=0.60$) for no active aftercare. [NB Note major baseline differences] There was no significant difference between those assigned to telephone and no active aftercare conditions.

Supporting evidence Type II evidence Controlled clinical trial

Kaminer Y et al. Suicidal ideation among adolescents with alcohol use disorders during treatment and aftercare. *Am J Addict* 2006; 15: 43-9.

It was unclear whether randomisation was concealed so treated as CCT. No intention to treat analysis. 122/177 completed treatment and aftercare (68.9%).

Note: An exclusion criterion was "no suicide attempt or suicidal ideation with a plan during the 30-day period before baseline assessment". Authors state that this was to exclude adolescents with potentially high-risk behaviour from the study.

Table 3 is confusing. Not comprehensive in displaying all p values. Some baseline differences: Although there were no significant differences in baseline suicidal ideation score there were differences in post-treatment scores between patients allocated to In-person and no active aftercare groups. The telephone condition was not significantly different to either of the other conditions. Also significant differences between substance use disorder in the telephone versus no active aftercare groups which is possibly due to inappropriate randomisation. Overall this is a very weak CCT

2.4 Management of mental illness

2.4.1 Community mental health teams

This review evaluated the effects of **community mental health team** (CMHT) treatment for anyone with a serious mental illness compared with standard non team management.

CMHT management did result in a statistically significant difference in death by suicide and in suspicious circumstances (n = 587, 3 RCTs, relative risk 0.49, 95% CI 0.1 to 2.2) although overall fewer deaths occurred in the CMHT group.

No significant differences were found in the number of people leaving the studies early (n = 253, 2 RCTs, RR 1.10, 95% CI 0.7 to 1.8). Significantly fewer people in the CMHT group were not satisfied with services compared with those receiving standard care (n = 87, RR 0.37, 95% CI 0.2 to 0.8, NNT 4, 95% CI 3 to 11).

Hospital admission rates were significantly lower in the CMHT group (n = 587, 3 RCTs, RR 0.81, 95% CI 0.7 to 1.0, number needed to treat 17, 95% CI 10 to 104) compared with standard care.

Admittance to accident and emergency services, contact with primary care and contact with social services did not show any statistical difference between comparison groups.

The review authors concluded that community mental health team management is not inferior to non team standard care in any important respects and is superior in promoting greater acceptance of treatment. It may also be superior in reducing hospital admission and avoiding death by suicide. The evidence for CMHT based care is insubstantial considering the massive impact the drive toward community care has on patients, carers, clinicians and the community at large.

Supporting evidence

Type I evidence

Systematic review of RCTs

Malone D et al. Community mental health teams (CMHTs) for people with severe mental illnesses and disordered personality.

Cochrane Database Syst Rev 2007, Issue 3. Art. No.: CD000270. DOI:

10.1002/14651858.CD000270.pub2. Available at: http://www.mrw.interscience.wiley.com/cochrane/cls/ysrev/articles/CD000270/pdf_fs.html [Accessed

No information on number of hits and stages of study selection (flow chart). Updated with a search to March 2006, the three included studies were published in 1992, 1993 and 1998. Tyrer 1998 was likely to have been a new study that wasn't included in the original 1998 review.

In this review hospital admissions were reported as significantly lower in the CMHT group (RR 0.81, 95% CI 0.7 to 1.0) however when the confidence interval for a risk measure includes the value of 1.0 (or unity), the risk is not usually considered significant this suggests that the impact of CMHT management on hospital admissions may be of borderline significance. The review authors recognise this in their conclusions.

2.4.2 Borderline personality disorder

This guidance addresses a significant risk factor but is not specific to the prevention of suicide and self harm.

NICE has issued guidance on the management of borderline personality disorder.

Evidence based guideline

National Institute for Health and Clinical excellence. *Borderline personality disorder. Treatment and management.* CG78. London: NICE: 2009. Available at: <http://guidance.nice.org.uk/CG78/Guidance/pdf/English> [Accessed 17th Jul 2009]

Quick reference guide
<http://guidance.nice.org.uk/CG78/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

2.4.3 Obsessive compulsive disorder and body dysmorphic disorder

This guidance addresses a risk factor but is not specific to the prevention of suicide and self harm

NICE has issued guidance on the management of people with obsessive compulsive disorder or body dysmorphic disorder.

Evidence based guideline

National Institute for Health and Clinical Excellence. *Obsessive-compulsive disorder. Core interventions in the treatment of obsessive-compulsive disorder and body dysmorphic disorder.* CG31. London: NICE; 2005. Available at: <http://guidance.nice.org.uk/CG31/Guidance/pdf/English> [Accessed 17th Jul 2009]

Quick reference guide
<http://guidance.nice.org.uk/CG31/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

This paper reports on a secondary analysis of a placebo-controlled **fluoxetine** study in body dysmorphic disorder. The study involved 67 patients aged 18 or older and took place in the USA. 68.7% of participants were women. The study examined suicidality worsening, suicidality emergence and symptoms that might be precursors to suicidality worsening or emergence.

Highly suicidal individuals were excluded from the trial because a placebo group was involved.

Using standardised suicidality measures (the Hamilton Rating Scale for Depression suicidal ideation item) fluoxetine and placebo did not significantly differ with regard to emergence of suicidality.

Among the entire sample however, fluoxetine appeared to exert a protective effect against suicidality worsening. At the end of week 2, no patient on fluoxetine had suicidality worsening; a higher proportion of placebo-treated patients had suicidality worsening after two weeks of treatment (15% vs 0%; $p=0.014$) and at study endpoint (18% vs 0%; $p=0.010$).

Supporting evidence

Type II evidence
Controlled clinical trial

Phillips KA, Kelly MM. Suicidality in a placebo-controlled fluoxetine study of body dysmorphic disorder. *Int Clin Psychopharmacol* 2009; 24: 26-8.

The extent (%) of follow up is unclear although the results table suggests that most patients were followed to the end of the trial. One patient in the placebo group was withdrawn because of the emergence of substantial suicidality.

Intention to treat analysis was used with last observation carried forward, except for analyses of suicidality worsening after 2 weeks, which include only patients who completed 2 weeks of treatment. The study sample is small.

2.4.4 Bipolar disorder

This guidance addresses a significant risk factor but is not specific to the prevention of suicide and self harm.

NICE has issued guidance on the management of bipolar disorder in adults, children and adolescents, in primary and secondary care.

Evidence based guideline

National Institute for Health and Clinical Excellence. *Bipolar disorder. The management of bipolar disorder in adults, children and adolescents, in primary and secondary care.* CG38. London: NICE; 2006. Available at: <http://www.nice.org.uk/nicemedia/pdf/CG38niceguideline.pdf> [Accessed 17th Jul 2009]

Quick reference guide
<http://www.nice.org.uk/nicemedia/pdf/CG038quickrefguide.pdf>
[Accessed 17th Jul 2009]

Long term treatment with lithium

This review compared rates of suicide and attempted suicide, with and without **lithium treatment**, among patients with major affective disorder

An extension of an earlier meta-analysis (Tondo 2001). 45 studies were identified of which 31 had no-zero suicidal act data with versus without lithium treatment.

In 31 studies, (85,229 years of risk-exposure), the overall risk of suicides and attempts was five times less among lithium-treated subjects than among those not treated with lithium (relative risk = 4.91, 95% CI 3.82 to 6.31, $p < 0.0001$). Similar effects were found for completed versus attempted suicide and for bipolar versus major mood disorder patients. Omitting one very large study or those involving lithium-discontinuation had little effect on the results.

Authors' conclusions: Risks of completed and attempted suicide were consistently lower, by approximately 80%, during treatment of bipolar and other major affective disorder patients with lithium for an average of 18 months. These benefits were sustained in randomised as well as open clinical trials.

Supporting evidence

Type I evidence
Meta analysis

Baldessarini RJ et al. Decreased risk of suicides and attempts during long-term lithium treatment: a meta-analytic review. *Bipolar Disord* 2006; 8: 625-39.

A comprehensive systematic search (to August 2005) was not carried out but there is good analysis and presentation of results. The literature search was probably world wide but information on countries where the included studies were carried out is not provided.

Treatment with olanzapine

This review assessed the effects of **olanzapine, as monotherapy or adjunctive treatment**, in preventing manic depressive and mixed episodes in patients with bipolar affective disorder. 5 RCTs with a total of 1,165 participants were included.

Based on limited information, there is evidence that olanzapine may prevent further mood episodes in patients who have responded to it during an index manic or mixed episode and who have not previously had a satisfactory response to lithium or valproate. However, not withstanding these positive results, the current evidence is stronger for lithium as first line maintenance treatment for bipolar disorder.

There was no statistically significant difference between olanzapine and placebo (either alone or in combination with lithium or valproate) in terms of the number of participants who experienced relapse into mood episode (random effects relative risk 0.68, 95% CI 0.43 to 1.07, $p=0.09$; 2 studies, $n = 460$), however restricting the analysis to the trial that compared olanzapine monotherapy versus placebo, there was a statistically significant difference in favour of olanzapine (relative risk 0.58, 95% CI 0.49 to 0.69, $p<0.00001$).

No statistically significant difference was found between olanzapine and other mood stabilisers (lithium or valproate) in preventing symptomatic relapse for any mood episode, however, olanzapine was more effective than lithium in preventing symptomatic manic relapse (relative risk 0.59, 95% CI 0.39 to 0.89, $p=0.01$; 1 study, $n = 361$).

Olanzapine alone or as adjunct to mood stabilisers was associated with significantly greater weight gain than placebo but was associated with a lower rate of manic worsening and a higher rate of weight increase and depression than lithium.

Supporting evidence

Type 1

Systematic review of RCTs

Cipriani A, Rendell JM, Geddes J. Olanzapine in long-term treatment for bipolar disorder. *Cochrane Database Syst Rev* 2009, Issue 1. Art. No.: CD00436. Available at: http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004367/pdf_fs.html

Summary

http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004367/pdf_abstract_fs.html

Only five trials were included so it was not possible to construct a funnel plot to test for risk of publication bias. The authors noted the small number of trials available; 4 out of 5 trials were sponsored by the manufacturer and there were high drop out rates.

NB Suicide was mentioned as cause of death in two patients but not examined as an adverse effect of therapy.

It is unclear whether the findings would generalise to a UK setting. The location of studies is only described for two of the five, although one is multi-country (including Europe), one US and Romania. The search was to September 2006

Pharmacotherapy

This study evaluated the impact of pharmacotherapy on prospectively observed suicides and suicide attempts in subjects in the Systematic Treatment Enhancement Program for Bipolar Disorder (STEP-BD). The participants were 93 matched pairs and the study took place in the USA.

The results do not indicate a relationship between **lithium** use and suicide attempts or completions ($p=0.41$) and are, thus, not consistent with a suicide-protective effect of lithium.

Similar findings were found for exposure to valproate, carbamazepine, lamotrigine and the atypical psychotic medications.

An association between selective **serotonin reuptake inhibitor** (SSRI) prescriptions and suicide events was observed ($p<0.001$). 23 cases had exposure to SSRI documented on all sources in the 6 months prior to an event. Within their matched controls, 20 had no exposure to SSRI, one had some and two had exposure in the 6 month period ($p<0.001$). However, the authors state that this requires cautious interpretation due to the complex relationships between treatment, severity and suicidality.

This study looked at the impact of **lithium, divalproex and carbamazepine** on suicidal behaviour in 192 US veterans with bipolar disorder treated for at least one month with mood stabiliser monotherapy over a 3 year period.

Rates (per 100 years observation) of non-lethal suicide behaviour were similar during lithium (2.49), divalproex (4.67) and carbamazepine (3.80) monotherapies. No completed suicides occurred during or after discontinuation of monotherapy.

There was a sixteen fold greater non-lethal suicide event rate after discontinuation compared with mood stabilizer monotherapy (55.89 vs. 3.48 events/100 patient years; $p<0.0002$).

Authors concluded that, although the potential reasons for this increase were unknown, the overall rate of 55 suicide events per 100 patient years is too high to ignore and that further studies are needed to elucidate the nature of this rebound suicidality in all three mood stabilisers.

Supporting evidence

Type IV evidence
Case-control nested in a cohort study

Marangell LB et al. Case-control analyses of the impact of pharmacotherapy on prospectively observed suicide attempts and completed suicides in bipolar disorder: Findings from STEP-BD. *J Clin Psychiatry* 2008; 69: 916-22.

More history of psychosis in the controls (75.3%) than cases (43.0%) – not stated whether significant.

Type IV
Retrospective chart review

Yerevanian BI, Koek RJ, Mintz J. Bipolar pharmacotherapy and suicidal behaviour. Part I: Lithium, divalproex and carbamazepine. *J Affect Disord* 2007; 103: 5-11.

The study design is weak although the options for this type of study are limited and there are some benefits of naturalistic study designs for people living with mental disorder.

The study population is undefined in terms of medications being taken.

The study was partially funded by a drug company so there are potential author conflicts of interest although the authors claim no influence on the study or analysis.

This study may not generalise to other populations. Forces veterans may be subject to suicide risks factors not found in others with bipolar disorder

This study assessed the effects of **antidepressants** on suicidal behaviour in 405 US veterans with bipolar disorder treated with antidepressant therapy, mood stabiliser or both.

Suicidal behaviour event rates (per 100 patient years) were greatest during treatment with antidepressant (AD) monotherapy (25.92), least during mood stabiliser (MS) therapy (3.48) and intermediate during mood stabiliser + antidepressant combination treatment (9.75). These differences were statistically significant ($p < 0.0001$ for MS vs AD). In terms of severe events (completed and attempted suicide) the rates were 6.72, 2.44 and 0 respectively.

During treatment with antidepressants (even when coupled with mood stabilizers), patients with bipolar disorder have significantly higher rates of non-lethal suicidal behaviour compared to those on mood stabilisers without antidepressants, and thus require careful monitoring.

To address the effects of **antipsychotics** on suicidal behaviour in 405 US veterans with bipolar disorder treated, at some stage, with antipsychotics ($n=68$), mood stabiliser ($n=192$) or both ($n=168$).

Treatment of bipolar patients with antipsychotics was associated with an increase in non-lethal suicidal behaviour. Non-lethal suicide event rates were 9.4 times greater ($p < 0.0001$) during antipsychotic monotherapy and 3.5 times greater during mood stabiliser + antipsychotic ($p=0.00001$) than during mood stabiliser monotherapy.

The authors concluded that further studies are urgently needed to better characterise this relationship.

Supporting evidence

Type IV

Retrospective chart review

Yerevanian BI et al. Bipolar pharmacotherapy and suicidal behaviour. Part 2: the impact of antidepressants. *J Affect Disord* 2007; 103: 13-21.

The study limitations are the same as those discussed above

Type IV

Retrospective chart review

Yerevanian BI, Koek RJ, Mintz J. Bipolar pharmacotherapy and suicidal behaviour. Part 3: Impact of antipsychotics. *J Affect Disord* 2007; 103: 23- 8.

Study limitation as above

The authors note that antipsychotics may have been prescribed because patients were at greater risk of suicidal behaviour. First and second generation psychotics were not distinguished.

2.4.5 Schizophrenia

This guidance addresses a significant risk factor but is not specific to the prevention of suicide and self harm.

NICE has issued guidance on core interventions in the treatment and management of schizophrenia in adults in primary and secondary care.

Evidence based guideline

National Institute for Health and Clinical Excellence. *Schizophrenia. Core interventions in the treatment and management of schizophrenia in adults in primary and secondary care*. CG82. London: NICE; 2009. Available at: <http://guidance.nice.org.uk/CG82/NICEGuidance/pdf/English> [Accessed 17th Jul 2009]

Quick reference guide
<http://guidance.nice.org.uk/CG82/QuickRefGuide/pdf/English>
[Accessed 17th Jul 2009]

2.4.6 Psychiatric inpatient care

This study of people who died from suicide after **discharge** from **psychiatric inpatient** care included a 30 month sample of 149 people who received an inquest verdict of suicide or open verdict in Greater Manchester and who had a history of psychiatric admission in the 5 years before death

Reductions in care were found to be strongly associated with suicide in people discharged from inpatient psychiatric care. The case-control study of the 149 people who died from suicide showed that they were more likely to have had their care reduced at their final appointment before death (odds ratio 3.7 95% CI 1.8 – 7.6).

The authors argue that maintaining care beyond the point of clinical recovery is important in protecting those who are at high risk of suicide.

Supporting evidence

Type IV evidence
Case control study

Appleby L et al. Aftercare and clinical characteristics of people with mental illness who commit suicide: a case-control study. *Lancet* 1999; 353: 1397-1400.

A case-control study of **suicides in recent inpatients** found 11 factors associated with an increased risk of suicide.

A significant factor was discontinuity of care from a significant professional (key personnel on leave/leaving; odds ratio 18.45, 95% CI 4.46 to 76.32, $p < 0.001$).

Other independent increased risk factors included becoming unemployed (odds ratio 7.88, 95% CI 2.09 to 29.71, $p = 0.002$), history of deliberate self harm (odds ratio 4.09, 95% CI 2.58 to 6.48, $p < 0.001$), suicide ideation precipitating admission (odds ratio 1.93, 95% CI 1.22 to 3.06, $p = 0.005$), and unplanned discharge (odds ratio 2.73, 95% CI 1.77 to 4.22, $p < 0.001$).

Supporting evidence

Type IV evidence
Retrospective case
control study

King EA et al. The Wessex Recent In-Patient Suicide Study 1. Case-control study of 234 recently discharged psychiatric patient suicides. *Br J Psychiatry* 2001; 178: 531-36.

The study authors noted that the study relies on data collected from medical notes not intended to be used for research. It was impossible for the researcher responsible for completing the data proforma to be blind to patient outcome.

The study authors note that many variables were analysed *a priori*. Five of the positive risk factors have a p value of ≤ 0.005 and so would remain significant if a Bonferroni correction were applied.

2.5 Physical illness

This guidance addresses risk factors but is not specific to the prevention of suicide and self harm.

The National Institute of Clinical Excellence has published guidance on improving supportive and palliative care for adults with cancer.

This guidance addresses risk factors but is not specific to the prevention of suicide and self harm.

The National Institute for Health and Clinical excellence has published guidance on treating and managing depression in adults with a chronic physical health problem.

Evidence based guideline

National Institute for Clinical *Excellence*. *Improving supportive and palliative care for adults with cancer. The manual*. London: NICE; 2004. Available at: <http://guidance.nice.org.uk/CSGSP/Guidance/pdf/English> [Accessed 10th May 2001]

Evidence based guideline

National Institute for Health and Clinical Excellence. *Depression in adults with a chronic physical health problem*. CG91. London: NICE; 2009. Available at: <http://guidance.nice.org.uk/CG91/Guidance/pdf/English> [Accessed 6th May 2010]

Quick reference guide
<http://guidance.nice.org.uk/CG91/QuickRefGuide/pdf/English>
[Accessed 6th May 2010]

2.6 Preventing suicide in custody

Training for prison staff

This study considered the outcomes of implementing an adapted **Skills-based training on risk management (STORM)** package for use in UK prisons.

Responses of 159 prison staff trained with the STORM package were measured via the validated Attitudes to Suicide Prevention Scale (ASPS) and the non-validated Awareness of Suicide Risk Issues (ASRI). Scores showed significant improvements from baseline to post-training. For ASPS the before and after mean scores were 28.48 and 26.01 (SD 5.85); $p < 0.001$ (where a lower score marks a more positive attitude). For ASRI these were 7.06 (7.98) and 8.99 (1.64); $p < 0.001$.

95% would recommend the course to their colleagues.

Suicide awareness training for prison staff may be effective in improving reported attitudes and knowledge. This training is mandatory in the UK and is designed to assist prison staff in identifying and helping vulnerable prisoners.

A pilot study to assess the effectiveness of this training was conducted using a questionnaire administered before and after training to 53 prison staff. There was an overall improvement in attitudes and knowledge scores after the training ($df = 52$, $p > 0.001$).

The authors concluded that long term studies would be needed to assess whether changes in attitudes and knowledge will translate into changes in staff behaviour.

Supporting evidence

Type III evidence
Before and after study

Hayes AJ et al. Improvements to suicide prevention training for prison staff in England and Wales. *Suicide Life Threat Behav* 2008; 38:708-13.

A before and after design is a weak study design to measure the effect of an intervention. No suicide related outcomes were measured. The ASPS scale had been previously validated but a measure of knowledge about suicide risk developed for use in the study (Awareness of Suicide Risk Issues, ASRI) has not been validated. 161/182 (81%) completed before and after questionnaires, though very poor response rate at 6-8 month follow up (38%).

Type III evidence
Before and after study

Cutler J, Bailey J, Dexter P. Suicide awareness training for prison staff: An evaluation. *Issues in Criminal and Legal Psychology* 1997; 28:65-9.

The detail provided in the paper was limited and it was difficult to assess the quality of this study

Predictors of self harm in custody

This questionnaire based study explored the relationship between loneliness and **known predictors of self harm** such as depression and hopelessness in a group of 60 male prisoners on remand in Australia.

Based on the results from a questionnaire comprising three scales (the UCLA Loneliness Scale Revised, the Depression, Hopelessness and Suicide Screening Form-03, the Multidimensional Scale of Perceived Social Support) prisoners who scored higher on a measure of loneliness reported higher levels of depression, hopelessness and indicators of suicidal behaviour ($p < 0.01$ in each case).

The authors concluded that management strategies in prisons that incorporate the promotion of positive relationships, communication and social interaction among prisoners, staff and visitors (e.g. befriender schemes) may prove more effective than those such as the use of isolation.

15 women aged 19 to 50 years, 14 of whom had survived potentially lethal self harm attempts, were interviewed to explore their subjective **interpretations of the precipitating events**. A range of **motivations & intentions** and experiences of care & support were identified. The study took place in the UK.

The study authors concluded that recommendations for prevention should include: improvements to the general prison regimen (a 'purposeful programme of activities'); training and support for staff; specialist help for women with histories of abuse, mental illness, or borderline personality disorder; and improved support following stressful life events.

Supporting evidence

Type IV evidence
Cross sectional
questionnaire

Brown S, Day A. The role of loneliness in prison suicide prevention and management. *Journal of Offender Rehabilitation* 2008; 47: 433-49.

There are a range of methodological problems with this study.

Its generalisability is very uncertain; the sample may not even have been representative of the target Australian prison population.

There were many exclusions and 22 of 84 prisoners selected declined to participate. There are some concerns about the statistics used. The study used a self report questionnaire.

Type IV evidence
Interview study

Borrill J et al. Learning from 'near misses': Interviews with women who survived an incident of severe self-harm in prison. *The Howard Journal* 2005; 44: 57-69.

Cannot tell from the text if subjects are representative since the sampling strategy and the number of refusals is not clear. It is unclear if questions were pre-tested and analysis did not appear to be fed back to participants for comment.

Reviewing prison suicide deaths

The **National Study of Prison Suicides** 1999-2000 involved a detailed examination of 172 self-inflicted deaths, made recommendations on the recognition, assessment and management of suicide risk and related issues of mental healthcare and identified the training needs of staff.

The report indicated the need for a number of changes in prison health care services, prison regime and environment. Their recommendations included:

- The need to review prison cells and wards and remove the mean of access to suicide (for example removal of ligature points)
- Better transfer on health and suicide risk between prisons, health services and prisoners families
- Improvements to health screening on reception and the use of specific reception wings
- Better use of care plans for prisoners with mental health problems
- Better management of detoxification for those with drug and alcohol problems
- Improvements to observation
- Suicide prevention training for prison officers

Prison suicide prevention programmes

A **comprehensive suicide prevention programme** implemented in local jail facilities throughout New York State was associated with a reduction in suicides over a 13 year period. The programme was implemented in 1985; there were 26 suicide deaths in 1984 and 9 in 1996. Over the same period the inmate population rose from 7,500 to 15,000.

Programme components were:

- Policy and procedure guidelines to clarify roles of county jail, police department lockup and mental health agency personnel
- Screening of detainees by trained jail/police officers
- Supervision for inmates assessed as being at high risk
- Mental health observation housing; special cells and units offering varying levels of mental health and medical supervision
- Scheduled mental health treatment
- Crisis intervention
- External hospitalisation for people with serious mental illness
- Training for both jail and mental health staff
- Communication
- Investigation and monitoring of prisoner deaths
- Staff debriefing

Supporting evidence

Type IV evidence
Observational study

Shaw J, Appleby L, Baker D. [Safer prisons. A national study of prison suicides 1999-2000 by the National Confidential Inquiry into Suicides and Homicides by People with Mental Illness.](#) London: DoH; 2003. [Accessed 6th May 2010]

Authors limitations;
Intervention studies are needed to show conclusively that implementation of the measures recommended in this report will prevent suicide.

Supporting evidence

Type IV evidence
Retrospective before and after study

Cox J F, Morschauser P C. A Solution to the problem of jail suicide. *Crisis: Journal of Crisis Intervention and Suicide* 1997; 18: 178-84.

This is an uncontrolled study, the fall in prison suicides observed following implementation of the programme may be a consequence of other unidentified factors

Differences in the criminal justice systems of the UK and the USA would need to be considered in deciding whether a similar programme might be effective in the UK.

Poor social problem solving has been shown to be associated with vulnerability, distress and suicidality in young prisoners.

This study looked at the effectiveness of the **social problem-solving intervention *Stop and Think!*** took place on the vulnerable wing of HMP Cardiff. It involved 28 sentenced adult men. A rolling problem was offered weekly; the full programme comprising 12 sessions.

The programme appeared to be acceptable to vulnerable prisoners and to the staff who work with them. In this study the programme effected positive change in social problem-solving abilities as measured by the Social Problem Solving Inventory – Revised (SPSI-R).

Significant improvements were noted for subjects completing the intervention on negative orientation towards problems (21.04 (SD 9.75) post treatment vs 26.04 (10.03) pre-treatment, $p<0.01$); avoidance of problems (12.14 (7.13) vs 15.25 (6.87, $p<0.01$); and total social problem solving score (10.38 (3.31) vs 8.81 (3.91), $p<0.01$).

Supporting evidence Type III evidence Before and after study

Hayward J, McMurrin M, Sellen J. Social problem solving in vulnerable adult prisoners: profile and intervention. *The Journal of Forensic Psychiatry & Psychology* 2008; 19: 243-8.

Outcomes were self reported. The findings may not be generalisable because there was a high dropout rate (only 28/68=41% completed 6 or more sessions).

No intention to treat analysis.

Longer term follow-up beyond the end of the *Stop and Think* course would have been appropriate; however, the results indicate the feasibility and potential of this intervention.

Level 3: Managing suicidal behaviour

This section covers interventions that may be helpful for people who are having thoughts or suicide or those who have self harmed.

3.1 Suicidal ideation

Telephone crisis services

This was an evaluation of the effectiveness of **telephone crisis services/hotlines**. Changes in the suicide state of callers, from the beginning to the end of their calls and again within 3 weeks of their calls, were measured. Eight centres in the US were involved in the study.

For the 1,085 callers who completed the baseline assessment, there was a significant reduction in suicide status from the beginning to the end of the call ($F = 130.8$, $p < 0.001$).

Among the 380 suicide callers who completed a follow-up assessment there was no significant reduction in callers' intent to die during this period ($F = 0.19$, ns). Intent to die at the end of the baseline call (odds ratio 1.7, 95% CI 1.2 to 2.3, $p < 0.002$) was a statistically significant predictor of subsequent suicidality.

Telephone counselling services might be effective, in the short term, in improving mental state and reducing suicidal ideation in adolescents.

An evaluation of the effectiveness of telephone counselling services set up as part of Australia's National Youth Suicide Prevention Strategy found that significant decreases in suicidality and significant improvement in mental state were found during the course of counselling sessions.

The study involved 101 callers to Kids Help Line a general telephone counselling service for young people, who indicated either suicidal ideation or intent. Effectiveness of counselling was assessed, using taped calls, by independent raters using standardised measures to quantify changes in suicidality over the course of a counselling session.

Using a paired samples t test there was a statistically significant decrease in the callers suicide ideation from the beginning to the end of the calls ($t(100) = 12.66$, $p < 0.005$).

Supporting evidence

Type III evidence
Before and After study

Gould MS, Kalafat J, Harrismunfakh JL, Kleinman M. An evaluation of crisis hotline outcomes. Part 2: Suicidal callers. *Suicide Life Threat Behav* 2007; 37:338-52.

No baseline data table was provided. The participation rate was 62.4%, with follow up of 35.3%. As the study was uncontrolled it is difficult to ascertain if the intervention was responsible for the observed reduction in suicidality.

The study was undertaken in the USA so the findings may not generalise to a UK setting.

Type III evidence
Before and after study

King R et al. Telephone counselling for adolescent suicide prevention. Changes in suicidality and mental state from beginning to end of a counselling session. *Suicide Life Threat Behav* 2003;33: 400-11.

The authors noted the following limitations. The lack of control makes the attribution of effect difficult. It is possible that callers were at the peak of their crisis when they made the initial call with the counsellor and that the decision to call rather than to act may already have been an indicator of impending remission.

This study evaluated whether using **signs displaying the Samaritans' national telephone number** in New Forest car parks had an impact on the number of suicides. The signs were installed in response to the recognition that Forestry Commission car parks in the New Forest seemed to be attracting numbers of non local suicides. Signs were erected in 26 of the 140 car parks.

The annual average number of all suicides in the New Forest registration district (NFRD) fell from 23.5 in the 10 year pre-intervention period to 18.7 in the 3-year post-intervention period. For visitor deaths registered in the NFRD the annual average fell from 10.6 to 5.7 but for residents there was a slight increase from 12.9 to 13.

In all car parks the annual average number of suicides fell from 10.0 to 3.3. For visitors the rate fell from 7.6 to 3.0 and for residents from 2.4 to 0.3. In signed car parks the annual average suicide rate for residents fell from 1.2 to 0.0 and for visitors from 3.5 to 1.7.

In unsigned car parks, for residents, there was a fall from 1.2 to 0.3 and for visitors a fall from 7.6 to 3.

Elsewhere in the district the annual average suicide rate increased from 13.5 to 15.3. For residents there was an increase from 10.5 to 12.7 but for visitors a decrease from 3 to 2.7.

Brief interventions

This study evaluated the benefits of a **brief prevention intervention** based on a **problem solving model** of suicidal ideation

Participants were 18-24 year olds from Ohio State University. 75% were caucasian. All had a score of 6 or more on the Beck Suicide Scale (BSS) and were judged not to represent an immediate threat of danger to themselves or others. Evaluation of group differences (using Wald's Z-statistic) revealed that the treatment group followed a significantly different growth trajectory than the control group, with an accelerated downward slope (2.17, $p < 0.05$).

Inspection of treatment means indicates this finding was related to initial decreases in self-reported suicidal ideation by the treatment group on the posttest assessment, 10.40 (SD 5.29) v 10.68 (SD 7.59). However, both groups dropped in ideation over time, which suggests that, whereas the treatment group evidenced a more pronounced initial drop in ideation, most individuals in the study improved over time.

Comparing pretest to 1 month follow-up, BSS mean for the treatment group had dropped from 13.05 (SD 4.37) to 8.18 (SD 8.44) and for the control group BSS had dropped from 12.80 (SD 5.36) to 9.48 (SD 8.01) The study authors concluded that exposure to a brief video intervention regarding problem solving and coping skills was sufficient to elicit significant decreases in suicidal ideation and depression in the short term.

Supporting evidence

Type IV evidence
Retrospective before and after

King E, Frost N. The New Forest Suicide Prevention Initiative (NFSPI). *Crisis: Journal of Crisis Intervention & Suicide* 2005; 26:25-33.

Although this is a promising intervention it is not possible to be confident that the reduction was as a result of the erection of signs since the reduction in suicides was similar in signed and unsigned car parks.

Supporting evidence

Type II evidence
Controlled clinical trial

Fitzpatrick KK, Witte TK, Schmidt NB. Randomized controlled trial of a brief problem-orientation intervention for suicidal ideation. *Behavior Therapy* 2005; 36:323-33.

Complex analysis used. No true baseline data were provided to show whether treatment and control groups were comparable.

High attrition rate, 68% at last follow-up (1 month). The authors note a number of limitations: Small sample with insufficient power to detect significant effects. Participants were given financial incentives which may have introduced bias. Latent growth curve analysis not appropriate for small sample size. Significant decreases in suicidal ideation noted in both intervention and control groups.

Training for helpers

This pilot study used self administered pre and post training surveys to assess a three hour **awareness, skills development and prevention tools training curriculum** focusing on risk assessment techniques and interventions for managing an individual in a suicidal crisis.

The training, based on the Samaritans Crisis Communications Model, was delivered by The Samaritans of New York Public Education Suicide Awareness and Training Programme to frontline customer service providers working for an urban city human resources department.

64 predominantly female (52) participants took part in the training. Participant's ages ranged from 20 to 65. 59 participants completed the pre and post training surveys.

Participants scored significantly higher on measures of perceived knowledge about suicide and suicide prevention and self-efficacy to intervene with a person thought to be at risk of suicide after training. (Before training $M = 15.0$, $SD = 6.1$, after $M = 25.7$, $SD = 5.9$, $t = -10.71$, $p < 0.0001$)

Supporting evidence

Type III evidence

Before and after study

Mathieu MM, Ross A, Knox KL. Program evaluation of the Samaritans of New York's public education suicide awareness and prevention training program. *Brief Treatment and Crisis Intervention* 2006; 6, 295-307.

The service impact was not assessed, only the trainees perception of their skills and knowledge.

The generalisability of these findings to other populations, service settings and training methods is limited.

This study looked at the effectiveness of a **specialised youth suicide intervention training programme** on helper, knowledge, attitudes and intervention skills. Maintenance of effects 6 months after training was also assessed.

78 helpers from 10 educational establishments and community or institutional organisations serving the youth clientele in a metropolitan area in Quebec, were allocated to either 1 of 5 intervention groups or 1 of 3 control groups. The intervention group had a higher level of knowledge than the control group before training but both groups were comparable on measurement of attitudes. There were 71 participants in the final sample, 65% of whom were women.

Participants who were exposed to training showed increased levels of skills and knowledge and improved attitudes towards suicide when tested post training and compared with the control group, after correcting for their higher level of knowledge pre training.

Post training

Measure of knowledge; experimental group (EG) mean competency score = 8.25, SD = 1.17, control group (CG) mean competency score = 5.57, SD = 1.58, $p < 0.001$

Measure of attitudes;

EG mean = 16.41, SD = 1.24, CG Mean = 15.55, SD = 1.09, $p < 0.001$

Measure of skills;

EG Mean = 18.75, SD = 2.77, CG Mean = 14.07, SD = 2.10, $p < 0.001$

For the experimental group six months after training their scores on skills and knowledge had diminished significantly whereas their attitudes remained stable

Knowledge; mean = 7.33, SD = 1.54, $p < 0.001$

Attitudes; mean = 16.69, SD = 1.18, $p < 0.001$

Skills; mean = 17.36, SD = 2.52, $F = 18.280$, $p < 0.001$

The findings suggested that the intervention may be useful in developing positive attitudes towards suicide prevention in helpers but does not create long term changes in knowledge or skills.

Supporting evidence

Type III evidence
Non randomised
intervention study

Chagnon F, Houle J, Marcoux I, Renaud J. Control-group study of an intervention training program for youth suicide *Suicide Life Threat Behav* 2007; 37,135-44.

This was a very small study and further research would be required to be confident that the programme has a positive impact on attitudes. Only 46% of participants were followed up at six months. Skills were assessed using responses to simulations and clinical vignettes on video tape; there was no assessment of any impact on services or clients.

There may be cultural and other differences between the UK and Canada and a pilot study would be needed to assess whether the programme would be appropriate for UK audiences.

Collaborative primary care programmes

This trial was undertaken to determine the effect of a **primary care-based collaborative care program** (the IMPACT trial) for depression on suicidal ideation in older adults. The participants were 1,801 adults, 60yrs and older, with major depression or dysthymia. Their mean age was 71.2 ± 7.5 , 65% were women and 23% came from ethnic minority groups. The setting was 18 primary care clinics.

At baseline, 119 (13.3%) of the usual care patients and 139 (15.3%) of intervention patients reported thoughts of suicide in the previous month ($t = 1.27$, $df = 1,792$, $p = 0.21$).

Significantly lower rates of suicidal ideation were observed in intervention subjects than in usual-care subjects during the 12-month intervention period and the 12-month period after the intervention when resources were no longer available. At 12 months odds ratio = 0.54 (95% CI 0.40 to 0.73), $p < 0.001$; at 18 months odds ratio = 0.52 (95% CI 0.36 to 0.75), $p < 0.001$; and 24 months odds ratio = 0.65 (95% CI 0.46 to 0.91), $p = 0.01$.

Experiences of people who have considered suicide and the relatives or friends of those who have died from suicide.

This systematic review of qualitative research addressed **how people live with suicidality or recover a desire to live**. It included 12 peer-reviewed studies published between 1997 and 2007.

A thematic content analysis of the included studies found a number of interconnected themes: the experience of suffering, struggle, connection, turning points and coping.

The authors concluded that living with or overcoming suicidality involves various struggles, often existential in nature. Suicide may be seen both as a failure and a means of coping. People may turn away from suicide quite abruptly through experiencing, gaining or regaining the right kind of connection with others. Nurses working with suicidal individuals should aspire to be identified as people who can turn people's lives around.

Supporting evidence

Type II evidence
Controlled clinical trial

Unutzer J et al. Reducing suicidal ideation in depressed older primary care patients. *J Am Geriatr Soc* 2006; 54:1550-6.

This was an American study and 23% of participants were from ethnic minority groups. It is not clear how many participants responded at 24 months follow-up. 6.5% (117/1,801) died before 24-months although none were completed suicides.

The care packages involved in this study may not be reproducible in a UK setting.

Supporting evidence

Type IV evidence
Systematic review of qualitative studies

Lakeman R, FitzGerald M. How people live with or get over being suicidal: a review of qualitative studies. *J Adv Nurs* 2008; 64: 114-26.

The search terms were not comprehensive and there was no reference list follow up or expert contacts, although hand searching was undertaken. Only articles from peer reviewed journals were sought.

66 relatives or close friends of people who died from suicide were interviewed as part of a psychological autopsy study. The interviews explored how distressed individuals and members of their lay networks had **made decisions to seek, or not to seek, help from a medical practitioner** in the period leading up to the suicide.

Interviews were transcribed verbatim and analysed using a thematic approach. The study showed that relatives and friends played a key role in determining whether or not suicidal individuals sought medical help.

Half the sample had consulted in their final month and many of these were persuaded to do so by a relative or friend. Being accompanied by a family member may also make it more likely that psychological problems are disclosed.

Of those who did not consult, some were characterised as help resisters but many others did not do so because no one around them was aware of the seriousness of their distress or considered it to be medically significant.

The authors identified a range of lay interventions and coping strategies, including seeking non-medical help. They concluded that greater attention needs to be given to the potential of lay networks in managing psychological distress and preventing suicide. They recommend a balanced approach to suicide prevention that builds on lay knowledge and combines medical and non medical strategies.

Supporting evidence

Type IV evidence

Interview study

Owens C et al. A qualitative study of help seeking and primary care consultation prior to suicide. *BJGP* 2005; 55: 503-9.

3.2 Assessment people who self harm

Assessment of suicide risk

A study that evaluated the predictive value of the **Beck Suicidal Intent scale** (SIS) found that it cannot usefully predict which patients will die from suicide.

2,489 patients who presented to hospital in Oxford with self harm were included, with a mean follow up of 5.2 years. Thirty males (2.9%) and 24 females (1.7%) died by suicide. Despite a robust association between suicidal intent and eventual suicide, the positive predictive value of the SIS was low (4%). Predicted probabilities of suicide assigned to individual patients were also low, even for those who eventually died by suicide.

The authors concluded that the SIS cannot predict which individual patients will die by suicide. Nonetheless, information regarding suicidal intent is valuable in the clinical risk assessment and management of patients who deliberately self harm.

Long term follow up of 11,583 people who presented to hospital in Oxford with deliberate self harm between 1978 and 1997 showed that **those who repeated self harm** were at significantly greater risk of suicide than those who had a single episode (relative risk 2.24, 95% CI 1.77 to 2.84); this risk was greater in females (relative risk 3.5, 95% CI 1.3 to 2.4) than males (relative risk 1.8, 95% CI 2.3 to 5.3)

Suicide risk was further increased in females with multiple repeat episodes of self harm (relative risk 4.7, 95% CI 3.0 to 6.4). Length of follow up from initial episode of self harm ranged from 3 to 12 years.

A study of 3,690 individuals admitted to Christchurch Hospital in New Zealand following deliberate self harm showed that over a 10 year follow up period those whose **index episode of self harm** used a **method of high lethality** (carbon monoxide poisoning, hanging, gunshot, jumping, drowning, motor vehicle accident or burning) had a significantly greater risk of death from suicide than those who use less lethal methods (overdose/poisoning, cutting/stabbing) (Cumulative risk of suicide low lethality method 4.23%, high lethality method 8.89%, $\chi^2 = 1: 16.58, p < 0.0005$)

Supporting evidence

Type IV evidence
Case series

Harriss L, Hawton K. Suicidal intent in deliberate self-harm and the risk of suicide: The predictive power of the Suicide Intent Scale. *J Affect Disord* 2005; 86: 225-33.

Assessment and follow up information were not available for all patients.

Type IV evidence
Survival analysis

Zahl DL, Hawton K. Repetition of deliberate self-harm and subsequent suicide risk: long-term follow-up study of 11,583 patients. *Br J Psychiatry* 2004; 185:70-5.

Type IV evidence
Case series

Gibb SJ, Beautrais AL, Fergusson DM. Mortality and further suicidal behaviour after an index attempt: a 10 year study. *Aust NZ J Psychiatry* 2005; 39: 95-100.

An Australian study aimed to identify **changes in clinical presentation predictive of suicide** in patients treated for repeated episodes of self poisoning.

Cases were patients who had treatment in hospital for self poisoning on more than one occasion between 15 January 1987 and 31 December 2000 who later died from suicide.

There were 31 cases for which 93 controls were selected. Study variables associated with an increased risk of subsequent suicide were:

- An increase in the number of drugs ingested (odds ratio 2.59, 95% CI 1.48 to 4.51)
- An increase in the dose ingested (odds ratio 1.33, 95% CI 1.01 to 1.76),
- An increased coma score (odds ratio 1.71, 95% CI 1.11 to 2.66),
- A decrease in Glasgow coma score (odds ratio 1.21, 95% CI 1.03 to 1.43)
- An increase in drug or alcohol misuse (odds ratio 2.33, 95% CI 1.06-5.10)

The authors concluded that patients who have escalating severity of self poisoning are at high risk of completed suicide.

Psychosocial assessment

Skills training on risk management (STORM) is feasible and acceptable in mental health trusts but its longer term impact is uncertain.

This was a mixed methods study involving an intervention study without randomisation combined with a qualitative study using interviews. It was carried out in three mental health trusts in North West England and involved 456 staff followed up for six months. The study aimed to assess the delivery of STORM training to front line mental health staff (community and inpatient) in three clinical services.

Training resulted in some positive changes in attitude and increased confidence; these reached statistical significance and were retained in participants who returned their follow up postal questionnaires (31.6%). The study did not show any improvements in skills following training or any long term benefits in skills.

The study authors concluded that STORM training for the assessment and management of suicide risk is both feasible and acceptable in mental health trusts; however they remained uncertain of its longer term impact given the lack of engagement of senior staff in the enterprise and the absence of linked supervision and support from the organisational management to reinforce skill acquisition and development. They considered that regular supervision that links STORM training to actual clinical experience would be the ideal.

Supporting evidence

Type IV evidence
Nested case control study

Carter G et al. Repeated self-poisoning: increasing severity of self-harm as a predictor of subsequent suicide. *Br J Psychiatry* 2005; 186: 253-7.

Authors noted that some of the deaths in the control group might have been misclassified as suicides and there was a longer mean follow up time in the control group. However, both these effects would lead to a negative result so would not affect the positive findings of the study. The medical officers' assessment of lifetime substance misuse did not correspond to DSM-IV criteria

Supporting evidence

Type III evidence
Intervention study without randomisation

Gask L et al.. Evaluating STORM skills training for managing people at risk of suicide *J Adv Nurs* 2006; 54: 739-50.

The authors identified the following limitations. Changes in organisation practice and impact on service users were not assessed. A better study design would have been a randomised controlled trial with a change in suicide rate as a primary outcome measure but the numbers required would have been very large. Only 31.6% returned questionnaires and there was low participation in the videotaped assessment.

This observational study of 7344 individuals presenting to six hospitals with 10,498 episodes of self-harm (age range 11-100, 57% women) assessed the proportion of these episodes resulting in a **specialist assessment** in each hospital. The six hospitals were located in the cities of Oxford, Leeds and Manchester.

Overall 60% of episodes resulted in a specialist psychosocial assessment. Factors associated with an increased likelihood of assessment included age over 55 years, current psychiatric treatment, admission to a medical ward and ingestion of antidepressants. Factors associated with a decreased likelihood of assessment included unemployment, self-cutting, attending outside normal working hours and self discharge. There was no overall association between assessment and self harm repetition but differences were noted between hospitals – assessments were protective in one hospital but associated with an increased risk of repetition in another.

The study authors concluded that identifying the active components of psychosocial assessment may help to inform future interventions for self harm.

Staff training on assessment of people who self harm

The **STORM (Skills Training on Risk Management)** project, a district wide programme on the assessment and management of suicide risk, was effective in improving the skills of accident and emergency, primary care and mental health staff. 103 health care professionals of the 359 to whom it was offered underwent training in a six month period. A volunteer sample of 28 showed improvements in skills in the assessment and management of suicide risk

However a before and after analysis of suicide rates showed that there was no significant improvement following the intervention. In 1994-1996 before the educational intervention the rate was 8.8 per 100,000. In the period 1998-2000, after the intervention it was 8.6 per 100,000 $p=0.783$.

A **one hour teaching session** improved the quality of **psychosocial assessment** performed by junior doctors and nurses working in the accident and emergency department.

Before the intervention 13% of records were judged to be adequate, following the intervention this went up to 46%. In the post intervention period notes were more likely to be judged adequate when a proforma was used as part of the assessment (52 out of 66 with a proforma, $\chi^2 = 60$, $p < 0.01$)

Supporting evidence

Type IV evidence

Observational study

Kapur N et al. Psychosocial assessment following self-harm: Results from the multi-centre monitoring of self-harm project. *J Affect Disord* 2008; 106: 285-93.

This was a non experimental study and the findings relating specialist assessment to repetition should be interpreted cautiously. Variations in data capture between hospitals and study design are open to confounding; Some data may have been more likely to be recorded if episodes resulted in specialist assessment. The length of follow up is not stated – only that episodes were identified over an 18 month period.

Supporting evidence

Type IV

Retrospective before and after study

Appleby L et al An educational intervention for front-line health professionals in the assessment and management of suicidal patients (The STORM Project) *Psychol Med* 2000; 30: 805-12.

Type III evidence

Before and after study

Crawford MJ, Turnbull G, Wessely S. Deliberate self harm assessment by accident and emergency staff – an intervention study. *Journal of Accident and Emergency Medicine* 1998; 15:18-22.

Clinical audit can be effective in improving the quality of **psychosocial assessment** of adults presenting to accident and emergency departments with deliberate self harm.

Following an initial audit using the Royal College of Psychiatrists standards for provision of services for self harm⁷ medical staff were encouraged to use a pre-printed checklist for risk assessment and all new senior house officers were required to attend a training seminar conducted by a senior lecturer in psychiatry.

A subsequent audit showed a significant improvement in all areas of psychosocial assessment ($p < 0.001$) apart from mental state. Following the audit a higher proportion of patients were assessed by a mental health specialist (1994/5 154, 16.5%, 1997/8 362, 26.5%; $\chi^2 = 33$, $p = 0.01$) in the accident and emergency department.

A study, carried out in Wales, found no significant differences in **outcome** between **psychosocial assessments** carried out by a trained **mental health nurse** and those completed by **senior house officers** in psychiatry.

In a sample of 145 patients, 68 were assessed by a doctor and 77 by the nurse. The only significant difference was that more of the nurse-assessed patients had taken alcohol at the time of their overdose (odds ratio 2.61, 95% CI 1.27 to 5.53, $p = 0.008$). The authors concluded that psychosocial assessments following self-poisoning can be provided by appropriately trained and supervised mental health nurses.

Service user's attitudes to inform service design

This systematic **review of people's attitudes towards clinical services following self-harm** was undertaken to inform service design and improvement. The review included 31 research studies with quantitative or qualitative designs. 16 of the included studies were carried out in the UK; the remainder took place elsewhere in Europe, the USA, New Zealand and Australia.

Despite variations in healthcare systems and setting, participants' experiences were remarkably similar. Poor communication between patients and staff and a perceived lack of staff knowledge with regard to self-harm were common themes. Many participants suggested that psychosocial assessments and access to after-care needed to be improved. The authors concluded that specific aspects of care that might increase service user satisfaction and treatment adherence include staff knowledge, communication and better after-care arrangements. A standard protocol could aid regular audits of users' experiences of services.

Supporting evidence

Type III evidence
Before and after study

Dennis M et al. The psychosocial assessment of deliberate self harm: using clinical audit to improve the quality of the service. *Emergency Medical Journal* 2001; 18: 448-50.

Type III evidence
Before and after study

Griffin G, Bisson JI. Introducing a nurse-led deliberate self-harm assessment service. *Psychiatric Bulletin* 2001; 25: 212-4.

Management of patients following assessment was not assessed.

Supporting evidence

Type IV evidence
Systematic review of observational and qualitative studies

Taylor TL et al. Attitudes towards clinical services among people who self-harm: systematic review. *Br J Psych* 2009; 194: 104-10.

The potential for publication bias was noted by authors because only one unpublished study was found.

⁷ Royal College of Psychiatrists. *The general hospital management of adult deliberate self-harm. A consensus statement on standards for service provision*. London:RCP;1994

3.3 Management of self harm

The National Institute for Clinical Excellence has issued guidelines on the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care. The guideline is for all people aged 8 years and over.

Evidence based guideline

National Institute for Clinical Excellence. *Self-harm: the short-term physical and psychological management and secondary prevention of self-harm in primary and secondary care*. CG16. London: NICE; 2004. Available at: <http://guidance.nice.org.uk/CG16/NICEGuidance/pdf/English> [Accessed 17th May 2010]

Quick reference guide
<http://guidance.nice.org.uk/CG16/QuickRefGuide/pdf/English>
[Accessed 17th May 2010]

Psychosocial & pharmacological interventions

This systematic review of **psychological and pharmacological interventions** following self harm considered which interventions were most effective in **preventing repetition**.

23 trials were identified in which repetition of deliberate self-harm was reported as an outcome variable. The trials were classified into 11 categories. The summary odds ratio indicated a trend towards reduced repetition of deliberate self-harm for problem-solving therapy compared with standard aftercare (0.70; 95% CI 0.45 to 1.11) and for provision of an emergency contact card in addition to standard care compared with standard aftercare alone (0.45; 0.19 to 1.07). The summary odds ratio for trials of intensive aftercare plus outreach compared with standard aftercare was 0.83 (0.61 to 1.14), and for antidepressant treatment compared with placebo was 0.83 (0.47 to 1.48).

The remainder of the comparisons were in single small trials. Significantly reduced rates of further self-harm were observed for dialectical behaviour therapy vs. standard aftercare (0.24; 0.06 to 0.93).and depot flupenthixol vs. placebo in multiple repeaters (0.09; 0.02 to 0.50).

Considerable uncertainty remains about which forms of psychosocial and physical treatments are most effective, inclusion of insufficient numbers of patients in trials being the main limiting factor. There is a need for larger trials of treatments associated with trends towards reduced rates of repetition of deliberate self-harm. Small single trials associated with statistically significant reductions in repetition must be interpreted with caution and it is desirable that such trials are replicated.

Source of evidence

Type I evidence
Systematic review of RCTs

Hawton KKE et al. Psychosocial and pharmacological treatments for deliberate self harm. *Cochrane Database Syst Rev* 1999, Issue 3. Art. No.: CD001764. DOI: 10.1002/14651858.CD001764 Available at: <http://www2.cochrane.org/reviews/en/ab001764.html> [Accessed 16th 2010]

Psychological and psychosocial interventions

This review considered the evidence on the clinical effectiveness of **dialectical behaviour therapy** for suicide prevention in adolescents (18 years of age or younger).

The authors concluded that the available evidence on the use of dialectical behaviour therapy (DBT) in adolescents is sparse, with few high quality studies identified. All the included studies reported a measure of clinical effectiveness for reducing suicidality, including a reduction in self-harm behaviours and suicide ideation.

The results of the review suggest that DBT may be effective in the treatment of suicidality in adolescents with, or who are suspected to have, borderline personality disorder or bipolar disorder. However, more evidence is needed from higher quality studies to confirm these findings.

Includes 2 systematic reviews, 1 RCT, and 4 observational studies. No information is provided on where the studies included in this review took place. The search covered 2004 to January 2009.

This systematic review considered whether **cognitive behavioural therapies** are effective in reducing suicidal behaviour. The review included 28 controlled primary research studies of adolescents (n=7) and adults (n=21, although some overlap). 14 studies were from the USA, 5 the UK, 2 from Holland, 2 from Denmark and 1 each from Australia, Canada, India, Ireland and Israel.

Overall there was a highly significant effect for cognitive behavioural therapy (CBT) in reducing suicidal behaviour (suicide ideation, attempt or hopelessness). Overall effect sizes (Hedges g) for 25 studies with end of treatment data were -0.59 (95% CI -0.811 to -0.371, $p < 0.0001$). For 14 independent studies taking the longest time point the effect size was still significant at -0.315 (95% CI -0.494 to -0.135, $p < 0.001$).

Subgroup analyses indicated a significant treatment effect for adult samples (-0.775, $p < 0.0001$) but non significant for adolescents, for individual treatment (-0.260, $p = 0.175$) but not for groups, and for CBT when compared to minimal treatment or treatment as usual (but not when compared to another active treatment).

Although this treatment is promising, evidence of a publication bias tempers such optimism and authors note that there is a clear need for more and larger studies; and that future research should identify elements within CBT programmes that can be delivered in an effective and efficient manner at targeted populations of at-risk individuals.

Supporting evidence

Type I evidence
Systematic review of reviews and primary studies (including RCTs)

Mujoomdar M, Cimon K, Nkansah E. *Dialectical behaviour therapy in adolescents for suicide prevention: Systematic review of clinical effectiveness*. Ottawa: Canadian Agency for Drugs and Technologies in Health; 2009. Available at: http://www.cadth.ca/media/pdf/M0005_Dialectical_Behaviour_Therapy_Adolescents_Suicide_Prevention%20_L3_e.pdf [Accessed 6th Jan 2010]

There are some methodological weaknesses in this review. The search may not be comprehensive; there were no attempts to find unpublished studies (or check for publication bias) and there was minimal appraisal of included studies. The review was not unpicked for inclusion of relevant studies and may have included mixed populations.

Type I evidence
Systematic review of RCTs

Tarrier N, Taylor K, Gooding P. Cognitive-behavioural interventions to reduce suicide behaviour. A systematic review and meta-analysis. *Behaviour Modification* 2008; 32: 77-108.

Generally a good systematic review, some relevant studies may have been missed. Unpublished and non-English studies were not sought. Authors note much heterogeneity within studies and clear evidence of publication bias (and smaller & lower quality studies having larger treatment effects).but they also conclude evidence of a positive effect of CBT overall. Hedges g was used as effect size since authors stated that this controls for small sample size. This has been graded as type I evidence, however it was not stated in the text that RCTs were included, this assumption has been made on the basis of the titles of included studies.

This study from the Netherlands investigated the efficacy of a **short cognitive-behavioural therapy intervention** with 90 adolescents and adults (aged 15 to 35 years) who had recently engaged in self-harm – defined as both deliberate self-poisoning and self-injury.

Patients who received cognitive-behavioural therapy in addition to treatment as usual were found to have significantly greater reductions in the number of self-harm episodes in the past three months at 9 month follow-up compared with control, mean = 1.18 (SD = 4.22) v mean = 4.58 (SD=8.37), $p<0.05$ and significant reduction in Suicide Cognition Scale at 9 month follow-up, mean = 36.60 (SD=17.05) v mean = 54.88 (SD = 19.05), $p<0.01$.

This trial, to compare the effectiveness of a **personal construct therapy** approach with normal clinical practice in people who self-harm, involved 64 adults presenting to the A&E department in a North London Borough following an episode of self-harm.

There was a trend to a reduction in suicidal ideation in the intervention group at six months though this was not significant (possibly as a result of high attrition). The difference in means on the Beck Scale for Suicide Ideation (BSSI) at 6 months was -2.66 (95% CI -10.11 to 4.78, $p=0.46$).

There was some evidence of a lower frequency of repetition of self-harm in the intervention group. At one year, 0.17 and 0.94 episodes per client were observed in the intervention and control groups ($p=0.014$). At five years these values were 1.22 and 3.72 episodes per client ($p=0.035$).

The authors concluded that brief personal construct psychotherapy may be effective for people who self-harm and merits further exploration.

Supporting evidence

Type I evidence

Randomised controlled trial

Slee N et al. Cognitive-behavioural intervention for self-harm: Randomised controlled trial. *Br J Psychiatry* 2008; 192: 202-11.

Self-harm was not assessed with a validated tool. All participants allowed to pursue any form of usual treatment – not able to tell if each group is similar with regard to this. At 9 months only 40 treatment and 33 control patients remained in the study (i.e. 73 of the original group of 82 (=81%))

Type II evidence

Controlled clinical trial

Winter D, Sireling L, Riley T et al. A controlled trial of personal construct psychotherapy for deliberate self-harm. *Psychology and Psychotherapy: Theory, Research and Practice* 2007; 80; 23-37.

This was a small study with a high attrition rate. Only 11/40 (27.5%) in the control condition and 13/24 (54.2%) in intervention condition completed six month assessment although intention to treat analysis was used. Mean attendance at sessions = 10.4 (max attendance = 22 sessions). There was no indication of blinding of study personnel. This was a single centre study. Hospital records were used for measures of repeat attempts.

Contacting people by telephone one month after their discharge from an emergency department for deliberate self poisoning may help reduce the number of reattempted suicides over one year. This study undertaken in France considered the effects over one year of contacting 605 patients one month or three months after being discharged.

The number of participants contacted at one month who reattempted suicide was significantly lower than that of controls (12% (13/107) v 22% (62/280); $p=0.03$; Difference 10%, 95% CI 2% to 18%). This difference was seen over the first six months after telephone contact. No deaths from suicide occurred in this group. For participants contacted at three months, the number who attempted further suicide was not significantly lower than that of controls (17% (16/95) v 22%; $P=0.27$, difference 5%, - 4% to 14%).

Intention to treat analysis gave a non-significant result probably because 89 people could not be contacted by telephone.

This trial undertaken in Boston, USA, examined the efficacy of a short-term individual therapy, **Manual Assisted Cognitive Treatment (MACT)**, developed to treat suicidal or self-harming patients, as an adjunct to usual care. Participants were 30 females aged 18-40 with borderline personality disorder. Outcomes: deliberate self-harm (DSH) and suicidal ideation as measured by Parasuicide History Interview and Suicide Behaviours Questionnaire.

Although DSH and suicidal ideation were reduced in both MACT and care-as-usual groups, MACT was associated with a significantly greater post-treatment decrease in DSH frequency (interaction effect -7.29, $p<0.001$) This was maintained at 6-month follow-up (interaction effect -12.40, $p<0.001$) when an effect on DSH severity was also noted (interaction effect -3.58, $p<0.001$). MACT did not have an effect on suicide ideation or time-to-repeat DSH

Supporting evidence

Type II evidence
Randomised controlled trial

Vaiva G et al. Effect of telephone contact on further suicide attempts in patients discharged from an emergency department: Randomised controlled study. *BMJ* 2006; 332: 1241-4.

Authors note: 48 of the attempted suicides occurred before the telephone contact at one month. One option would have been to test the effect of earlier contact, between days 15 and 21 after the first suicide attempt, to see if a larger number of reattempted suicides could have been avoided.

Type II
Controlled Clinical Trial

Weinberg I et al. Manual assisted cognitive treatment for deliberate self-harm in borderline personality disorder patients. *J Pers Disord* 2006; 20:482-92.

The sample was small and this casts doubt on the statistical significance of the results. The therapist was not blinded to the study hypothesis although interviewers were blinded to treatment allocation; inter-rater reliability was good. DSH was self-reported. Patients who had attempted suicide or were assessed as having an elevated suicide risk were excluded.

Multisystemic therapy (MST), an intensive family and community based treatment, may be effective in preventing repetition of self harm in young people.

A study in the USA compared the effect of MST with that of psychiatric hospitalisation in a group of 156 young people who had been approved for admission to hospital as a result of suicidal ideation, self harm, psychosis or threat of harm to self or others. Participants were assigned to MST or hospitalisation. Indices of attempted suicide (self reported), suicidal ideation, depressive affect and parenteral control were assessed before treatment, four months after treatment and at 1 year follow up.

Self reported suicide attempts were evaluated using items from the Youth Risk Behaviour Survey (YRBS) and the Child Behavior Checklist (CBCL)

Using the YRBS 31% in the MST group were assessed as having attempted suicide pre-treatment and 19% in the hospital group. These figures were 14% (MST group) and 9% (hospital group) post treatment and 4% in both groups at 1 year follow up (significant treatment effect $p < 0.01$), however there was no significant treatment effect when assessing attempted suicide using the CBCL.

The authors concluded that their results generally support the effectiveness of MST in reducing suicide attempts in psychiatrically disturbed youngsters.

Supporting evidence

Type II evidence

Controlled clinical trial

Huey SJ et al. Multisystemic therapy effects on attempted suicide by youths presenting psychiatric emergencies. *J Am Acad Child Adolesc Psychiatry* 2004; 43:183-90.

These results should be treated with caution. It was not possible to assess if the two groups were comparable at the start of the study. 44% of MST youths were also admitted to psychiatric hospital during treatment because of emergencies that could not be handled in the community. Families were paid \$50 for each completed assessment.

Consideration needs to be given to whether the results of this study would be generalisable to the UK because of the characteristics of the sample used and the differences between the health systems of the USA and the UK.

Brief psychodynamic – interpersonal therapy may be effective in reducing suicidal ideation and repetition of self harm.

58 patients who presented to an accident and emergency department at a UK university hospital following deliberate self-poisoning were given four sessions of psychodynamic interpersonal therapy by a nurse therapist in their own home. 61 patients were allocated to treatment as usual.

Participants randomised to the intervention had a significantly greater reduction in suicidal ideation at six month follow up compared with those in the control group (reduction in the mean (SD) Beck scale 8.0 vs 1.5). They were more satisfied with treatment and less likely to report repeated attempts to harm themselves at follow up (proportion repeating 9% vs 28% in control group: difference 19%, 95% CI 9% to 30%, $p=0.009$)

Those with less severe depression, no prior history of self harm and who had not taken alcohol with the overdose were most likely to benefit

The study authors concluded that brief psychodynamic interpersonal therapy may be a valuable treatment after people have deliberately tried to poison themselves.

This small study, conducted in Middlesbrough, involved 32 patients aged 18-65 years who presented at hospital for the first time following an episode of self harm. The study assessed the feasibility of a **single solution-focussed brief therapy** (SFBT) session. The study was done to aid the design of a future randomised trial.

Two had repeated self-harm after 1 year, compared with 40 in the total group of 302 patients presenting with first-time self-harm during the period of the study (6.25% vs 13.2%, $p=0.3$).

The authors concluded that the results of the pilot study do not allow a conclusion about the effectiveness of the intervention but it does not appear to worsen the outcome.

Supporting evidence

Type II evidence

Controlled clinical trial

Guthrie E et al. Randomised controlled trial of brief psychological intervention after deliberate self poisoning. *BMJ* 2001; 323:135-8.

Guthrie E et al. Predictors of outcome following brief psychodynamic-interpersonal therapy for deliberate self-poisoning. *Aust N Z J Psychiatry* 2003; 37:532-6.

The inclusion criteria used in this study may mean that those most at risk of repetition of suicidal behaviour were excluded, only half those eligible for inclusion agreed to participate. There was no control for non specific effects of psychotherapy such as increased contact with nurses. There were baseline differences between the treatment and control groups in terms of marital status (8% married in intervention group, 25% in treatment as usual) and psychiatric history (48% in intervention group, 60% control).

Type III evidence

Non randomised study

Lamprecht H et al. Single-session solution-focused brief therapy and self-harm: a pilot study. *J Psychiatr Ment Health Nurs* 2007; 14: 601-2.

A very small number of participants were chosen for intervention without an appropriate control group. Repetition measured by a repeat visit to the same hospital. There is real potential for bias so nothing can be concluded from the results.

This study evaluated the impact of an 18-week **Emotional Coping Skills** groups for 34 participants with parasuicidal behaviour in the last 6 months. The group was mixed sex, ages ranged from 20-53. The primary outcome measure was days spent in hospital over the 18 months prior to participation, compared with the subsequent 18 months. Secondary data, using CORE, a 34-item self-rated questionnaire, on well being, symptoms, risk, social functioning and satisfaction were gathered.

During the data collection period (18 months either side of the pre-group formulation meeting) 17 people were admitted to the acute inpatient ward. Two were excluded as there were no pre-group data available. For the remaining 15 people, a total of 1540 bed days were recorded prior to the group and 1080 post group, a decrease of 460 days in total (30%). One person accounted for 37% (398) of the total post-group bed days. Four members had increased bed use post group (a total of 89 days); the remainder decreased, on average by 85 days per person (range 1– 210). For the 9 participants with no admission during the 3 years, outpatient appointments fell from 54 (18 months pre) to 21 (subsequent 18 months), a reduction of 61%. All 9 participants showed a decrease in their outpatient appointments.

An initial Friedman's analysis showed a significant interaction between CORE scores and passage of time across formulation, start and end of ECS group ($df=3$, $p=.02$). Wilcoxon pairwise analyses revealed a significant fall only between formulation and end of group ($z=-2.84$; $p=.003$).

The study authors concluded that the approach is not intended to replace DBT, but rather to use its therapeutic potential in services unable to offer full DBT.

Crisis cards

Patients randomised to receive a **card offering a 24 hour crisis telephone consultation** with an on-call psychiatrist for up to six months after an index episode of self harm were as likely to repeat self harm in the 12 months following the index episode as those who did not receive a card (odds ratio 1.19, 95% CI 0.85 to 1.67).

827 participants were recruited for the study, 417 were given a crisis card and 410 received standard treatment.

Supporting evidence

Type III evidence
Uncontrolled before and after study

Sambrook S, Abba N, Chadwick P. Evaluation of DBT emotional coping skills groups for people with parasuicidal behaviours. *Behav Cogn Psychother* 2007; 35:241-4.

This is a very small uncontrolled study. There is a lack of baseline data. Only 15/17 patients admitted had both pre-test and post-test data. It is assumed that inpatient stays are related to suicidal behaviour but this is not explicitly stated in the paper.

It is assumed that the findings would generalise to other similar settings in the UK but no participant details given and the actual site of the study is not stated in the text.

Supporting evidence

Type II evidence
Controlled clinical trial

Evans J at al. Crisis card following self-harm: 12-month follow-up of a randomised controlled trial. *Br J Psychiatry* 2005; 187:186-7.

Offering GP consultation

An intervention in which **GPs sent a letter** to people who had self harmed inviting them to consult combined with guidelines on the assessment and management of deliberate self harm for GPs to use in these consultations did not reduce the incidence of self harm in the intervention compared with the control group in the 12 months following the index episode (odds ratio 1.2, 95% CI 0.9 to 1.5).

The study involved 98 general practices in Avon, Wiltshire and Somerset and 1932 patients who had attended accident and emergency following an episode of self harm.

Long term contact with professionals

A **postcard intervention** (eight postcards sent over a 12-month period after discharge) maintained the halving of the rate of repetition (cumulative readmissions) of hospital-treated self-poisoning events over a 2-year period, although it did not significantly reduce the proportion of individuals who repeated self-poisoning. The study took place in Australia and included 772 participants.

In the intervention group 21.2% (80/378; 95% CI 17.0–25.3) had one or more readmissions for self-poisoning compared with 22.8% (90/394; 95% CI 18.7–27.0) in the control group 24 months after baseline, a non-significant difference ($\chi^2 = 0.317$, $df = 1$, $P = 0.57$), the difference between groups being -1.7% (95% CI -7.5 to 4.2)

There were 310 cumulative readmissions in the control group and 145 in the intervention group. The risk of repetition was statistically significantly lower in the intervention group (IRR=0.49, 95% CI 0.33–0.73). Separate subgroup analyses by gender showed the treatment was effective for women (IRR=0.49, 95% CI 0.30–0.80) but not for men (IRR=0.97, 95% CI 0.50–1.88).

A five-year follow up is planned

Supporting evidence

Type II evidence
Cluster controlled trial

Bennewith O et al. General practice based intervention to prevent repeat episodes of deliberate self harm: cluster randomised controlled trial. *BMJ* 2002; 324:1254-7.

Supporting evidence

Type II evidence
Randomised controlled trial

Carter GL et al. Postcards from the EDge: 24-Month outcomes of a randomised controlled trial for hospital-treated self-poisoning. *Br J Psychiatry* 2007; 191: 548-53.

20 persons in the control group were inadvertently exposed to the intervention, whereas 76 persons in the treatment group did not consent to receive the intervention and a further 32 persons were not exposed to the intervention. However response rate was 84% and intention to treat analysis was used.

The decision to include a subgroup analysis based on gender was post hoc based on the findings from the primary outcomes at 12 months. 68% of participants were female.

Psychosocial interventions for young offenders

The purpose of this study was to determine the impact of a **structured risk management programme** targeted at risk factors identified using an adolescent risk-assessment checklist (Risk Assessment Multi-system Behavioural Outcomes RAMBO). The programme used specific cognitive behavioural techniques aimed at reducing risk factors and strengthening protective factors.

Participants were 34 consecutive admissions to a medium secure adolescent inpatient psychiatric unit in the UK. The programme was delivered as a 90 minute weekly group session which all inpatients and staff attended. Its effectiveness was assessed by comparing rates of attempted suicide and self harm in the 4 weeks before admission with rates in the last 4 weeks of admission.

The number of young people who had self harmed or attempted suicide was significantly lower during the last 4 weeks of admission than during the 4 week pre-admission period. (2/34 vs. 25/34, Fisher's exact test, $p < 0.0000$).

In the majority of cases the last 4 weeks of admission were spent on 4 weeks pre-discharge trial leave in an open community setting.

Role of parents with children who self harm

This study conducted in London was undertaken to gain the **perspective of parents of adolescents who self-harm** on: (a) history of self-harm and health service provision; (b) their understanding and ability to make sense of self-harm behaviour; (c) emotional and personal impact; and (d) parent skills as carer and hope for the future. It included 12 parents (nine mothers, two fathers, one grandmother) who were main carer of an adolescent aged 13 to 18 years who had been referred to a community and adolescent mental health service (CAMHS) for self-harm.

Parents commonly suspected and spotted self-harm prior to disclosure or service contact; however, communication difficulties and underestimating significance led to delays in addressing the behaviour. Parents struggled to understand and cope with self-harm.

The study authors concluded that parents require advice and support from outside services to help them manage self-harming behaviour and its personal impact. This study suggests parents are early to spot signs of self-harm, indicating their key role in reaching young people in the community who remain unknown to health services.

Supporting evidence

Type III evidence
Before and after study

Mutale TI. Rambo: The evaluation of an intervention program for UK mentally abnormal young offenders. *Research in Social Problems and Public Policy* 2005; 12: 53-73.

Participants acted as their own controls and the author discusses the limitations of using participants as their own controls or using another intervention.

This was a very small study sample and the findings may not generalise.

Supporting evidence

Type IV evidence
Qualitative study

Oldershaw A et al. Parents' perspectives on adolescent self-harm: Qualitative study. *Br J Psychiatry* 2008; 193; 2: 140-4.

This is a very small study and should be considered exploratory

Level 4: Postvention

The term 'postvention', probably first used by Shneidman in 1972⁸, is used to describe 'appropriate and helpful acts that come after a dire event'.

The approach at level 4 differs from levels 1 to 3 in that it is concerned with the aftermath of suicide. It addresses some of the issues around helping those bereaved by suicide, learning lessons from completed suicide and media reporting of suicide.

4.1 Reviewing completed suicides

Reviewing suicide of people known to mental health services and those in the community who have not been in contact with mental health services may enable lessons to be learned that could contribute to suicide prevention.

Reviews of completed suicide

Avoidable deaths the most recent report of the **National Confidential Inquiry into Suicide and Homicide by people with Mental Illness** investigated 6,367 deaths that occurred between April 2000 and December 2004. These were 27% of all suicide deaths occurring in England and Wales in the period.

The reports authors' recommended that mental health services should take steps to;

- Reduce absconding from in-patient units
- Strengthen transition from ward to community
- Ensure that high risk patients receive enhanced CPA, backed up by peer review in the highest risk cases
- Respond robustly when care plans breakdown
- Accept that prevention is possible in many cases, particularly for in-patient suicides
- Strengthen observation procedures on the wards
- Further improve the physical environment on wards
- Develop services for dual diagnosis patients
- Give greater emphasis to risk management in older people's services

Supporting evidence

Type IV evidence
Case series

National Confidential Inquiry. *Avoidable deaths. Five year report of the National inquiry into suicide and homicide by people with mental illness*. Manchester: University of Manchester; 2006. Available at: <http://www.nmhdu.org.uk/silo/files/summary-avoidable-deaths-five-year-report-.pdf> [Accessed 6th May 2010]

⁸ Shneidman ES. Foreword. In: AC Cain ed. *Survivors of suicide*. Springfield: Charles C Thomas; 1972. p ix-xi.

This study describes the social and clinical characteristics of **inpatient and post discharge** cases of **suicide**. 754 inpatients and 1100 patients who had died within 3 months of discharge from inpatient care were included as part of the National Confidential Inquiry.

Nearly a quarter of inpatient deaths occurred within 7 days of admission. 236 (31%) took place on the ward, the majority by hanging. Post discharge suicide was most frequent in the first 2 weeks after leaving hospital; the highest number occurred on the first day.

The authors concluded that suicide might be prevented among inpatients by improving ward design and removing fixtures that can be used in hanging. Prevention of suicide after discharge requires early community follow-up and closer supervision of high risk patients.

The **National Patient Safety Agency** has produced a toolkit that allows services to assess whether they are addressing the Confidential Inquiry recommendations. The audit involves a retrospective examination of the notes and records of people who have completed suicide or who have been considered to be at significant risk of suicide.

The tool kit aims to:

- Support mental health organisations in establishing a system for suicide audit which fits their local context
- Promote the use of case note review as a means of changing how mental health organisations identify risks and measure performance
- Support the development of local suicide prevention strategies
- Produce data which could potentially be merged at regional and national levels to identify trends for further learning

Supporting evidence

Type IV evidence

Case series

Meehan J, Kapur N, Hunt et al. Suicide in mental health in-patients and within 3 months of discharge. *Br J Psychiatry* 2006; 188: 129-43.

Type V evidence

National Patient Safety Agency/National Reporting and Learning Service. *Preventing suicide: a toolkit for mental health services*. London: NPSA; 2009.

Available at:

<http://www.nrls.npsa.nhs.uk/resources/?entryid45=65297>

[Accessed 12th May 2010]

Psychological autopsy

This **review of methodological** issues around psychological autopsy is designed to assist those considering using this method and those who need to assess reports of psychological autopsy studies.

The authors conclude that psychological autopsy is a valuable method of expanding our understanding of the factors that contribute to suicide and identifying potential preventative strategies. They note that the method has its limitations and is associated with considerable problems. Careful planning can improve the reliability and value of the approach.

A **case controlled psychological autopsy** study of 100 people not in contact with mental health services at the time of their suicide with 100 age & sex matched living controls, found that nearly a third of cases (32%) had no current mental illness, although past contact with mental health services was a clear predictive factor for suicide. The study took place in South West England. The findings highlight the need for population based strategies and suggests that despite their apparent recovery, those with a past history of mental illness may remain at risk of suicide.

Root cause analysis

This paper reviews the **benefits and limitations of root cause analysis** in the investigation of serious untoward events in mental health services. It concludes that the method is not proven as a means of reducing serious untoward events but suggests that it might be more consistent and less threatening and demoralising for staff than other approaches.

Supporting evidence

Type V evidence
Methodology review

Hawton K et al. The psychological autopsy approach to studying suicide: a review of methodological issues. *J Affect Disord* 1998; 50: 269-76.

Type IV evidence
Case control study

Owens C et al. Suicide outside the care of mental health services. A case-controlled psychological autopsy study. *Crisis* 2003; 24:113-21.

Supporting evidence

Type V evidence
Methodology review

Neal LA et al. Root cause analysis applied to the investigation of serious untoward incidents in mental health services *Psychiatric Bulletin* 2004;28: 75-7.

4.2. Managing the impact of service user deaths

Impact on staff

A **questionnaire survey of 247 psychiatrists** conducted in Scotland, found that around a third of those who had experienced a patient suicide suffered adverse emotional consequences (low mood, irritability, poor sleep) and 15% considered early retirement. 42% indicated that they had changed their professional practice as a result of patient suicide, for example, a more structured approach to the management of patients at risk and an increased use of mental health legislation.

Colleagues, family and friends were considered to be the best sources of help and critical incident reviews were seen as useful.

In a small **questionnaire survey** of 77 community mental health team members conducted in Islington, 66% reported that patient suicide had some or great impact on their personal life (for example sleep disturbance, poor concentration, preoccupation with work) and 73% reported some or great impact on their professional life (for example self doubt, anxiety, distancing from clients). 40% reported that these adverse effects lasted longer than 1 month.

Peer support (94%), family support (78%) and dedicated staff meetings (75%) were all reported as being helpful in dealing with adverse effects.

This study set out to assess and identify **the impact of suicide on mental health professionals** and to consider the best way to ensure staff are supported effectively. 11 staff representing 7 different mental health teams from an inner London borough were interviewed,

Three main themes emerged; the effects of the incident, the effect of stress and the use of facilitators. A profile of some potential risk factors for staff who may find it slightly more difficult to cope was generated from the interview study.

A major finding of the study was that the impact of suicide on staff varies considerably from one professional to another and that this variation is not accounted for by differences such as profession, grade or experience.

The study author concluded that the use of the Brief screening instrument for post-traumatic stress disorder⁹ is recommended and anyone returning to work having had time off as a result of an incident is offered a supportive back to work meeting, giving an opportunity for any outstanding issues to be discussed openly.

Supporting evidence

Type IV evidence
Cross sectional study

Alexander DA et al. Suicide by patients: questionnaire study on its effects on consultant psychiatrists. *BMJ* 2000; 320:1571-4.

Type IV evidence
Cross sectional study

Linke S, Wojciak J, Day S. The impact of suicide on community mental health teams: findings and recommendations. *Psychiatric Bulletin* 2002; 26:50-2.

Of the 77 questionnaires only 44 were returned so response rate was only 57%. The researchers were unable to ascertain whether all staff had received the questionnaire.

Type IV evidence
Mixed methods study
principally qualitative

Spencer J. Support for staff following the suicide of a patient. *Mental Health Practice* 2007; 10: 28-31.

Small study, only 11 participants, these are unlikely to be representative of all staff working within the mental health service of interest. The findings might not generalise.

Lack of information provided in the text makes it difficult to assess the quality of the study.

⁹ Brewin CR et al. Brief screening instrument for post-traumatic stress disorder. *B J Psych*, 2002; 181: 158-62.

This study was undertaken to discover the **impact of serious untoward incidents** (suicide, homicide, suicide attempt, serious assault, absconding of high risk patients) **on acute psychiatric inpatient wards**.

56 professional staff from the acute inpatient psychiatry service in 1 NHS trust were interviewed. Of the incidents identified by staff 44% (17/39) were either completed or attempted suicide and one was a self-harm incident.

Staff reported feelings of shock, depression, demoralisation, upset, loss and grief followed by ruminations, guilt and anxiety. Levels of containment increased as did the focus on risk assessment. Processing of the emotional impact was hindered by the pace of ward life, a lack of external support and management investigations. Patient responses were largely ignored. A few staff responded negatively, hindering service improvements

Authors conclusions; The findings confirm previous studies that staff suffer considerable stress and trauma as a result of patient suicides and other serious untoward incidents. The impact is not restricted to the ward where the patient resided and it can endure for many years. There is a need for staff to prepare themselves for these events in advance and for them to receive external support once they have occurred.

The impact of dealing with a **death in custody** was explored in 49 prison officers who had dealt with such an event in the period 3-7 months prior to the study. The purpose of this study, conducted in the UK, was to investigate the incidence of trauma and trauma related symptoms and identify factors mediating the impact on staff.

18 (26.7%) of staff members scored over the cut off point on the trauma factor of the Traumatic Symptom Inventory i.e. exhibiting symptoms of post traumatic stress disorder (PTSD). Exploration of the relationship between traumatic symptoms and the other variables measured suggested that those reporting higher stress were less helpless and less likely to use avoidance. On the basis of this counterintuitive finding the analysis was conducted separately for the PTSD and non-PTSD groups.

Separate analysis of the PTSD and non-PTSD groups was reported as showing that the only significant mediator for the PTSD group was prior experience ($B = 5.79$, 95% CI 0.92 to 10.67, $p < 0.05$). For the non-PTSD group a range of variables mediated the impact.

The authors concluded that the small sample means that any conclusions are suggestive rather than definitive but the finding that 26.7% of the sample exhibited clinical levels of PTSD provides a case for prevention rather than treatment.

Supporting evidence

Type IV evidence
Cross sectional
interview survey

Bowers L et al. Serious untoward incidents and their aftermath in acute inpatient psychiatry: The Tompkins Acute Ward Study. *Int J Ment Health Nurs* 2006; 15: 226-34.

The authors noted that the interviews took place in a single organisation at one point in time; some of the events referred to by the subjects were quite distant. The memory of these events might have faded and there was no opportunity to follow the changing emotional and other reactions over time. In addition interviewees may not have wished to disclose the entire range of feelings they had in response to incidents, so for example, reports of less socially acceptable feelings may have been withheld.

Type IV evidence
Cross sectional study

Wright L et al. The mental health consequences of dealing with self-inflicted death in custody. *Counselling Psychology Quarterly* 2006; 19:165-80.

The study used a cross-sectional design. A longitudinal design may have been better to fully understand PTSD which develops over a period of time. No details on recruitment and from how many prisons. Some individuals were excluded because they had been diagnosed as being clinically affected by the suicide and signed off by health professional. Only 18/49 (36.7%) scored over the cut-off point on the trauma factor of the Traumatic Symptom Inventory, i.e. exhibiting symptoms of PTSD. This may have skewed the results.

Impact on staff and patients

This review considered the **management of bereavement** in 1) those who have recently experienced the loss of a close family member or friend by suicide, 2) fellow patients on a ward or caregivers, and 3) therapists and other primary caregivers.

Authors key points and conclusions

When suicide occurs in inpatient or partial hospitalisation settings, staff and fellow patients should be considered among the survivors and special steps taken to assist them.

Professionals may be traumatised by the suicide of a patient. One-half of psychiatrists will experience such an event at least once during their careers; one-third of psychiatrists will experience it during their training, most probably during the very early phase, when they are most vulnerable.

Professionals, too, may have profound dysphoric feelings and negative reactions following a patient's suicide, and some will develop depression or PTSD. Some will face administrative sanctions or litigation. When a professional has lost a patient to suicide, colleagues and friends should rally around, sensitive to the professional's feelings of hurt and doubts about competency as a professional. Supervisors of trainees need to be helpful, nonjudgmental, and compassionate.

Clinicians need to document in detail events surrounding the suicide while they are fresh, for administrative and legal purposes. If there are any indications of anticipated legal action the professional protection association should immediately be consulted.

Supporting evidence

Type V evidence
Literature review

Sakinofsky I. The aftermath of suicide: managing survivors' bereavement. *Can J Psychiatry* 2007; 52:129S-36S

This is a weak narrative review and major methodological steps seem to have been missed.

4.3 Supporting those bereaved through suicide

Impact of bereavement through suicide

This study investigated if **survivors respond** differently when **alcohol abuse complicates suicide**. Specifically the study considered if the immediate family members (parents, spouses and children) react differently from relatives of non alcohol related suicides. 261 relatives of people who had died from suicide were included in the study.

The spouses of alcohol misusing suicides were significantly more likely to react with anger than those when alcohol did not complicate the picture (adjusted odds ratio 3.3, 95% CI 1.4 to 0.4). The children of persons with alcohol use disorder who committed suicide were less likely to feel guilty (adjusted odds ratio 0.2, 95% CI 0.1 to 0.8) or abandoned (adjusted odds ratio 0.2, 95% CI 0.1 to 0.7) than children of non alcohol related suicide victims. There were no statistically significant differences in surviving parents' emotions.

The study authors concluded that alcohol use disorder before suicide changes affective responses in spouses and children who are left behind. Bereavement counsellors should be alert for complex grief and mourning responses among this group of suicide survivors.

A cohort study in the USA followed up 166 **friends of adolescents who had died from suicide**, for three years. The study found that there was no difference in suicide attempts between those who had been exposed to suicide and those who had not.

An increased incidence of depression and anxiety was found in friends (adjusted odds ratio 2.8, 95% CI 1.8 to 4.3); this was most marked in the first six months of follow up (adjusted odds ratio 5.8, 95% CI 2.7 to 12.4). An increased incidence of post traumatic stress disorder (PTSD) in those exposed was seen in early and later periods of follow up. Those exposed youths who knew the suicide plans of those who died were at greatest risk for incident depression and PTSD over the entire course of follow up (odds ratio 9.4, 95% CI 1.3 to 67.2).

The authors concluded that exposure to suicide among friends and acquaintances does not result in an increased risk of suicidal behaviour, but has a relatively long impact in terms of increased incidence of depression, anxiety and PTSD.

Supporting evidence

Type IV evidence
Cohort study

Tall K et al. Do survivors respond differently when alcohol abuse complicate suicide? Findings from a psychological autopsy study in Estonia. *Drug Alcohol Depend* 2008; 95: 129 – 33.

Study undertaken in Estonia, may not generalise to the UK.

The authors noted that here was a different time interval between suicide and interview for alcohol related (5.9 months) and non alcohol related (6.6 months) cases. 'Shame' as a frequent emotion in suicide bereavement was absent in the list of emotions survivors were asked to mark.

Type IV evidence
Cohort study

Brent DA et al. Long-term impact of exposure to suicide: A three-year controlled follow up. *J Am Acad Child Adolesc Psychiatry* 1996; 35:646-53.

This was a study undertaken in the UK, of the **grief experiences and needs of bereaved relatives and friends** of older people who died through suicide. 46 relatives and friends bereaved through the suicide of a person 60 years or older were included. The control group were 39 people bereaved by the natural death of an older person

Those bereaved through suicide scored higher on measures of stigmatisation (mean Grief Experience Questionnaire (GEQ) score; cases 7.5, controls 6.3, *t* test $p=0.04$), shame (mean GEQ score cases 8.5, controls 6.8, *t* test $p=0.005$) and sense of rejection (mean GEQ score cases 9.5, controls 6.1, *t* test $p=0.001$).

42.4% of those bereaved through suicide reported problems in their dealings with the coroner's office and 38.3% described distress caused by media reporting of the inquest.

This study, which took place in the Netherlands, compared the **self reported psychiatric and general health** of 153 relatives of 74 people who died from suicide with that of 70 relatives of 39 people who had died natural deaths.

Adjusting for demographics, neuroticism and expectedness of the death, those bereaved through suicide had higher levels of pain (regression coefficient -0.43, 95% CI -0.7 to -0.003, $p<0.01$), poorer social functioning (regression coefficient -0.5, 95% CI -0.8 to -0.2, $p<0.001$), experienced more loneliness (odds ratio 0.27, 95% CI 0.01 to 0.5, $p<0.01$) and had increased feelings that their need for professional help was unmet (odds ratio 8.9, 95% CI 4.1 to 19.6, $p<0.001$).

The authors concluded that suicide bereaved individuals may constitute a high risk group of mourners in need of targeted postvention.

Supporting evidence

Type IV evidence
Case control study

Harwood D et al. The grief experiences and needs of bereaved relatives and friends of older people dying through suicide: a descriptive and case-control study. *J Affect Disorder* 2002; 72:185-94.

The participation rate of potential subjects was low, especially in the control group. Proportions of different kinships to the deceased differed in study and control groups.

Type IV evidence
Cross sectional study

Groot MH, Keijser J, Neeleman J. Grief shortly after suicide and natural death: a comparative study among spouses and first-degree relatives. *Suicide Life Threat Behav* 2006; 36:418

It is possible that the participants recruited were not representative. Data were obtained for 31% of suicide-bereaved families. Hesitancy and refusal may have affected the results. There were also difficulties in recruiting relatives of people who died naturally at a younger age. It is not clear how many naturally bereaved families approached but 76 consented. Outcomes were measured by self-report. The study was conducted in Netherlands and may not generalise to the UK.

This was a small study involving a cross sectional self reported survey of **people bereaved through suicide**. The survey tool, the Survivor needs assessment survey, was designed to identify the practical, psychological and social difficulties encountered since the suicide, the formal and informal sources of support that have helped, resources used in recovery and barriers to finding support.

The sample included 63 adult survivors of suicide, 42 who were attending a survivors conference in New England and 21 who had been members of an 8 week survivor of suicide support group in Pittsburgh USA.

The findings support earlier research that suggests those bereaved through suicide may experience prolonged and difficult bereavement complicated by high levels of mental health problems and functional impairment.

Many of those who took part in the survey experienced considerable levels of self reported depression (75%), guilt (73%) and anxiety (64%) as well as intense sadness and yearning for the person they have lost (84%). 61% reported that this impaired their ability to function at home or work.

Support from mental health professionals was seen as the most beneficial form of professional support (80%) and partners (82%), children (85%) and close friends (87%) were the most beneficial sources of informal support.

The most frequently perceived barriers to support were depression and lack of energy to seek help (52%) and lack of information on where to get help (45%).

Supporting evidence

Type IV evidence

Cross sectional study

McMenamy JM et al. What do suicide survivors tell us they need? Results of a pilot study. *Suicide Life Threat Behav* 2008; 38: 375-89.

There are a range of methodological problems with this research. There was no comparison group so it is not known whether those bereaved through other types of deaths would have responded in the same way. Participants were asked to recall their feeling since their loss, the time since this loss was very varied and the reliability of this retrospective data is questionable. The results of this study may not be generalisable to other populations. The self selected nature of the sample is likely to be a source of considerable bias and respondents were predominantly female, with a mean age of 50, and well educated.

Despite its methodological problems the Survivor needs assessment survey may be a useful tool for identifying the needs of those bereaved through suicide. The authors report that since this study the survey tool has been refined and shortened and many of the problems identified in this study have been addressed. If this tool was used in the UK a pilot study would be necessary and the tool might need to be adapted for the UK population.

This study looked at the **identity issues experienced by women who had lost a child through suicide**. Six women who had lost one and one woman who had lost two biologically related children were included. All the children were aged over 16 when they died.

Most participants in this study reported difficulty reconciling their identity as protectors of their children which led to feelings of failure. All of the participants spoke about their profound need to talk about their deceased child and many felt they were unable to do this with family or friends, especially with the passing of time.

Various strategies were used by the women to manage identity threat. These included trying to find an explanation for the suicide that did not implicate them as a potential cause and joining groups with others bereaved by suicide.

The authors concluded that the insights gained from this study have significant implications for counseling psychologists. They recommend that counseling psychologists should help women who feel they have failed reconcile their identity as protectors of their children. They also suggest that counseling psychologists can be someone to whom a mother could disclose her feelings about the child who has died.

Interventions for people bereaved through suicide

This review evaluated the effectiveness of **interventions to support people bereaved through suicide**.

Eight studies were identified. None were UK-based and all but one had substantial methodological limitations.

When compared with no intervention, there was evidence of some benefit from single studies of a cognitive-behavioural family intervention of four sessions with a psychiatric nurse (De Groot; No statistically significant differences other than a reduction in blame perception, $p=0.01$); a psychologist-led 10-week bereavement group intervention for children (significant reductions in anxiety, $p\leq 0.001$, and depression, $p\leq 0.006$); and 8-week group therapy for adults delivered by a mental health professional and volunteer (no data provided). The findings from studies comparing two or more active interventions were more equivocal.

The study authors concluded that although there is evidence of some benefit from interventions for people bereaved by suicide, this is not robust. Further methodologically sound evidence is required to confirm whether interventions are helpful and, if so, for whom.

Supporting evidence

Type IV evidence
Qualitative study

Thrift O, Coyle A. An interpretative phenomenological analysis of maternal identity following child suicide. *Counselling Psychology Review* 2005; 20:18-23.

Very small sample.

Supporting evidence

Type I evidence
Systematic review

McDaid C et al. Interventions for people bereaved through suicide: Systematic review. *Br J Psychiatry* 2008; 193: 438-43.

Review limited by small number of available studies, their diversity and general poor quality.

The study assessed the effectiveness of an **internet based cognitive behavioural therapy programme** for bereaved individuals diagnosed as suffering from complicated grief.

Participants were assigned to either the treatment group or the waiting list control condition. The intervention lasted 5 weeks. There were 26 participants in the treatment group and 29 in the control. Follow up was at three months for the intervention group.

Analysis of interactions between time and treatment, to indicate differential development in the two groups over time, revealed that the treatment group improved significantly for intrusion ($F=11.16$, $p<0.1$), avoidance ($F=17.21$, $p<0.0001$), failure to adapt ($F=9.79$, $p<0.01$), depression ($F=9.35$, $p<0.01$), and anxiety ($F=6.73$, $p<0.01$). There were no significant differences in indicators of physical functioning.

This study, undertaken in the USA, set out to investigate **how suicide survivors participate in internet support groups**. Study participants were parents who had lost a child to suicide. Demographic and loss related characteristics of 104 parents using internet support and 297 using face to face support were compared.

Compared with their face to face counterparts internet support users experienced greater suicide stigmatisation from their families ($\chi^2 = 7.5$, $df = 1$, $p = 0.006$) and from co workers, friends or acquaintances ($\chi^2 = 14.7$, $df = 1$, $p = 0.001$).

There were similar levels of urban, suburban, small city and rural residents in both internet and face to face samples.

Internet support users reported that they used this method of support as it was available 24/7 and allowed them to invest more time in this type of support experience.

Supporting evidence

Type II evidence

Controlled clinical trial

Wagner B, Knaevelsrud C, Maercker A. Internet-based cognitive-behavioural therapy for complicated grief: a randomized controlled trial. *Death Stud* 2006; 30:429-53.

Recruitment was widespread via media and the internet so it is possible that sample was biased to people actively seeking support. Treatment was limited to those with internet access. Outcomes were self reported. There was no direct interaction with therapist/researcher so it is possible that misunderstandings may arise. 213 requested questionnaires but 88 were excluded for not meeting inclusion criteria. Only 55 finally included. Average age 37, different ages could experience different symptoms. Time elapsed since bereavement was quite variable and large - 14 months to 29 years. 51/55 were female. Only 18% (10/55) were cases of homicide or suicide & only the combined figure is available.

Type IV evidence

Cross sectional survey

Fiegelman W et al. Internet support groups for suicide survivors: a new mode for gaining bereavement assistance. *Omega* 2008; 57: 217-243.

The account of the methodology is confusing and difficult to follow. Findings may not generalise. Third author was the founder of 'Parent of Suicide' the internet support group investigated in this study – this may have implications for author objectivity. Considerable differences in demographics between the two groups.

4.4 Media portrayal of suicide

Impact of non fiction media

A study in Hong Kong in response to the emergence of a **new method of suicide** (charcoal burning) during an economic recession concluded that media reports were pivotal in bringing this method to the attention of a specific group of vulnerable people.

People who completed suicide by the charcoal burning method were more likely to have been economically active ($\chi^2 = 13.3$, $df = 3$, $p = 0.004$), physically healthy ($\chi^2 = 8.9$, $df = 1$, $p = 0.003$) and were less likely to have a pre existing mental illness ($\chi^2 = 21.8$, $df = 1$, $p < 0.001$) than those who completed suicide using other methods. Charcoal burning suicide was associated with over indebtedness ($\chi^2 = 55.5$, $df = 1$, $p < 0.001$). Media reports were pivotal in linking financial troubles with charcoal burning

The authors argued that media reporting conveyed an implicit message that charcoal burning is an easy, painless and effective means of ending one's life. Survivors who were interviewed reported that they learnt of, and were reminded of, the method through newspaper reports.

A study based on a large scale media monitoring project in Australia examined whether **media items about suicide were associated with differential increases in actual suicides**. 39% of media items were followed by an increase in male suicides and 31% by an increase in female suicides. 25% were followed by no change in male suicides, 43% by no change in females. 36% were followed by a decrease in male suicides, 26% in females.

Compared with radio items, television items were significantly more likely to be associated with an increase in both male (odds ratio 1.34, 95% CI 1.11 to 1.63) and female suicides (odds ratio 1.51, 95% CI 1.23 to 1.84).

Items about individuals experience (odds ratio 1.36, 95% CI 1.15 to 1.63) were significantly more likely to be followed by an increase in male suicides and items featuring murder-suicides (odds ratio = 0.5, 95% CI 0.38 to 0.66) were significantly less likely to. Items on murder suicides (odds ratio 0.72, 95% CI 0.55 to 0.96) were significantly less likely to be followed by an increase in female suicides.

The authors concluded that there may be an association between the quantity of media items in a given period and the number of subsequent suicides with television items exerting a particularly strong influence. Unravelling the precise characteristics of the media items that may be most likely to be followed by an increase in suicides clearly requires further investigation.

Supporting evidence

Type IV evidence
Case control and ethnographic study

Chan KPM et al. Charcoal-burning suicide in post-transition Hong Kong. *Br J Psychiatry* 2005; 186:67-73.

Authors limitations. Without psychological autopsy it was not possible to ascertain the psychopathological state of those who died by suicide. Informants in the ethnographic study were survivors rather than victims of suicide attempts but their demographic characteristics resembled those who died from charcoal burning. The sample in the ethnographic study was 25 which some researchers may consider rather small.

Type IV evidence
Ecological study

Pirkis JE et al. The relationship between media reporting of suicide and actual suicide in Australia. *Soc Sci Med* 2006; 62:2874-86.

The study design means that a causal link between individual behaviour and media influence cannot be established.

In this study **news media (newspaper and television reports)** effects on suicide were assessed for three age groups 15 to 25, 25 to 44, older than 44. 15 to 25 year olds were expected to display strongest imitative effects, 25 to 44 to display weakest effects and those over 44 to display intermediate effects although the basis of these hypotheses are not fully explained.

Media content and daily suicide occurrences in six cities in the USA were examined over a four month period (123 days). News influences were depictions of suicide that occurred on

- one or more major local newspapers
- local and national television news
- local screenings of movies and movies that ranked in the top 20 of the national rental market
- nationally televised shows and movies

The analysis controlled for local clustering and possible media effects other than news media.

For those aged under 25, in three cities there were significant increases in suicide deaths associated with news reporting for both local television news ($\chi^2 = 7.58$, $p < 0.05$) and local newspapers ($\chi^2 = 12.63$, $p < 0.05$). There was no significant association with national television reporting. For those aged 25 to 44 there were no significant increases associated with news reporting and television news reporting was associated with a significant drop in suicides in three of the six cities. For those aged 44 and over there was a significant increase in suicide deaths associated with local newspaper reporting only ($\chi^2 = 6.98$, $p < 0.05$)

The authors concluded that their results confirm the effect of media induced suicide contagion and point to the importance of local television news as well as newspapers as a source.

Supporting evidence

Type IV

Ecological study

Romer D, Jamieson PE, Jamieson KH. Are news reports of suicide contagious? A stringent test in six US cities. *Journal of Communications* 2006; 56; 253-70.

There seems to be overlap in the age groups that were used in this study.

The authors argue that the news reports influenced suicide rates; however findings were obtained from an ecological analysis and were derived from aggregate data. Therefore, in principle, a causal link between individual behaviour and media influence cannot be established. It is not possible to determine whether individuals who engaged in suicidal behaviour following the news reporting had actually been exposed to it. The possible influence of other factors on the findings cannot be ruled out.

This study aimed to investigate whether the risk of increased suicide occurrence after reports on suicide is associated with the **social characteristics of the reported suicides** and whether this varies with similarity between the reported suicides and suicides in the population.

All media reports in the most widely read Austrian newspapers that contained the words 'self murder' or 'suicide' were collected. These papers together regularly reached 74.2% of the Austrian population. Complete information on the variables of interest were available for 176 of 179 suicides named in Austrian newspapers during the study period.

Logistic regression was used to analyse associations between suicide reports and increases of post report suicides in the population. The dependent variable was the difference between the number of suicides in the 28 days after the first suicide report and the 28 days before expressed as a binary variable 'increase' versus 'no increase'. The week directly before the suicide report in the pre-report period was excluded to minimise the possibility that possible imitative effects due to earlier reporting in other media (for example radio reports) would be counted in the pre-period.

There was a significant association between similar suicides (omnibus test: $\chi^2 = 45.71$, $df = 31$, $p = 0.04$). Celebrity status of the reported suicide, definitive labelling as a suicide and middle age (30-64 years) of the reported suicide predicted a post report increase in suicides. Criminality of the reported suicide was associated with a decreased likelihood of a post report increase of similar suicides.

There was evidence of copycat effects for total suicides (omnibus test: $\chi^2 = 60.46$, $df = 31$, $p = 0.01$) Celebrity status of the reported suicide was the only predictor of post report increases in total suicides.

There was no evidence of copycat effects in dissimilar suicides (omnibus test: $\chi^2 = 28.63$, $df = 31$, $p = 0.59$)

The authors of the study concluded that their findings supported the hypothesis that social variables of reported suicides have an impact on the risk of post report copycat behaviour. Evidence of copycat effects seems strongest in suicides that were similar to the respective model with regard to age group, sex and suicide method.

Supporting evidence

Type IV

Ecological study

Niederkrotenthaler T et al.
Copycat effects after media reports on suicide: A population-based ecologic study. *Soc Sci Med* 2009; 69: 1085-90.

Findings were obtained from an ecological analysis and were derived from aggregate data. Therefore, in principle, a causal link between individual behaviour and media influence cannot be established. It is not possible to determine whether individuals who engaged in suicidal behaviour following the news reporting had actually been exposed to it. The possible influence of other factors on the findings cannot be ruled out.

The authors noted the following limitations. The strategy of identifying suicides as 'celebrities' may have resulted in defining some individuals as celebrities even though they were not known to major parts of the public. The study was an ecological design and factors other than media reporting may have caused the post item increases in suicides.

This study aimed to examine the **relationship between newspapers articles about suicide, internet use** and the incidence of suicide in Japan.

After controlling for autocorrelation, the number of newspaper articles about suicide was a predictor of suicide among both males ($\beta = 0.0001$, $p < 0.001$) and females ($\beta = 0.0001$, $p < 0.001$). The β values for the prevalence of internet use associated with suicide were positive and significant for males ($\beta = 0.0016$, $p < 0.05$) but not for females. The authors noted that the extent of exposure to internet news was not determined and their results regarding internet use should be treated cautiously.

The study authors concluded that because this is the first, preliminary study examining the association between internet use and suicide, further research is required to verify the present findings.

Impact of fictional media

A narrative review of studies (ecological and individual level) on portrayal of suicide in fictional media identified 34 examining the **impact of portrayal in film, television, music and plays** on actual suicidal behaviour. Searches were from database inception until February 2000. Studies were from the US, UK and Germany.

The review asked the question 'Is there any association, and if so, can it be considered causal?' Using strict criteria to establish causality the authors concluded that in the case of fictional presentations of suicide in film and television the evidence for a causal association is moderate at best. The association between being a heavy metal or country and western fan and suicide is yet to be shown to be causal. Currently there is no evidence suggesting a relationship between portrayal of suicide in plays and suicidal behaviour. There is scope for further research in this area.

Supporting evidence

Type IV

Ecological time series

Hagihara A, Tarumi K, Abe T. Media suicide reports, internet use and the occurrence of suicides between 1987 and 2005 in Japan. *BMC Public Health* 2007; 7: 321.

Cultural differences in attitudes towards and risk factors for suicide between Japan and the UK mean these findings may not generalise to a UK setting.

Supporting evidence

Type V evidence

Literature review

Pirkis J, Blood RW. Suicide and the media Part II: Portrayal in fictional media. *Crisis* 2001; 22:155-62.

Authors limitations; Many studies were retrospective and used aggregated weekly or monthly (rather than daily) data. Most studies did not investigate whether the person who had died had seen the stimulus material.

News reporting of the deaths of celebrities from suicide

This study aimed to document the **effects of media coverage following the suicide of a well known and popular television reporter** in Quebec, Canada (Gaëtan Girouard).

There were 98 articles in the printed media in the two weeks following the reporter's death. These were in 10 daily newspapers, four from Montreal, four from the rest of Quebec and two from Ontario. The authors concluded that in most cases guidelines for the responsible reporting of suicide were not applied.

Suicide rates for the general population and for men aged 20 to 49 years were compared each month for the year before and the year of the reporters' death. Using standardised rates comparison tests the rates in the year of the reporters' death were significantly higher with the exception of the June rate for the general population. The male age group was analysed separately because the authors believed that this group were the most likely to identify with Girouard.

An unusual number of suicides were noted in the municipality where Girouard had died. Using the scan statistic for detecting clustering in time a significant result at $p < 0.01$ was found. It was also noted that in the two months following the death, 5 further suicides using the same method occurred. The method was described as being highly unusual.

An analysis of coroner's reports in the 3 weeks following the death found 10% indicating that Girouard's death might have had an influence. For example some had left letters or wills mentioning the death and others were reported by relatives to have been distressed by the death. In all cases the deceased were associated with other risk factors for suicide.

Supporting evidence

Type IV evidence
Ecological study

Tousignant M et al. The impact of media coverage of the suicide of a well-known Quebec reporter: the case of Gaëtan Girouard. *Soc Sci Med* 2005; 60: 1919-26.

A higher rate of suicides was observed throughout the year of interest. The authors argue that this cannot be entirely attributed to the media coverage of the death of Gaëtan Girouard but do not seem to have looked for other explanations.

This study used an ecological design and therefore a causal link between media reports and individual behaviour cannot be established.

This study estimated the **risk for suicide after the suicide deaths of entertainment celebrities** in Asia during the first four weeks after the celebrity death and on a weekly basis.

The combined relative risk of suicide were 1.43 (95% CI 1.23 to 1.66) in the first week, 1.29 (95% CI 1.12 to 1.50) in the second week and 1.25 (95% CI 1.08 to 1.45) in the third week after suicides of entertainment celebrities, while adjusting for secular trends, seasonality, economic situation and temporal autocorrelation. The same gender and same method specific increases suggest that as people identify more with the celebrity, their risk for suicide increases. A medium term rise in suicides up to 24 weeks after the incidents of celebrity suicides is also evident.

The study authors concluded that these results provide important information for public health policy makers in assessing the elevated risk associated with excessive media coverage of celebrity suicide and developing timely, evidence based interventions.

A population based survey in Hong Kong was used to examine **whether celebrity suicide is associated with suicidal ideation** over a longer period. The study looked at the impact of the suicide of a Hong Kong celebrity that was extensively reported in the media, 6 to 12 months after his death. There were 2016 respondents aged between 20 and 59 years

After controlling for some known suicide risk factors, celebrity suicide was shown to be independently associated with suicidal ideation. People who indicated to have been affected by the suicide were 5.93 times (95% CI 2.56 to 13.72, $p=0$) more likely to have a high level of suicidal ideation (Adult Suicidal Ideation Questionnaire score ≥ 31) than people who had not been affected.

Respondents having greater anxiety symptoms, less reason for living and more focus on irrational values were also found to have had their suicide ideation affected by a celebrity suicide.

The logistic regression analysis however, showed that only 4% of variance was explained by celebrity suicide compared with 27% of variance being explained by other known risk factors.

Supporting evidence

Type IV evidence

Ecological retrospective time-series analysis

Fu KW, Yip PSF. Estimating the risk for suicide following the suicide deaths of 3 Asian entertainment celebrities: a meta-analytic approach. *J Clin Psychiatry* 2009; 70: 869-77.

The study authors noted the following limitations. Findings were obtained from an ecological analysis and were derived from aggregate data. Therefore, in principle, a causal link between individual behaviour and media influence cannot be established.

Suicide rates in Asian countries are much higher than the UK and there may be cultural and other differences in the risk factors for suicide therefore these findings may not generalise to the UK

Type IV evidence

Cross sectional study

Fu KW, Yip PSF. Long term impact of celebrity suicide on suicidal ideation: results from a population based study. *J Epidemiol Community Health* 2007; 61: 5540-6.

Unclear whether the sample is representative of the general population and whether the reported response rate of 62% is 62% of all participants approached, or 62% of the subject pool contact rate of 87%. May not generalise to the UK population.

The authors noted that the cross sectional design of the study only indicates statistical association rather than causation. Self reported data are subject to error and recall bias and sensitive information such as suicidal ideation and suicide history may have been under reported.

This study, which took place in Taiwan, used a structured interview to assess the possible **influences of media reporting of a celebrity suicide on subsequent suicidal behaviours** and associated risk factors **among psychiatric outpatients with depression**.

Among 438 patients with depression exposed to the media reporting, 38.8% reported an influence on subsequent suicidal behaviours including 24 (5.5%) with a suicide attempt. The risk of such influence was highest among patients in a severe depressive state just prior to the media report (adjusted odds ratio 7.81, 95% CI 3.28-18.59). Such influence on subsequent suicide attempt was highest in patients with a most recent suicide attempt within one month prior to the media reports (adjusted hazard ratio 11.91, 95% CI 3.76 – 37.72)

The authors of this study concluded that the study provided convincing evidence suggesting negative influences on media reporting of a celebrity suicide on subsequent suicidal behaviours among depressive patients. The recommended that particular attention in terms of potential negative media influences should be paid to patients who are younger and currently depressed and have made a recent suicide attempt.

Supporting evidence

Type IV evidence

Cross sectional study

Cheng ATA et al. The influence of media reporting of a celebrity suicide on suicidal behavior in patients with a history of depressive disorder. *J Affect Disord* 2007; 103: 69-75.

The study authors noted the following limitations. The study relied on self reports of suicidal behaviours and there was no external verification that these occurred, nor was there any systematic validation of the information about timing of suicidal behaviour prior to the media reports. The possible influence of other factors on the findings cannot be ruled out, although the respondents' specific comments on the death of the celebrity make this less likely. Depressed patients may be more likely to remember suicidal thoughts and behaviours the more recently they have occurred, so that post reporting incidents are more likely to be reported than pre-reporting incidents. The findings of this study cannot be extrapolated to other types of patients or to the community in general.

The majority of the study population were women (n = 306, 69.9%)

To investigate the impact on suicides of the media reporting of the **suicide of a male television celebrity** a Poisson time series autoregression analysis was conducted to examine whether there was an increase in suicides in the 4 week period after extensive media reporting of the suicide. The study took place in Taiwan.

After controlling for seasonal variation, calendar year, temperature, humidity and unemployment rate, there was a marked increase in the number of suicides (relative risk 1.17, 95% CI 1.04 to 1.31). The increase was in men (relative risk 1.30, 95% CI 1.14 to 1.50) and for individuals using the same highly lethal method (hanging) as the TV actor did (relative risk 1.51, 95% CI 1.25 to 1.83), however the age groups in which the increase occurred were younger than the age of the celebrity.

The study authors concluded that the extensive media reporting of the celebrity suicide was followed by an increase in suicides with a strong implication of a modelling effect. The results provide further support for the need for more restrained reporting of suicides as part of suicide prevention strategies to decrease the imitation effect.

Supporting evidence

Type IV evidence

Population based study

Cheng ATA et al. The Influence of media reporting of the suicide of a celebrity on suicide rates: a population based study. *International J Epidemiol* 2007; 36: 1229-34.

The study authors noted that a major limitation in this study and other similar studies is that there is no investigation of whether individuals who engaged in suicidal behaviour following the media event had actually been exposed to the media reporting of it. The possible influence of other unknown factors on the increase in suicides after the onset of the media reporting cannot be ruled out.

Risk factors for suicide, suicide rates and attitudes to suicide in Taiwan differ from those in the UK and the findings of this study are unlikely to generalise

A Poisson time series autoregression analysis was conducted to see if there was a significant increase in suicide attempts in the 3 week period after the start of **extensive media reporting of a celebrity suicide**. In addition a structured interview was conducted with 124 suicide attempters who had been exposed to media reporting. The study took place in Taiwan.

After controlling for seasonal variation, calendar year, temperature and humidity, there was a marked increase in the number of suicide attempts (adjusted relative risk 1.55, 95% CI 1.26 to 1.91). Among the 124 suicide attempters exposed to the media reports 23.4% reported an influence on them. There was no relationship between the attempters ages and the age of the celebrity or the method, but male attempters had a significantly higher risk for such influence. A considerably higher risk for such influence was found among subjects with a history of suicide attempt(s) in the previous year (odds ratio 52.3, 95% CI 5.96 to 459.1).

The authors of the study concluded that the extensive media reporting of the suicide of a celebrity was followed by an increase in suicide attempts. The effect was particularly marked in individuals with a recent history of suicide attempt. The results provide further support for the need for more restrained reporting of suicides as part of suicide prevention strategies and for special vigilance for contagious effects of such reporting on people who have carried out recent suicidal acts.

Supporting evidence

Type IV evidence
Cross sectional and
ecological study

Cheng ATA et al. The influence of media coverage of a celebrity suicide on subsequent suicide attempts. *J Clin Psychiatry* 2007; 68: 862-6.

The study authors noted the following limitations. The response rate of direct interview among all identified suicide attempters (65.9%), although comparable to other studies, was not very satisfactory. However there was no major difference of age, gender and history of previous suicide attempts between those who were interviewed, those who refused and those who could not be contacted. Although major confounding factors (season, calendar year, temperature and humidity) were controlled for in the analysis, the possible influence of other unknown factors on the increase in suicide attempts after the onset of media reporting cannot be ruled out.

Risk factors for suicide, suicide rates and attitudes to suicide in Taiwan differ from those in the UK and the findings of this study may not generalise.

Initiatives to improve media reporting of suicides

In Switzerland the introduction of **media guidelines** on reporting of suicide resulting in an improvement in the quality of reporting although the number of articles on suicide increased.

Comparison of numbers of articles with a suicide related headline on the front page (20% before, 4 % after $p < 0.001$) sensational headlines (before 62%, after 25%, $p < 0.001$) and reports with pictures (43% before, 8% after, $p < 0.001$) all showed statistically significant changes.

Media guidelines on reporting suicide were introduced in Austria in 1987. This study was undertaken to assess their impact. Outcome measures were the overall annual suicide numbers and the numbers of Viennese subway suicides that were reported in the mass media. Quantitative and qualitative changes in media reporting after introduction of the guidelines were also considered.

There was a significant reduction in the annual rate of suicides following the introduction of the media guidelines. This corresponded to a permanent annual decrease of 81 suicides ($t = -2.32$, $df = 54$, 95% CI -149 to -13, $p < 0.024$). This effect was largely due to a reduction in suicides in the region of Austria with the highest coverage rates of the newspapers that complied with the reporting guidelines.

Some newspapers also agreed not to report suicides that occurred on the Viennese subway system. Viennese subway suicides showed a highly significant level shift ($t = -4.44$, $df = 19$, 95% CI -15.13 to -5.44, $p < 0.001$) and a highly significant trend change ($t = -4.20$, $df = 19$, 95% CI -0.94 to -0.31, $p < 0.001$).

An analysis of newspaper reports comparing reporting in the five years before the introduction of the guidelines with the five years after apparently showed a reduction in the use of the words 'suicide' and 'self murder' in headlines although this has not been quantified. Newspaper reports were also assessed as being 'compliant' or 'non compliant' with guidelines. But again the results of this analysis have not been reported in the text.

Supporting evidence

Type III evidence Before and after study

Michel K et al. An exercise in improving suicide reporting in print media. *Crisis* 2000; 21: 71-9.

The limitations of the study design means that it is not possible to know if the changes in media reporting would have occurred without the introduction of the media guidelines.

Type IV evidence Interrupted time series analysis

Niederkrötenhaler T, Sonneck G. Assessing the impact of media guidelines for reporting suicides in Austria: interrupted time series analysis. *Aust N Z J Psychiatry*. 2007; 41: 419-28.

Although implementation of the media guidelines was associated with a reduction in the suicide rate and the study authors argue that the methods used demonstrate this relationship is causal this conclusion should be treated with caution. Other variables, for example the authors note increasing numbers of prescriptions for antidepressants, may have had an impact on suicide rates.

This study evaluated changes in Australian news media reporting of suicide between 2000/01 and 2006/07 against **recommendations** in the resource *Reporting suicide and mental illness*¹⁰.

After these were introduced in 2002 there was a significant improvement in the quality rating for the type of language used in reporting. In 2000/01 41.7% of rated items had examples of inappropriate language whereas in 2006/07 only 6.1% did ($\chi^2 = 126.45$, $df = 1$, $p = 0.000$).

In 2000/01 13.5% of rated items included a photograph, diagram or footage related to the suicide. By 2006/07 this figure had dropped to 4.1% ($\chi^2 = 8.72$, $df = 1$, $p = 0.003$).

In 2000/01 49.6% of reports rated contained detail of the method used by 2006/07 this had dropped to 14% ($\chi^2 = 73.44$, $df = 1$, $p = 0.000$).

In 2000/01 47.4% of items rated portrayed suicide as 'merely a social phenomenon' rather than being related to a mental disorder. In 2006/07 this figure was 23.6% ($\chi^2 = 30.30$, $df = 1$, $p = 0.000$).

In 2000/01 only a minority of items (6.5%) provided information on help services, this had risen to 17.7% in 2006/07 ($\chi^2 = 22.67$, $df = 1$, $p = 0.000$).

A total quality score was calculated for 415 items from 2000/01 and 388 from 2006/07, the median score had improved significantly from 57.1% to 75.0% across the life of the project ($\chi^2 = 189.88$, $df = 1$, $P < 0.000$).

The study authors concluded that there was a considerable increase in reporting of suicide over the study period. 4, 813 items were retrieved in 2000/01 and 8,363 in 2006/07. The nature of media reporting showed some variability with an increased emphasis on items about individuals experiences and a reduced emphasis on policy and programme initiatives. There was a significant improvement on almost all individual dimensions of quality and overall quality. The findings are positive and although there are clearly still some opportunities for improving the way in which the media report and portray suicide.

Supporting evidence

Type IV evidence
Retrospective before
and after study

Pirkis J et al. Changes in media reporting of suicide in Australia between 2000/01 and 2006/07. *Crisis* 2009; 30: 25-33.

The researchers noted the following limitations. The choice of media was restricted to newspapers, television and radio and did not include newer media such as the internet. Retrieval of items relied on an external media retrieval service and some items may have been missed. Television and radio items were only provided as broadcast summaries, whereas press clippings were provided in full. Every effort was made to ensure consistency between coders but because of the number of items only 3 were used for 2000/01 but 13 were needed for 2006/07. Quality ratings were made on only a restricted sample of media items, although a stratified random sampling method was used. There may have been some overestimates of poor quality on some of the dimensions because coders did not have information on how the reports had been produced and this may have made making judgements difficult. For example coders could not determine whether or not bereaved relatives had been interviewed and if their privacy had been respected.

¹⁰ Commonwealth of Australia. *Reporting suicide and mental illness: A resource for media professionals*. 2002. Canberra: Commonwealth of Australia. Available at: http://mindframe-media.powersites.com.au/client_images/826718.pdf [Accessed 17th May 2010]

This study examined whether there was any change in reporting style in Hong Kong newspapers before and after the launch of the **WHO media guidelines**¹¹ for reporting suicide and an awareness programme.

Content analysis was conducted to study reporting styles in five major Hong Kong Chinese language newspapers. A total of 5,740 articles were retrieved reporting either attempted or completed suicide. Eight coders were recruited. A pilot study showed that a kappa coefficient of each measurement item exceeded 0.9 ($M = 0.94$) indicating good inter-rater reliability.

Reporting of completed suicide showed a significant decrease in the proportion of stories on front pages (before 6.9%, after 2.9% $\chi^2 p < 0.000$) and a significant decrease in stories accompanied by a graphical presentation (before 9.4%, after 3.7% $\chi^2 p < 0.000$). There was a small increase in the number of stories accompanied by photograph (before 86.7%, after 90.1% $\chi^2 p < 0.02$). There were no significant changes in any other reporting styles, including headline style.

The authors concluded that certain reporting styles were changed in accordance with the recommendations.

NB. Only two of five reporting styles assessed showed a significant change in accordance with the WHO recommendations.

Supporting evidence

Type IV
Retrospective before
and after study

Fu KW, Yip PSF. Changes in reporting suicide news after the promotion of the WHO media recommendations. *Suicide Life Threat Behav* 2008; 38: 631-5.

The researchers noted the following limitations. Journalists and editors may have learned about these recommendations from sources other than the media campaign. We cannot rule out other possible reasons that may have contributed to the changes in reporting style.

This study took place in Hong Kong and findings may not generalise to the UK

¹¹ World Health Organisation. *Preventing suicide. A resource for media professionals*. Geneva: WHO; 2000. Available at: http://www.who.int/mental_health/media/en/426.pdf [Accessed 6th May 2010]

Appendix

Risk factors associated with completed suicide

Studies suggest that the following factors confer a risk of suicide greater than that in the general population. Further details, for example confidence intervals, are contained within the relevant papers.

Factor	Estimated increased risk	References
Male gender ¹	X 3	1. Data for Wales for 1996-2006, source ONS, 2008
Current or ex psychiatric patients ²	X 10	2. Appleby L. Suicide in psychiatric patients: risk and prevention. <i>Br J Psychiatry</i> 1992; 161:749-58.
4 weeks following discharge from psychiatric hospital ³	X100-200	3. Goldacre M, Seagrott V, Hawton K. Suicide after discharge from psychiatric in-patient care. <i>Lancet</i> 1993; 342: 283-6.
Prisoners (male and female) ^{4,5,6} Being a male rather than a female prisoner ^{7,8} Being married ^{7,8} Accommodated in a single cell ^{7,8} Life sentence ^{7,8} Suicidal ideation ^{7,8} Current psychiatric diagnosis ^{7,8} Psychotropic medication ^{7,8} Alcohol misuse ^{7,8}	X 5-10 X 2 X 1.5 X 9 X 4 X 15 X 6 X 4 X 3	4. Charlton J et al. Suicide deaths in England and Wales. <i>Popul Trends</i> 1992; 69: 10-16. 5. Dooley E. Prison suicides in England and Wales, 1972-87. <i>Br J Psychiatry</i> 1990; 156:40-5. 6. Dyer O. Suicide among women prisoners at a record high. <i>BMJ</i> 2003; 327:1227. 7. Fazel S, Benning R, Danesh J, Suicides in male prisoners in England and Wales, 1978-2003. <i>The Lancet</i> 2005; 366: 1301-2. 8. Fazel S et al. Suicide in prisoners: A systematic review of risk factors. <i>J Clin Psychiatry</i> 2008; 69:1721-29.
Self-harm ^{9,10} In first year following self harm ¹¹ Aged over 60 with a more than one episode of self harm requiring hospital treatment ¹²	X 30 X 66 X 49	9. Cooper J et al. Suicide after deliberate self harm. <i>Am J Psychiatry</i> 2005;162: 297-303. 10. Gibbs SJ, Beautrais AL, Fergusson DM. Mortality and further suicidal behaviour after an index suicide attempt: A 10-year study. <i>Aust N Z J Psychiatry</i> 2005 39: 95-100. 11. Hawton K, Zahl D, Weatherall R. Suicide following deliberate self harm: long-term follow-up of patients who presented to a general hospital. <i>Br J Psychiatry</i> 2003;182:537-42. 12. Hawton K, Harriss L. Deliberate self harm in people aged over 60 years. <i>Int J Geriatric Psychiatry</i> 2006; 21: 572-81.
Those aged over 60 who have experienced bereavement in the last year ¹³ who have life problems associated with accommodation (for example impending move into residential care) ¹³	X 3.5 X 5	13. Harwood DM et al. Life problems and physical illness as risk factors for suicide in older people: a descriptive and case-control study. <i>Psychol Med</i> 2006; 36: 1265-74.

Factor	Estimated increased risk	References
Socioeconomic deprivation ¹⁴	Not known	14. Gunnell DJ et al. Relation between parasuicide, suicide, psychiatric admissions and socioeconomic deprivation. <i>BMJ</i> 1995; 311:226-30.
Substance misuse Drug misuse ¹⁵ Heroin ¹⁶ Alcohol ¹⁵ Prescription drugs ¹⁵ Prescription drugs and alcohol ¹⁵ Prescription and illicit drugs ¹⁵	X 20 X 14 X 6 X 20 X 16 X 44	15. Harris EC, Barraclough B. Suicide as an outcome of mental disorders. <i>Br J Psychiatry</i> 1997; 170: 205-28. 16. Darke S, Ross J. Suicide among heroin users: Rates, risk factors & methods. <i>Addiction</i> 2002; 97: 1383-94.
Schizophrenia ¹⁷ Previous depressive disorder Previous suicide attempts Drug misuse Agitation or motor restlessness Fear of mental disintegration Poor adherence to treatment Recent loss	X 3 X 4 X 3 X 2.5 X 12 X 4 X 4	17. Hawton K et al. Schizophrenia and suicide: systematic review of risk factors. <i>Br J Psychiatry</i> 2005; 187: 9-20.
Bipolar disorder ¹⁵	X 15	
Dysthymia ¹⁵	X 15	
Anorexia nervosa ¹⁵	X 23	
Anxiety disorders ¹⁵	X 6 -10	
Personality disorder ^{15, 18}	X 7	18. Schneider B et al. How do personality disorders modify suicide risk? <i>J Pers Disord</i> 2008; 22: 233-45.
Physical illness ¹⁹ Cancer Neurological disorders Renal disease Chronic pain	X1.5 – 4 Not known Not known Not known	19. Stenager EN, Stenager E. Physical illness and suicidal behaviour. In: K Hawton, K van Heeringen eds. <i>The international handbook of suicide and attempted suicide</i> . Chichester: Wiley; 2002.
For men being divorced or separated ²⁰	X 2	20. Kposowa AJ. Marital status and suicide in the National Longitudinal Mortality Study. <i>J Epidemiol Community Health</i> 2000; 54: 254-61.
Unemployment ²¹	X 2 -3	21 Blakely TA, Collings SCD, Atkinson J. Unemployment and suicide. Evidence for a causal association? <i>J Epidemiol Community Health</i> 2003; 57:594-600.
Family history of suicide ²²	Not known	22. Roy A et al. The genetics of suicidal behaviour. In: K Hawton, K van Heeringen eds. <i>The international handbook of suicide and attempted suicide</i> . Chichester: Wiley; 2002.