Prevention of suicide: aspirations and evidence

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The *Health of the Nation* white paper set a target for 15% reduction in overall suicide rates by the year 2000. If the targets are to be achieved interventions must be identified which are of proved effectiveness. This paper examines the evidence on the available interventions and points of access to the population at risk. No single intervention has been shown in a well conducted randomised controlled trial to reduce suicide. The greatest potential seems to arise from limiting the availability of methods. In particular it is likely that the introduction of the catalytic convertor will lead to reduced lethality of car exhausts and reductions in suicide using this method. General practitioner education programmes, the effectiveness of lithium and maintenance antidepressants, and limits on the quantity of medicines available over the counter or on prescription should all be evaluated. Particular high risk groups include people recently discharged from psychiatric hospitals and those with a history of parasuicide. Many social processes affect suicide rates and these rather than specific interventions may help or hinder the ability to realise the *Health of the Nation* targets. Well conducted trials are essential to distinguish complex social processes from the effects of specific interventions for suicide prevention. This review of the available evidence offers little support for the aspiration that the posited targets can be achieved on the basis of current knowledge and current policy.

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Suicide is a rare event, but because it occurs among young people it is the third most important contributor to life years lost, after coronary heart disease and cancer. For this reason suicide reduction is included as a key target area in the *Health of the Nation* strategy.[1,2] Suicide reduction appears as the only quantified target in the area of psychiatric illness, where the overall purpose is to "reduce ill health and death caused by mental illness." Reversal of the rising trends in suicide and attempted suicide in Europe is one of the World Health Organisation's targets for Europe as part of its Health for All strategy. Worldwide trends in the epidemiology of suicide and parasuicide have recently been reviewed.[3] This priority attention to one of the rarest, though more important, outcomes of psychiatric illness could be seen as an acknowledgement of Durkheim's seminal interpretation of suicide as a sentinel event that reflects wider aspects of mental and social well being.[4]

Targets help highlight areas of strategy, identify explicit purposes, and provide benchmarks for monitoring progress in the selected areas.[5] They therefore identify aspirations, but they must be based on evidence to avoid possibly erroneous service activity that could be better deployed in other ways. The targets have therefore stimulated some debate over the ability to affect suicide rates and the appropriate setting for interventions.[6-9] We consider the available evidence concerning the effectiveness of measures designed to prevent suicide, and we relate that evidence to the potential exposure of the at risk population to each intervention in order to reconstruct the possible impact of current programmes. This paper reviews the evidence concerning interventions, suggests some priorities for intervention, and emphasises the essential requirements that such interventions must be introduced with competent evaluation if we are to be any better informed in the future about this critical area.

TABLE I—*Groups at recognised increased risk of suicide*

Group	Setting of research showing increased risk	Estimated magnitude of increased risk	% of total suicides in England and Wales	Reference numbers
Current or former psychiatric patients (inpatient or outpatients)	United Kingdom; United States	× 10	50	13-16
Current or recent (6-12 months) contact with psychiatric services	United Kingdom		25	14, 17
Patients in four weeks after discharge from psychiatric hospitals	United Kingdom	Men × 200 Women × 100	10-15	18
History of parasuicide	United Kingdom	× 10-30	30-47	14, 19-21
Alcoholics	United Kingdom; United States; Sweden	× 20	15-25	14, 22, 23
Drug misusers	United Kingdom	× 20		24
Family history of suicide	United Kingdom		4	14
Serious physical illness or handicap (epilepsy, Huntington's, cancer, tinnitus)	United Kingdom; United States		4-32	19, 25-28
HIV or AIDS	United Kingdom; United States	HIV: denominator unknown AIDS; × 36	1-2	29, 30
Prisoners	United Kingdom	× 5	< 1	11, 31
Occupational groupings with 10 highest standardised mortality ratios	United Kingdom	× 2	1	11
Doctors	United Kingdom	× 2	< 0·1	11
Farmers	United Kingdom	× 2	< 1	11
Unemployed	United Kingdom	× 2	6	11, 32
Young women (15-34) from Indian subcontinent	United Kingdom	× 2·7	< 0·1	33, 34
Samaritan clients	United Kingdom	× 20	4-7	17, 19

Epidemiology of suicide in England and Wales

Table I lists some of the recognised groups at increased risk of suicide (these groups are not mutually exclusive). Where possible, figures from research based in Britain have been used and figures for increased risk derived from population based studies. Demographic factors are also important; suicide risk is increased in men and in people who are separated, single, or divorced.[10,11] Of particular recent interest has been the dramatic increase in the rate of suicide in young men.[12] The overall rate of suicide remains highest in men aged 75 and over, although in terms of absolute numbers more deaths occur in the younger age groups. From the table it is apparent that many suicides do not belong to any defined high risk group. Psychiatric patients are treated as a whole, rather than by particular diagnostic group. Suicide risk in psychiatric patients and aspects of care that may influence this risk have recently been reviewed.[13]

Methods of literature review

A search of the medical literature with Medline and PSYCINFO databases was used to identify all English language papers or abstracts listed under the heading suicide prevention and control and published since 1975. Searches using the British Library's BLAISE-line database were also undertaken with the heading suicide prevention. The main psychiatric journals held in local medical school and psychiatric unit libraires were systematically hand searched for recent articles on this

subject. References cited in these articles whose title suggested a trial or initiative undertaken with the intention of preventing suicide were also obtained.

Suicide prevention: evidence from the literature

Two forms of evidence exist concerning the potential for reducing the incidence of suicide: research evidence based on the evaluation of specific interventions on suicide rates and accounts of the influence of potentially modifiable factors on suicide rates, in which the particular interventions have not been formally evaluated. The specific interventions that have been evaluated in terms of their effect on suicide rates are shown in table II. Only two of these have been evaluated in randomised controlled trials and the methodology used to assess these interventions described contains potential biases.[35 36]

PRIMARY CARE SETTINGS

The effectiveness of educating general practitioners in the diagnosis and treatment of depression was assessed on the Swedish island of Gotland (population 56 000). Two educational programmes of two days, attended by most of the island's general practitioners, took place.[37 38 57-59] Suicide rates and other measures of psychiatric morbidity were reduced in the year after this intervention. Two years after the programme, suicide rates rose again. The short term reduction may have been the result of random fluctuation of suicide levels in a small population. Suicide rates on the Swedish mainland and rates on the island before the intervention were used for comparison. The authors are currently examining the characteristics of those committing suicide on the island between 1981-92 and their contacts with health services; these analyses will give additional evidence of the programme's effect (W Rutz, personnal communication). The island's geographic and cultural differences from the United Kingdom make transposition of the findings unreliable. Evidence in Britain suggests that only half of patients with major depression are recognised by general practitioners.[60 61]

There is some evidence that tricyclic antidepressants are sometimes prescribed for inappropriate indications.[62] These patients, and indeed all those prescribed antidepressants, are paradoxically given a powerful potential means to commit suicide. Recent overviews have found that cognitive therapy is effective in some patients with depression, and such non-pharmacological interventions should always be considered.[63] Other drugs (for example, combinations of dextropropoxyphene and paracetamol) account for sizable proportions of overdose. More careful prescribing of smaller quantities of these drugs may be beneficial.

TABLE II—*Interventions aimed at reducing suicide, evaluated in terms of suicide reduction achieved*

Intervention	Study design
Educational programmes for general practitioners on the diagnosis and treatment of depression[37 38]	Non-randomised controlled study using historical and geographically distant controls
Drug treatment and electroconvulsive therapy[39-42]	Non-randomised comparison of cohorts of patients taking and not taking lithium as maintenance for affective disorder
	Retrospective note reviews of psychiatric deaths
Samaritans and suicide prevention centres[43-46]	Geographic comparisons of suicide rates in towns and cities with and without these resources
Increased support to identified high risk group of callers to suicide prevention centre[35]	Randomised controlled trial with 18 months' follow up
Group treatment of depressed and suicidal people[35a]	Non-randomised controlled trial of six treatment modalities
Postdischarge contacts with former psychiatric inpatients who default from follow up[35]	Randomised controlled trial with 4 years' follow up
Media restrictions on reporting of suicide[47]	Historical comparison of changes in suicide rates
Legislative restrictions of the availability of drugs (barbiturates)[48]	Historical comparisons of changes in suicide rates
Screening of prisoners for suicide risk; suicide prevention programme in prisons[31 49 50]	Non-randomised intervention assessed by telephone survey
	Historical comparison of changes in suicides rates
School based suicide prevention programme[51-55]	Controlled trials of suicide prevention programme
	Geographic comparison of suicide rates in areas with and without specific intervention programmes
	Historical comparison of changes in suicide rates
Safety measures on high buildings[56]	Historical comparison of changes in method and site specific rates

SECONDARY CARE SETTINGS

Screening of patients to identify those at greatest risk of suicide, treatment of suicidal patients, and multidisciplinary audit of suicides are important in secondary care settings.

Screening tools to predict those at increased risk of suicide have been advocated by some, but such tools have not been found useful in unselected groups of young men[64 65] and high risk groups.[66 67] One review suggested that screening and crisis intervention introduced in the prison service in New York state may have been successful: fewer suicides occurred the year after the programme was introduced, but controls were not used and long term effects have not be published.[49] The introduction of screening and management plans for those at increased risk of suicide in prisons in England and Wales in 1987 did not lead to a reduction in suicides.[31] Biochemical screening has been advocated as an alternative or complementary strategy to identify high risk groups. Low concentrations of 5-hydroxytryptamine and 5-hydroxyindoleacetic acid have been found to be related to suicidal and aggressive behaviour,[68-71] but no evidence currently exists as to their usefulness as adjuncts to other screening tools.

Another high risk group coming into medical contact are those who deliberately harm themselves. Of successful suicides, 30-47% have a history of previous deliberate self harm.[14 19 21] In the year after parasuicide 1% of individuals suceed in killing themselves; 3-10% may do so eventually.[14 19 20 72 73] Attempts to reduce repetition of deliberate self harm and eventual suicide have been largely unsuccessful,[74-78] although four small randomised controlled trials suggest that in some subgroups of patients episodes of repetition may be preventable.[79-82] All the trials were too small to examine the effect of these treatments on suicide rates, and long term impact was not examined.

Treatment with lithium is known to be effective in preventing episodes of recurrent mood disorder.[83 84] Long term lithium has also been found to reduce the risk of suicide among those attending lithium clinics compared with matched patients with similar diagnoses not attending such clinics.[39 40] Such compliant patients may differ from those who do not take the drug. Clinic attendance per se may be beneficial, rather than an effect of the prescribed medicine. One recent placebo controlled trial of prophylactic antidepressant therapy in the year after successful treatment of depression showed a significant increase in suicide attempts and a non-significant rise in suicide in those receiving maintenance treatment.[85] Paradoxical emergence of suicidal behavior and ideation in patients taking antidepressants has recently been reviewed.[86] The risk of such occurrences was felt to be small, but clinicians were reminded to be aware of this risk and warn patients to seek help should this occur.

Reviews of case notes of psychiatric patients who committed suicide in Denmark and the United States failed to find any convincing evidence of the effectiveness of lithium, antidepressants, or electroconvulsive therapy in reducing long term suicide risk.[41 42] One American study has examined the benefits of specific group therapy targeted at the suicidal and depressed.[35a] In this non-randomised trial 720 people allocated to six different treatments were followed up for 30 months. Although suicide rate in the "experimental group" was lower, this may have been as a result of the non-random nature of the trial. Lester, in a recent review of the prevention of suicide, conceded that "the effectiveness of individual psychiatric and psycho-

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therapeutic treatment remains unproven for suicide prevention."[87] Adequately controlled, randomised prospective studies are required to examine the impact of these treatments on suicide.

Research in Hungary, which has the world's highest suicide rate, suggests an inverse relation between regional suicide rates and rates of inpatient and outpatient treatment for depression. Methodological problems may account for the observed differences: factors associated with high rates of suicide may also be associated with reduced access to specialist treatment; the reported rates of incident depression are low; and there may be regional differences in methods of collecting and the completeness of the data.[88]

The medical management of those with psychiatric illness has been carefully examined. A quarter of those committing suicide are under current or recent psychiatric care, and 40% of suicides make contact with their general practitioner in the month before death.[89-91] In an audit of suicide deaths among psychiatric patients in Bristol, in three quarters of cases the seriousness of risk had not been fully recognised.[92] Local multidisciplinary audit is recommended in the key area handbook for mental illness,[2] and Krieger has described some of the common errors in the treatment of suicidal patients.[93] The medical management of patients following overdose is also important. A national confidential inquiry into suicide and homicide by psychiatric patients is currently being developed by the Department of Health, and it is hoped that such initiatives will highlight consistent areas of poor practice and lead to improvements.

PUBLIC HEALTH MEASURES

The difficulty in defining suitable control populations and the possibility that the changes that lead to the introduction of interventions may themselves be responsible for some of the observed effects that are difficult to overcome. Many have attempted to evaluate the effect of the Samaritans, suicide prevention centres, and school based programmes.[43 44-46 51 53 94 95] On balance the evidence suggests that these interventions make little impact on suicide rates, although some interventions may have deleterious effects[51 96] and others may be beneficial to small subsets (young white women) of the population at risk.[45] Lester compared the suicide rate in youth for each state in the United States. Although significant increases in youth suicide rates were found in those states in which a greater proportion of adolescents were involved in specific school programmes, rates were lower in states that had developed multifaceted suicide prevention programmes. Such studies, using multiple sources of information on activities undertaken in a non-randomised manner, contain potential biases.[51] They are, however, sometimes the best means available to examine the impact of a population based intervention for such a rare outcome.

One randomised controlled trial of increased support to identified subgroups of high risk callers to a suicide prevention centre in Los Angeles failed to show any reduction in suicide, but only 400 individuals were included in the trial.[35] Another randomised controlled trial examined the effect of making regular contacts with groups of high risk former psychiatric patients who did not adhere to follow up programmes. Full follow up of all subjects was not achieved, and methods of randomisation were not fully described. Analysis on an intention to treat basis found no significant differences between those randomised to regular contact (12 suicides after four years, 3% of those in the contact group) and those in the no contact group (20 suicides after four years, 4% of those in this group).[36] In Australia, legislative restrictions on the availability of barbiturates were associated with a short term reduction in method specific and all cause suicide rates,[48] although again the absence of control groups means that this can be regarded as suggestive evidence only.

Interventions in settings such as schools and prisons have in some instances been followed by reduced suicide. These reductions may have been influenced by other factors, and previously high rates of suicide preceding these interventions may have been clusters or chance occurrences.[55 97 98] Smialek and Spitz reported that use of video surveillance cameras in the jails of one county in the United States has prevented at least 12 suicides.[99] Interventions aimed at reducing access to particular methods may lead to reductions in method specific or site specific rates but not to overall reduction in suicide rates.[56]

Restrictions on media reporting of suicides occurring on the Viennese underground system led to a reduction in the number who used this method to commit suicide, although the effects on all cause suicide rates would be impossible to determine given the small numbers using this method.[47] There is other evidence, however, that depiction of suicide in the media may lead to increases in method specific and all cause suicide rates.[100] Some guidelines on the reporting of suicide in the media currently exist in the United Kingdom.[101] The role of fictional portrayal and news reporting of suicide has been much debated.[4 100 102-107]

In the US, after several well publicised clusters of suicide, the Centers for Disease Control developed a series of recommendations for a community plan for the prevention and containment of such clusters.[108] The effectiveness of these interventions on population suicide rates would be difficult to assess. Lester suggested that public education campaigns could highlight the less glamorous side of suicide (such as liver failure after paracetamol overdose and severe injury due to failed suicide using firearms). He drew parallels to public education campaigns on the risks of smoking.[87]

There is some evidence that the availability of particular methods of suicide influences both the method specific and all cause suicide rates.[48 109-115] This evidence has been summarised by Clarke and Lester.[116] It has been estimated, for example, that 6700 lives were saved with the detoxification of domestic gas in the 1960s.[117] Contrary to this, the substitution hypothesis argues that, although the restriction of the availability of one method of suicide reduces method specific rates, compensatory increases occur in suicides with other methods.[118] It is not possible to disentangle the two hypotheses, and prospective randomised controlled trials are neither possible nor ethical. If restriction of

the availability of methods were effective the following measures may be beneficial: improved prescribing, limiting the dose of antidepressant in a single tablet and use of selective serotonin reuptake inhibitors[63 119-124]; controls on over the counter medicines—for example, limiting the quantity of paracetamol available at a single purchase[125 126]; addition of methionine to paracetamol to limit its toxicity in overdose; safety measures on underground railway systems[127 128]; safety measures at suicide "hotspots" such as Beachy Head and the Golden Gate Bridge[56 87 129-132]; redesign of commonly used appliances—for example, car exhaust outlets, plastic bags; and stricter licensing and restricted availability of firearms.[110 112 113] Such restrictions exploit the ambivalence felt by many would be suicides; if sufficient time is gained by making a method less accessible, the suicidal impulse may subside.

TABLE III—*Effects of and exposure to possible suicide prevention strategies*

Setting and intervention	Exposure to intervention	Estimated reduction in total suicides (%)	Quality of evidence*
	Primary health care		
GP education and guidelines on the treatment of depression	25% of all suicides consult in week before, 40% in month before suicide. (GP sees patient in week before suicide once every 8 years.) GPs fail to recognise 50% of cases of severe depression.	Uncertain†	II/III
Improved prescribing; selective serotonin reuptake inhibitors	9 million antidepressant prescriptions per year	4‡	III
	Secondary health care		
Screening questionnaires	Whole population, potentially	0	II
Increased care around time of discharge	10-15% suicides	2-3‡	III
Multidisciplinary audit (GP and psychiatric)	Those presenting to psychiatrist and GPs before suicide	Uncertain¶	III
Improved access (contact telephone numbers, regular review, etc)	Prevalence of suicidal ideation 1-3% of population per year[138]	Uncertain	III
Provision of alcohol and drug services	28% men and 11% women drink above recommended levels; 15-25% of those committing suicide have a history of alcoholism	Uncertain	III
Attempts to maintain contact with those defaulting from follow up	Former psychiatric patients	Uncertain	III/IV
	Public health measures		
Health promotion:			
Encourage exercise	Whole population	Uncertain	III/IV
Sensible drinking	Whole population	Uncertain	III/IV
Stress management	Whole population	Uncertain	III/IV
Suicide hotspots:			
Improved safety measures	All those who are actively suicidal (5% of suicides are by jumping; 70% of these jump from manmade structures)	1-2‡	III
Design of underground transport		< 1	III
The media:			
Reinforcement of reporting guidelines	Whole population	1‡	III
Reinforcement of guidelines on fictional portrayal of suicide and parasuicide	Whole population		
Government and industry:			
Strategies to reduce unemployment	6% of working population unemployed (1991)	1-2‡	III
Alcohol taxation	Whole population	Uncertain	III
Drug availability and packaging legislation	Actively suicidal people (1-3% of population/year)[138]	2‡	III
Car exhaust design and catalytic converters	Actively suicidal people (1-3% of population/year)[138]	7§	III
Plastic bag design	Actively suicidal people (1-3% of population/year)[138]	< 1‡	III
Firearm availability	Actively suicidal people with access to guns (3% of suicides)	1‡	III
Professional bodies and voluntary agencies:			
Counselling and Support (Samaritans, Cruse, National Farmers Union, CAB, Relate, prison support groups, etc)	High risk professional groups(1%) and actively suicidal people	1‖	IV
Increased outreach support to identified high risk callers	High risk callers to Samaritans	0	III/IV
School based programme	Children of school age	0	III/IV

†Gotland studies suggest that a 20-48% reduction may be achieved; these figures are for the year following the education program and were obtained for an island population cared for under Swedish health care system. Not comparable to British setting; findings inconclusive.
‡Estimate based on information available on proportion of suicides in a high risk group or proportion using a particular method, assuming alternative methods not used by 25-30.
§Car exhaust gases used in 22% of suicides; if one third of these individuals did not use another method, 7% reduction would result. This will occur with the transition to catalytic convertors.[137]
‖Estimate based on findings of age and sex specific reduction in suicide in areas covered by suicide prevention centres in United States.
¶Bristol Confidential Inquiry[92] found seriousness of suicide risk not fully appreciated in 75% of suicides by inpatients and recent inpatients.

*Quality of evidence (US Preventive Task Force classification):

I Evidence obtained from at least one properly designed randomised controlled trial
II-1 Evidence obtained from well designed controlled trials without randomisation
II-2 Evidence obtained from well designed cohort or case-control analytic studies, preferably from more than one centre or research group
II-3 Evidence obtained from multiple time series with or without intervention. Dramatic resuls from uncontrolled experiments (such as the results of the introduction of penicillin in the 1940s) could be regarded as this type of evidence
III Opinions of respected authorities, based on clinical experience; descriptive studies; reports of expert committees
IV Evidence inadequate owing to problems of methodology (sample size; length or comprehensives of follow up; conflicts of evidence)

Points of access to suicidal people

Information in this section includes that on those who deliberately self harm. Although this group has different characteristics, it provides some insight into the patterns of behaviour of completed suicides.[133] Recent research suggests that 20-25% of those committing suicide have contact with a health care professional (most usually the general practitioner) in the week before death, and 40% have such contact in the month before death.[89-91] Twenty years ago two thirds of suicide victims made contact in the month before suicide.[19 37] Such changes may reflect methodological differences within the studies, differences in the setting of the study, or the facts that suicide in young men has increased greatly in the 20 years since the first studies and that young men on the whole make less use of primary care services. The average general practitioner will experience the suicide of a patient every four or five years and have contact with such a patient shortly before suicide only every eight or 10 years.

About half of those committing suicide have at some time had contact with psychiatric services, yet only a quarter have had current or recent contact.[14 19 89] Goldacre has recently shown the greatly increased risk of suicide in psychiatric patients shortly after discharge from in patient care.[18] Predictive risk factors in this population need to be described and reasons for this increased risk explored. Clearer discharge plans and dealing with unresolved social problems before discharge may be beneficial.

Contacts with other agencies before suicide have not been documented in such detail. Four to seven per cent of suicides have had past, although not necessarily recent, contact with the Samaritans.[17 19] In a study in Oxford of those who had deliberately self harmed, 75% had heard of the Samaritans but only 4% contacted them in the week before their action. Social workers were contacted by 10% and clergy by 13% in the week before parasuicide.[134] Similar findings have been reported elsewhere.[135]

Schoolteachers are in regular contact with a population whose suicide risk has increased in recent years, and training programs targeted at teachers have been evaluated in Holland.[136] Psychological autopsy studies suggest that 30-55% of suicides intimate their planned actions to others.[14 19] There is a popular misconception that those who talk about suicide do not complete the act. A study of those who deliberately self harm found that over 50% have an available close confidant but this did not prevent their action.[134]

The composite picture

Table III summarises the possible strategies and the potential reduction in suicide should these be adopted. It gives estimates for the range of possible reductions achievable by pursuing particular measures, but it is important to emphasise the limits to the evidence in relation to such interventions. Some of the estimated reductions in suicides are based on the assumption (unproved) that 25-30% of those who fail to commit

TABLE IV—*Estimated sample sizes (80% power, two sided 5% significance level) required for the evaluation of interventions targeted at particular population groups. Studies are unmatched, with equal numbers in intervention and control groups (EPISTAT package used)*

Population studied	Proportion committing suicide	% Reduction in suicide	Total sample size required
General population, England and Wales	0·01% Per year	15	12 909 670
Patients after parasuicide[20]	2·8%	15	44 914
	In subsequent eight years	50	3 292
Patients after discharge from psychiatric hospitals[18]	0·9%	15	142 258
	In subsequent year	50	10 396

suicide with one method will not revert to other methods. Table III also assumes that the current proportions of individuals using a particular method will remain static. As numbers using particular methods change due to changes in the availability of, for example, toxic car exhaust fumes,[137] other methods may gain in popularity after a time. In effect we are firing at a moving target, and methods commonly used for suicide need to be regularly reviewed and interventions evaluated.[11] The quality of the available evidence has been classified formally in the table but interpreted in an optimistic light. The costs of each of these interventions, none of which is of proved efficacy, must be considered against investment in interventions in other areas where effectiveness is known.

Inevitably, many of those who commit suicide are suffering from longstanding mental or physical distress and for them life has become unbearable. For others suicide occurs as a result of a crisis either as a result of relationship breakdown or financial difficulties in the context of a vulnerable personality type. Suicide offers an escape from an intolerable, although probably transient, period of emotional turmoil. If appropriate help and protection can be offered during this period suicide may be prevented.

TARGET GROUPS

There is no single, readily identifiable, high risk population that constitues a sizeable proportion of overall suicides and yet represents a small, easily targeted group. Those recently discharged from psychiatric care, those with a past history of parasuicide, and young men are the most readily defined groups. The prevention paradox, whereby there is disadvantage to the many from interventions that can benefit only the few, is important in a condition as common as ischaemic heart disease.[139] The concern must be all the greater where the outcome to be prevented is as rare as suicide. It is likely that environmental changes, in particular the introduction of legislation on car exhaust gas, will have the greatest chance of producing reductions (this method currently accounts for a fifth of all suicides).

The target of 15% reduction in suicides is not based on the assumption that effective interventions exist but are underused, for no such evidence exists. It is clear from this analysis that only a combination of measures can be expected to achieve the targeted 15% reduction in suicide rate. The clearest problem area is young men; a specific target for this age group might have sharpened the focus on them. Currently this is the group with whom the health service has least contact and least information to explain the rise in suicide among their number.

It is essential to acknowledge that within a literature that contains numerous assertions and projections, no specific medical intervention has been shown to affect suicide rates. Thus it is essential that possible strategies are fully evaluated. Difficulties with such evaluations abound, particularly stemming from the multicausal nature of suicide,[140] the difficulty of avoiding contamination, and the rarity of the outcome. Thus large sample sizes are required to prospectively evaluate interventions in particular settings (see table IV).

INTERVENTIONS AND OUTCOMES

Among the interventions most amenable to adequate evaluation are strategies to reduce suicide among those recently discharged from psychiatric care, the effectiveness of general practitioners' postgraduate education, the effectiveness of limiting quantities of over the counter medicines and prescription quantities of particularly toxic drugs, and the effectiveness of long term prophylaxis with lithium or antidepressants. The following pragmatic suggestions for research and practice seem most amenable to the British context: strategies for reducing suicide in those recently discharged from psychiatric care; educating general practitioners on recognition and treatment of depression and highlighting the drugs most often taken in fatal overdoses; guidelines on the appropriate management and treatment of depression; schemes to limit the size of individual prescriptions and dose per tablet of high risk drugs; limitation of quantity and packaging of paracetamol and aspirin; reinforcement of media guidelines on the reporting and showing of fictionalised suicide; audit of suicide and parasuicide; and modification of car exhaust design.

Controlled clinical trials must be used where possible, although the sample sizes required to demonstrate the effectiveness of population based interventions, targeted at such a rare event, are very large.[141] Other forms of properly conducted evaluation may be appropriate where experimental methods are not possible. Whatever the effectiveness of the interventions, it seems that access to the suicidal population has declined as the age and sex structure of the suicidal population has changed in recent years with the increases in suicides in young men.[10 12] Here Durkheim's interpretation, a century ago, that social processes concerning levels of integration and social values are responsible for trends in such individual and isolated acts, informs a different set of research and policy approaches. To understand the problems of rising suicide in youth, research must address the experience of the young men in Britain, and treatment must address aspects of economic and social policy at a national level.

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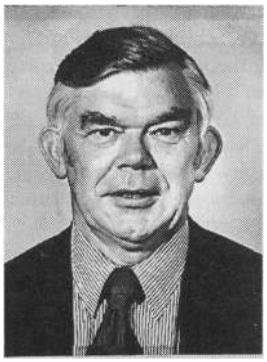
OBITUARY



J B Gibson

J B GIBSON

OBE, MD, FRCPED, FRCPATH, FRCPA

When he arrived in Hong Kong James Gibson found a dearth of pathology staff, poor recruitment, no well defined training programmes for pathologists or medical laboratory scientific officers, and poor career opportunities. He made it his top priority to remedy these deficiencies and in doing so overcame many serious difficulties and raised the standard of pathology services in the territory considerably. In 1963, when he went to Hong Kong, there were only seven professional members of staff in the laboratories at Queen Mary Hospital, the main teaching centre. During James's 20 years in the territory he developed departments or divisions in each of the five major pathology specialities. He also held high posts in the university; advised the government medical and health service on pathology; served on numerous hospital, university, government, and other committees; and contributed to the work of the World Health Organisation.

James maintained his interest in liver disease and applied it to those conditions of particular importance in the Far East, especially primary liver cancers, using both clinical material and experimental models and training his juniors in research methods. He proved to be a natural leader, and a combination of thoughtfulness, determination, and honesty and a warm friendly personality fitted him superbly for his important role in Hong Kong.

The Gibsons enjoyed 10 years of retirement in Boat of Garten in Scotland, where they contributed greatly to the local community and took pleasure in hill walking. James died of carcinoma of the pancreas. He is survived by his wife, Christian, and their son, Henry.—JOHN ANDERSON, FAITH HO

James Blackburn Gibson, who was professor of pathology at Hong Kong University 1963-83, died 24 December. Born 1 March 1921; educated Fettes College and Edinburgh University (MB, ChB 1943) and Western Reserve Medical School, Cleveland, Ohio (MD 1943). Served in Royal Naval Volunteer Reserve 1944-6. Registrar, senior registrar, and lecturer in pathology at Western Infirmary and University of Glasgow 1946-54. Lecturer and consultant pathologist in Northern Ireland and at Queen's University, Belfast, 1954-63. Visiting professor of pathology, Western Reserve University, Ohio, 1960-1. Examiner to several universities and royal colleges. Dean of Medicine, Hong Kong University, 1972-8; pro-vice chancellor 1967-8 and 1980-1. President of Hong Kong branch of BMA 1965-6. Became honorary fellow of Hong Kong College of Pathologists 1991 and founder fellow of Hong Kong Academy of medicine 1993; awarded honorary DSc by University of Hong Kong 1983.

A B BOYLE

MB, BCH, BAO, LM

After graduating Brendan Boyle joined his brother in law in his practice in Coleraine. His brother in law died two years later, and Brendan carried on the practice single handedly for several years, though he was later joined by two nephews. In later years he conducted the venereal diseases clinic at Coleraine Hospital, and he was a long serving member of the Northern Ireland Health and Social Services Board.

Brendan's most endearing quality, which appealed to all who knew him, was his mischievous sense of humour. Whether in his surgery, in the hospital, or on the golf course, he was great company. A community minded man, he had been president of the Rotary Club, president of his college union, and active in all the town's cultural and social organisations and had taken part in all parish affairs. During his retirement he wrote an autobiographical account of his days as a student and junior doctor, which is to be published. He was a keen sportsman and brought to each of his pastimes the enthusiasm and dedication that marked all his activities. His first wife, Mona, died in 1979, and some years later he married Maura. His death was sudden: he had a massive coronary literally on his doorstep. He is survived by Maura; his daughters,