

# Deliberate self harm assessment by accident and emergency staff—an intervention study

M J Crawford, G Turnbull, S Wessely

## Abstract

**Objective**—To examine the impact of specific training for accident and emergency (A&E) staff on the quality of psychosocial assessment of deliberate self harm patients.

**Methods**—A non-randomised intervention study that compared the psychosocial assessment of deliberate self harm patients before and after a one hour teaching session for the A&E departments nursing and junior medical staff. Adequacy of psychosocial assessment was judged by examining A&E case notes. The records of the hospital's parasuicide team were examined to assess administrative changes. Staff attitude to and knowledge of deliberate self harm were also measured before and after the intervention.

**Results**—45 of 52 nurses and all 15 junior medical staff attended the teaching session. Sixteen (13%) of 125 sets of records before and 58 (46%) of 127 sets of records after the intervention were judged to be adequate. In the postintervention period, notes were more likely to be judged adequate when a proforma was used as part of the assessment (52 of 66 with a proforma and six of 61 without a proforma,  $\chi^2 = 60$ ,  $p < 0.01$ ). Following the intervention, communication between A&E staff and the hospitals parasuicide team improved.

**Conclusions**—An intervention that provides teaching to A&E staff can lead to improvements in the quality of psychosocial assessment of patients with deliberate self harm.

(J Accid Emerg Med 1998;15:18-22)

Keywords: deliberate self harm; psychosocial assessment; training; accident and emergency department

Patients presenting to accident and emergency (A&E) departments following acts of deliberate self harm (DSH) represent the highest risk group for subsequent suicide. Approximately 1% of DSH patients will die by suicide over the following 12 months, a rate of suicide 100 times greater than that of the general population.<sup>1</sup> It has been argued that by identifying those DSH patients at greatest risk of future suicide the suicide rate could be reduced.<sup>2</sup> Over the last 15 years important changes have taken place in the hospital management of DSH patients. Following research that showed that junior doctors in accident and emergency (A&E) and other hospital departments were able to conduct psy-

chosocial assessments,<sup>3</sup> a Department of Health circular<sup>4</sup> stated that the previous policy of automatic referral to psychiatric services following DSH was no longer justified. Since then, however, concern has been expressed about deficiencies in these assessments.<sup>5</sup> The authors of this study suggested that this might be the result of insufficient training of A&E doctors or of unfavourable attitudes to patients. While policy recommendations have always stressed the importance of training,<sup>2</sup> a study by Morris and colleagues reported that many senior house officers in A&E departments feel generally unhappy with the level of training that they currently receive.<sup>6</sup> The attitude of many doctors and nurses to DSH patients has repeatedly been shown to be unfavourable.<sup>7-9</sup>

This study was designed to evaluate the impact of specific training on the quality of psychosocial assessment of patients following DSH. The effects of training on knowledge and attitude to DSH were also measured.

## Methods

The study was conducted at King's College Hospital, a teaching hospital serving a population of 250 000 residents in inner south London. As with other inner city A&E departments, the management of DSH patients represents a significant element in the workload of A&E staff, with approximately 900 patients a year being treated following DSH. Patients are assessed first by a triage nurse and then by the A&E doctor. In addition to appropriate medical treatment A&E staff are responsible for initial psychosocial assessment of patients. As part of this assessment doctors are encouraged to use a proforma that includes the SAD PERSONS scale (a 10 item checklist and acronym for demographic and psychosocial factors that are known to be risk factors for future suicide) (table 1).<sup>10</sup> This assessment is followed by a decision to refer the patient to a medical team for inpatient medical treatment, to refer them for further psychiatric assessment, or to discharge them from hospital. Referral for psychiatric assessment is made during weekdays 9 am to 5 pm, to the hospital's parasuicide team and, outside these hours, to an on call psychiatrist. The hospital's parasuicide team includes two full time liaison psychiatric nurses and input from four junior psychiatrists. Whatever course of management is decided on, staff are asked to complete an information sheet that is sent to the parasuicide team. The sheet covers basic information on the incident in order to assist liaison with general practitioners and psychiatric and other

Section of  
Epidemiology and  
General Practice,  
Institute of Psychiatry,  
London SE5, UK  
M J Crawford

Department of  
Psychological  
Medicine, Kings  
College Hospital,  
London SE5, UK  
G Turnbull  
S Wessely

Correspondence to: Dr M J  
Crawford, Research Fellow,  
Section of Epidemiology and  
General Practice, Institute of  
Psychiatry, De Crespigny  
Park, Denmark Hill, London  
SE5 8AZ, UK.

Accepted for publication  
8 September 1997

Table 1 SAD PERSONS score (risk factors for future suicide following deliberate self harm)

S	Sex (male)
A	Age (below 19 or above 45 years of age)
D	Depression/hopelessness (patient describes depression, decreased concentration, appetite, sleep, or libido)
P	Previous deliberate self harm (having had one or more previous attempts)
E	Excessive alcohol/drug use
R	Loss of rational thinking (psychosis, organic brain syndrome, etc)
S	Separated, widowed, or divorced
O	Organised or serious attempt (that is, well thought out/left suicide note)
N	No social supports (that is, no close/reliable family friends or job)
S	Stated future intention to self harm (or ambivalent about repetition)

secondary services. Patients should also be given an information sheet that encourages them to contact the parasuicide team for outpatient follow up and describes alternative sources of help should a crisis reoccur. At the time of the study, A&E staff included 52 full time nurses, 15 junior medical staff, and two consultants. Nursing staff at the hospital had received between one and three hours of formal training on the assessment and management of patients following DSH. In addition to undergraduate teaching on this subject, all junior medical staff receive a one hour teaching session that concentrates on the acute medical management of self poisoning as part of an induction programme before starting work in the A&E department.

The study was conducted over a six month period, with 10 weeks of data collection before the intervention, followed by three weeks for the intervention and a further 11 weeks for collecting data after the intervention.

#### ADEQUACY OF PSYCHOSOCIAL ASSESSMENT OF PATIENTS

Over a six month period all patients presenting to A&E following DSH were identified using the department's computerised database. Information recorded in the A&E records of each patient was graded as being either complete, incomplete or absent on five separate items which are considered to be central to the psychosocial assessment of DSH<sup>11</sup> (details of the episode, social history, current psychiatric/social care, past psychiatric history, and mental state examination). Only those assessments that had complete information on all five items were judged to be adequate. A sample of notes were independently rated by SW and the results of agreement between these two sets of ratings are reported in the results. Records of patients who discharged themselves before the completion of assessment and those who were unconscious at the time of their presentation

Table 2 Completeness of A&E records before and after the intervention

Item	Number of case notes referring to the item	
	In the preintervention period (n = 125) (%)	In the postintervention period (n = 127) (%)
Details of the episode	123 (98)	127 (100)
Social history	88 (64)	115 (91)*
Current care (psychiatric/social)	58 (33)	100 (78)*
Past psychiatric history	69 (55)	103 (81)*
Mental state examination	48 (38)	104 (82)*
All four items	37 (30)	78 (61)*
Assessment included SADP	26 (20)	66 (52)*

SADP, SAD PERSONS score.

\*p<0.01.

were excluded. A note was made of those records in which a SAD PERSONS proforma had been completed.

The records of the parasuicide team were also examined in order to document the number of information sheets from A&E staff that were received during this period and to record the number of patients who subsequently contacted the team for follow up treatment.

#### THE INTERVENTION

Nurses and junior doctors were invited to attend a one hour teaching session which was incorporated into the existing teaching programme. In order to increase the number of staff who could attend additional teaching, sessions were organised to fit in with work patterns. The teaching was delivered by MJC and nurses from the parasuicide team and covered basic information on the epidemiology of DSH, assessment of patients and the identification of those at risk, the difficulties that are sometimes associated with making assessments and how they can be managed, aspects of initial management, and the service provided by the parasuicide team. Groups of nurses or doctors in each session were limited to 12 and included time for the discussion of issues raised by participants.

#### ASSESSMENT OF STAFF KNOWLEDGE AND ATTITUDES

All staff were asked to complete a questionnaire concerning their experience of working with DSH patients, and their knowledge of and attitudes to DSH. This questionnaire was specifically developed for the study and was piloted on psychiatric colleagues in order to establish its acceptability and ease of administration. Following modifications, the questionnaire was administered to A&E staff before the intervention and repeated one month after the intervention. Staff were asked to respond to a series of statements (listed in table 3) by circling a response which indicated the extent to which they agreed with the statements listed.

#### ANALYSIS

Data were analysed using the *Statistical package for social sciences* (SPSS). As each set of records included information noted by more than one member of staff it was not possible to assess changes in the recording practices of the individual members of staff. The  $\chi^2$  test was therefore used to calculate the statistical significance of changes in the adequacy of assessments and pattern of referral. Alterations in knowledge and attitudes to DSH during the course of the study were calculated by the changes in the proportion of staff agreeing with statements and tested for statistical significance using the z test for proportions.

#### Results

Forty five of 52 nurses (86.5%) and all 15 (100%) of the junior medical staff attended the teaching sessions. All staff completed the attitude and knowledge questionnaire before

Table 3 Knowledge of and attitudes to deliberate self harm of A&amp;E staff before and after the intervention

Statement	Number agreeing with the statement		Difference in proportions (95% CI)
	Preintervention period, n = 44 (%)	Postintervention period, n = 44 (%)	
Patients you see who are always taking overdoses are less likely to kill themselves than those who have only tried once	13 (29)	4 (9)*	20 (3.2 to 36.7)
The number of tablets that a patient takes during an overdose is a good indication of the "suicidal intent"	10 (23)	10 (23)	0
If someone who has deliberately harmed themselves had really wanted to kill themselves, this is what they would have done	16 (36)	16 (36)	0
I find it difficult to understand people who have deliberately harmed themselves	21 (48)	23 (52)	4 (-4.3 to 14.3)
I gain more satisfaction from treating patients who have myocardial infarcts than I do from treating those who have deliberately harmed themselves	22 (52)	17 (39)	13 (-1.3 to 27.3)
The reason why most people deliberately harm themselves is as a "cry for help"	36 (82)	34 (77)	5 (-4.3 to 14.3)
I feel I have the necessary skills to play my part in the assessment and treatment of deliberate self harm patients	21 (52)	33 (75)*	23 (5.1 to 40.9)
I would value more teaching on the assessment and psychosocial management of deliberate self harm	37 (84)	39 (88)	4 (-4.3 to 14.3)
Time spent managing patients following deliberate self harm could be better spent with those in greater need of help	4 (9)	4 (9)	0
If the treatment of patients following deliberate self harm has involved unpleasant procedures, such as gastric lavage, it might make patients feel less like harming themselves again	11 (25)	9 (20)	4 (-4.3 to 14.3)
It would be better in those who had deliberately harmed themselves were treated in a special unit, rather than in the accident and emergency department	38 (86)	39 (88)	2 (-4.1 to 8.0)
Some patients who take overdoses are misusing hospital service	22 (50)	17 (40)	10 (-2.8 to 22.8)

CI, confidence interval.

the intervention and 44 (65.7%) responded following the intervention. In the preintervention period, 177 DSH patients were assessed in A&E; 194 were assessed during the postintervention period.

#### COMPLETENESS OF RECORDS

##### *Inter-rater reliability of scoring for completeness*

A random sample of 15 sets of A&E records were rated by SW. Inter-rater reliability for whether each of the five items on the scale was present or absent was high (ranging from  $\kappa = 0.72$  to 1.0), but was lower for agreement on whether the information was complete or incomplete ( $\kappa = 0.59$  to 1.0). There was complete agreement between the two raters on which notes included complete information on all five items ( $\kappa = 1.0$ ).

##### *Completeness of A&E records*

In the preintervention period, 160 sets of records relating to 169 patient contacts were examined (95%). The remaining nine sets were unobtainable. Of the 169 sets of records, 13 were excluded because the patient was unconscious at the time of their presentation and 22 because they discharged themselves before completion of the assessment. We therefore examined 125 sets of records for level of completeness.

In the postintervention period, 185 sets of records of a possible 187 were examined (99%), 27 were excluded because the patient was unconscious, and 31 self discharged. We therefore examined 127 sets of notes for this period.

Table 2 lists the numbers of A&E records in which each of the five items was documented before and after the intervention. The proportion of notes judged to be adequate was lower: 16 (13%) of 125 sets of records before the intervention and 58 (46%) of 127 after the intervention ( $\chi^2 = 14$ ,  $p = 0.01$ ). This increase was not the result of a steady progression through each month of the study (the proportion of notes judged to be adequate was seven of 45 (16%) in February, four of 49 (8%)

in March, five of 31 (16%) in April, and after the intervention, 22 of 45 (49%) in May, 21 of 51 (41%) in June, and 15 of 31 (48%) in July). The proportion of records judged adequate was highest in those who were referred to the DSH team for outpatient follow up (16 of 22; 79%), lower in those referred to psychiatrists while in A&E (41 of 56; 73%), and lowest in those referred for inpatient medical treatment (14 of 35; 40%). The SAD PERSONS proforma was used more often in the postintervention period, and those records that included a proforma were more likely to be judged adequate: 52 of 66 (78%) *v* six of 61 (10%),  $\chi^2 = 60$ ,  $p < 0.01$ .

#### LIAISON WITH THE PARASUICIDE TEAM AND SERVICE UPTAKE

Examination of the records of the parasuicide team showed that there was an increase in the number of information sheets sent to the team, from 67 of 160 in the period before the intervention to 115 of 185 after ( $\chi^2 = 14$ ,  $p < 0.01$ ). There was no appreciable increase in the number of patients who made contact with the team for follow up treatment during this period: five (3%) contacted the team during the preintervention period and 10 (5%) during the post intervention period ( $\chi^2 = 1.1$ ,  $p = 0.3$ ).

#### ATTITUDES AND KNOWLEDGE PRE- AND POSTINTERVENTION

Information on this is given in table 3.

#### Discussion

These findings show an improvement in the quality of psychosocial assessment conducted by A&E staff during the course of the study. Because the person involved in assessing the notes for adequacy was aware which sets of notes and been completed following the intervention, observer bias could have contributed to these findings. However, the high degree of agreement in the rating of notes by a second

rater, who was blind to whether or not they followed the intervention, suggests this is unlikely to have led to the improvement that was observed. Another possible explanation for these findings is that improvements in performance might have resulted from the increasing experience of staff managing DSH patients. However, the timing of the observed change (the proportion of notes judged adequate was no higher in April than in February) does not suggest that the improvement was due to the effects of a learning curve. While it is possible that other factors that were not measured may have changed during this period and that these factors also contributed to the improvements described, the timing and the scale of the changes strongly suggests that the teaching intervention was central to their taking place.

In contrast to the findings of Black and Creed,<sup>5</sup> the adequacy of assessments was greatest in those patients who were discharged from A&E, with 79% of these assessments rated as adequate during the postintervention period. The lower levels of adequacy of assessments of patients who were admitted for inpatient medical treatment may indicate difficulties in assessment because of decreased levels of consciousness, not amounting to unconsciousness. Alternatively it could relate to the expectation of staff that patients would be more fully assessed at a later stage of their treatment. However, approximately 15% of DSH patients at this hospital take their own discharge after the input of A&E staff, so the assessment performed in A&E is sometimes the only one that is made.

One of the ways that the teaching may have led to an improvement in the quality of assessments is through encouraging the greater use of the SAD PERSONS proforma. Although its role as a tool for the prediction of risk of future suicide has been questioned,<sup>12</sup> it seems to have provided A&E doctors with an effective checklist and increased the likelihood of complete assessments being made. This finding is in keeping with improvements in the assessment of patients with acute surgical conditions by senior house officers in A&E following the introduction of structured data collection forms<sup>13</sup> and the use of a questionnaire by house physicians as part of their assessment of DSH patients on general medical wards.<sup>14 15</sup>

Improved liaison between A&E staff and the parasuicide team, shown by an increase in the proportion of incidents that led to an information sheet being used, may have been an additional benefit resulting from the intervention. The training intervention did not lead to an increase in the proportion of patients who contacted the team for follow up treatment. Although low levels of uptake of outpatient services are common in this group,<sup>16</sup> there is some evidence that providing patients with information on sources of help, as takes place in this department, may improve outcome.<sup>17</sup>

The responses of staff to attitude statements before the intervention did not reveal the nega-

tive attitudes which have been expressed in previous studies.<sup>7 8</sup> This could be the result of different methods used in these studies or it could reflect a real change that has taken place during the intervening period. The most notable difference following the intervention was the decrease in the numbers of staff who believed that "patients who had a past history of repeated DSH were less likely to kill themselves than those who had only tried once," a misconception that is important to correct. The substantial increase in numbers of staff who reported that they felt they had the necessary skills to play their part in the assessment and treatment of DSH patients is encouraging.

This study was based in a single hospital site and, while the numbers of staff involved and numbers of patient records examined was large, the extent to which these findings are applicable to other A&E departments has not been established. The results of testing knowledge and attitudes of staff with a questionnaire developed for this study also need to be treated with caution, as the psychometric properties of this instrument have not been tested.

Providing education, especially to senior house officers in the A&E department, remains the subject of much discussion.<sup>18</sup> One of the strengths of this study was that it shows the value of a limited teaching intervention that could be readily incorporated into future teaching programmes. While improving the quality of the assessment of DSH patients in A&E is of value, improved assessments do not necessarily lead to better management or improved outcome. An examination of the impact of the intervention on the services that were provided for those at greatest risk of suicide, and any effect the rate of repetition of self harm or of suicide, was beyond the scope of this study. Intervention studies designed to examine these possibilities are now required.

We thank Ms C Cox for her help in implementing the teaching sessions and Dr K Bizos and all other A&E staff for their cooperation and support during the course of this study. MJC was funded by a Maudsley/Bethlem NHS Trust training fellowship.

- Hawton K, Fagg J. Suicide, and other causes of death, following attempted suicide. *Br J Psychiatry* 1988;152:359-66.
- Royal College of Psychiatrists. Guidance on the management of deliberate self-harm. *Psychiatr Bull* 1994;7:210-12.
- Gardner R, Hanka R, Roberts SJ, Allon-Smith JM, Kings AA, Nicholson R. Psychological and social evaluation in cases of deliberate self poisoning seen in an accident department. *BMJ* 1982;284:491-3.
- Department of Health and Social Security. The management of deliberate self-harm. *HN(84)25*. London: DHSS, 1984.
- Black D, Creed F. Assessment of self-poisoning patients by psychiatrists and junior medical staff. *J R Soc Med* 1988;81:97-9.
- Morris F, Cope A, Hawes S. Training in accident and emergency: the views of senior house officers. *BMJ* 1990;300:166.
- Ramon S, Bancroft JHJ, Skrimshire AM. Attitudes towards self-poisoning among physicians and nurses in a general hospital. *Br J Psychiatry* 1975;127:257-64.
- Creed FH, Pfeffer JM. Attitudes of house-physicians towards self-poisoning patients. *Med Educ* 1981;15:340-5.
- Sidley G, Renton J. General nurses' attitudes to patients who self harm. *Nursing Standard* 1996;10:32-6.
- Patterson WM, Dohn HH, Bird J, Patterson GA. Evaluation of suicidal patients: the SAD PERSONS scale. *Psychosomatics* 1983;24:343-5.

- 11 Hawton K, Catalan J. *Attempted suicide: a practical guide to its nature and management*. Oxford: Oxford University Press, 1987.
- 12 Hockberger RS, Rothstein RJ. Assessment of suicide potential by non-psychiatrists using the SAD PERSONS score. *J Emerg Med* 1988;6:99-107.
- 13 de Dombal FT, Dallas V, McAdam WAF. Can computer aided teaching packages improve clinical care in patients with acute abdominal pain. *BMJ* 1991;302:1495-7.
- 14 Burn WK, Edwards JG, Machin D. Improving house physicians' assessments of self-poisoning. *Br J Psychiatry* 1990; 157:95-100.
- 15 Blacker CVR, Jenkins R, Silverstone T. Assessment of deliberate self-harm on medical wards. *Psychiatr Bull* 1992;16: 262-3.
- 16 O'Brien G, Houlton AR, Hurren K, Watt L, Hassanyeh F. Deliberate self-harm and predictors of outpatient attendance. *Br J Psychiatry* 1987;150:246-7.
- 17 Morgan HG, Jones EM, Owen JH. Secondary prevention of non-fatal deliberate self-harm. The green card study. *Br J Psychiatry* 1993;163:111-12.
- 18 Rodenberg H. Education in accident and emergency medicine for senior house officers: review and recommendations. *J Accid Emerg Med* 1996;13:238-42.

## EMERGENCY CASEBOOK

### Motorbike toe: a toddler's sporting injury

Children as young as two years of age are not infrequently given the opportunity to ride on specially designed and built miniature motorcycles. These have an engine capacity of 50 cc and a saddle height of 48 cm. The children often wear inadequate protective clothing, especially footwear, and are of necessity too young to understand the inherent dangers of riding motorised vehicles. They may very easily drag their feet along the ground, causing a sudden forced plantar flexion. In so doing they are susceptible to transverse fracture of the proximal phalanx of the great toe (fig 1). The clinical picture is,

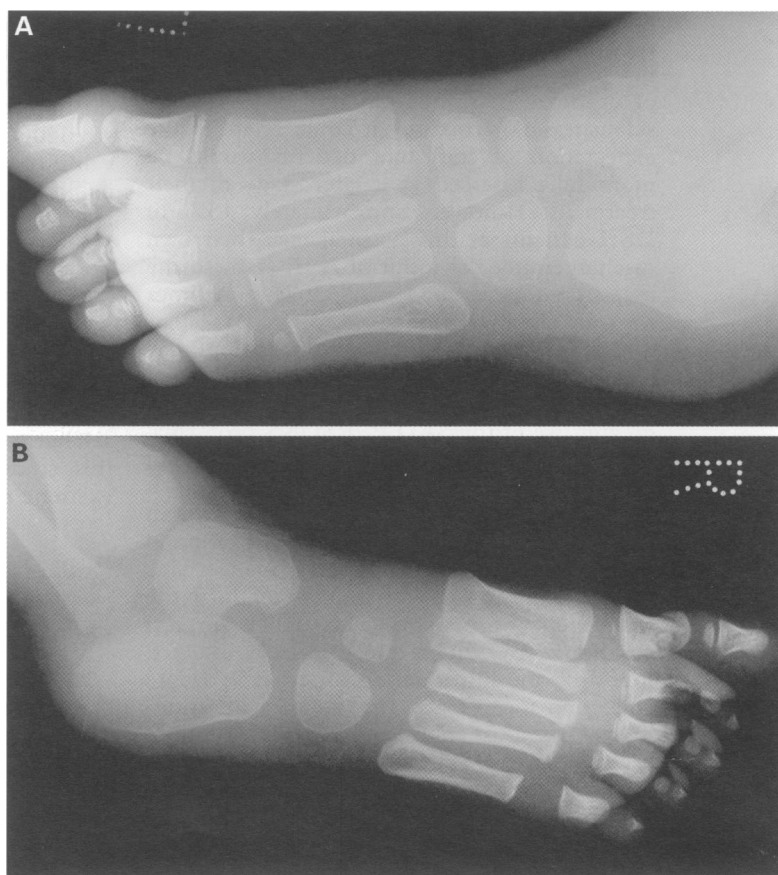


Figure 1 Transverse fracture of the proximal phalanx of the great toe.

as expected, a distressed child who refuses to weight bear. The affected foot is bruised and tender, with maximum tenderness over the great toe and first metatarsal. The fracture may or may not be displaced.

Conservative treatment with analgesia and application of a toe spica is adequate, and the long term outlook is expected to be very favourable.

S KANE, *Trafford General Hospital, Moorside Road, Davyhulme, Manchester M41 5SL.*