Study Protocol
Short title: Hospital Management of Self-harm in England (HoMaS 2)

Full title: Variations in Self-Harm service delivery: an observational study examining outcomes and temporal trends

Background

Every year in England there are around 4,500 suicides and hospitals manage over 140,000 episodes of self-harm ("attempted suicide"). Our previous studies have demonstrated wide variations in self-harm service delivery, but such variations have not been related to the outcomes of self-harm care in trusts with different approaches to management. Such outcomes research[1] is essential to guide service provision for self-harm, especially since randomised trials in this area tend to be underpowered, recruit highly selected samples, and be hampered by the poor engagement of participants with treatment.[2]

In 2004 two sets of clinical guidelines on the management of self-harm were published [3] [4]. In addition the Royal College of Psychiatrists has recently initiated the 'Better Services for People who Self-harm Project'[5] an audit-based quality improvement project involving surveys of service users' experiences, staff attitudes and training, and care pathways.

The two sets of guidelines and the Better Services Project might be expected to reduce the variability of services and improve the quality of care. In the current study we plan to investigate whether the variations in hospital management of self-harm have any impact on patient outcomes, specifically self-harm repetition. Comparison with the results of our previous study in 2001[6] will also enable us to investigate whether the service variability has decreased and service quality has improved in response to recent initiatives. In 2002 the Department of Health launched a National Suicide Prevention Strategy. Our proposed research aims to improve the evidence base to underpin the implementation and evaluation of the strategy. Findings from the study will lead to improved management of self-harm, and better evaluation of adherence to national guidelines.

We will compare the management (e.g. levels of assessment and admission) and outcome of self-harm in 32 hospitals to determine which aspects of care affect the risk of repeat self-harm. We will also assess whether improvements in services have followed recent guidance by comparing our findings on quality of service provision with the earlier 200-2 survey which took place in the same hospitals.

Research questions:
(i) Main research question:
Does the variability in service provision for self-harm have any impact on patient outcomes?
(ii) Additional research questions:
Has the variability in service provision decreased over recent years?
Has the quality of self-harm services improved over recent years?

Research Methods

The study will be carried out in a stratified random sample of 32 hospitals in England included in our earlier study.[6] We will approach medical directors/or local collaborators identified through the Research and Development approval procedure at each hospital Trust in order to identify the key mental health and emergency department staff involved in the provision of self-harm services. These personnel will be interviewed on the telephone or in person about current service structures and any routine letters / cards given to patients following self-harm. Their responses will then be rated on the measure of service quality developed as part of the previous study.[6] We will also rate services on measures of self-harm service quality developed as part of recent initiatives.[5].

With our local collaborators we will set up audits of self-harm in each hospital. As in the previous study, self-harm will be defined as 'a deliberate non-fatal act whether physical, drug over dosage or poisoning, done in the knowledge that it was potentially harmful and in the case of drug overdose or poisoning, done in the knowledge that it was potentially harmful and in the case of drug overdose that the amount taken was excessive'. [7]

Psychosocial assessments will be defined as in the previous study:
'an interview carried out by a member of mental health staff who has been trained in the process, is usually of about 30min duration, and covers the assessment of factors such as: the causes and degree of suicidal intent, current mental state and level of social support, psychiatric history, personal and social problems, future risk and need for follow-up'.

The audits will record every episode of self-harm in those aged 18 and over presenting to the study centres in a three month period. Service configurations for young people are likely to be markedly different from adult services and therefore those under 18 years old are excluded from this study. Individual level data will be collected using a simple one page audit form completed by emergency department or specialist mental health staff. The audit form will contain items relating to basic demographic, clinical data, details of the drugs taken in overdose and their recent contact with specialist mental health services (to inform other aspects of this programme). Details of in-hospital management will also be recorded, specifically whether the individual received a psychosocial assessment, whether they were admitted to a psychiatric or medical bed, whether they were referred for psychiatric follow up. At the end of each audit, to ensure complete case ascertainment has been achieved, a systematic search of the hospital's emergency department databases and registers will be carried out. Where individuals are identified as having been missed, audit forms will be completed by trust staff using the subject's emergency department, medical and mental health records. Similarly these sources will be used to obtain information where the audit forms have not been fully completed.

The index episode for each individual will be their first self-harm attendance during the study period. The main outcome will be hospital attendance with a repeat episode within six months. Repeat episodes will be identified through hospital databases by matching on name, date of birth, and NHS number if available. Patient identifiers will not be used on the audit forms. All data will be anonymised at source (at the participating hospital) before being sent to the research team. A named person within the trust will hold the key to enable subsequent patient attendances/episodes to be identified.

Sample size and analysis
The primary analysis will be hospital based. We will use meta-regression to assess the impact of key elements of service provision on repetition. A logistic regression analysis for repetition rate incorporating a random effect for hospital trust will be carried out. We will assess separately the effects of the following factors on repetition: proportion of individuals receiving a psychosocial assessment; proportion admitted to a medical bed; proportion admitted to a psychiatric bed; proportion referred for specialist mental health follow up.

In an individual based analysis we will examine the relationship between the key service factors and outcome using survival analyses (Cox Proportional Hazards regression). We will adjust as far as possible for differences in the case-mix of patients receiving different types of management. We will also take account of clustering by hospital.

Hospital level data: In order to measure the effect of hospital management on the proportion of patients repeating within six months, a sample size of 32 hospitals will enable us to detect correlations of 0.31 between continuous predictor variables and self-harm repetition (using Spearman's rank correlation coefficients and 2-sided significance levels of 5%). This will enable factors accounting for 9% or more of the variability in repetition rates between hospitals to be identified.

Individual level data: We estimate that approximately 4000 individuals will attend the study centres with a self-harm episode during the first three months of the study. If we consider the least common key service factor (admission to a psychiatric bed - occurring in 10% of index episodes), then this sample size will give us over 90% power to detect a clinically significant 5% difference in six -month repetition rates between those who are admitted and not admitted (7% vs. 12%).

Dissemination

We will disseminate the work through peer-reviewed publications and conference presentations. The Principal Investigators on this project are regularly asked to provide input to NICE Mental Health guidelines and other relevant policy documents and we will ensure our research findings are reflected in policy advice. We will also seek the views of users prior to dissemination, in particular whether the findings warrant specific dissemination strategies distinct from conventional academic dissemination.

References:

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3. 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. National Institute for Clinical Excellence, 2004.
4. Royal College of Psychiatrists Assessment following self-harm in adults. London: Royal College of Psychiatrists, 2004.
5. Royal College of Psychiatrists. Better services for people who self-harm project. London: Royal College of Psychiatrists, 2005.
6. Bennewith O, Gunnell D, Peters TJ, Hawton K, House A. Variations in the hospital management of self-harm in adults in England: an observational study. *BMJ* 2004;328:1108-1109.
7. Morgan HG, Pocock H, Pottle S. the urban distribution of non-fatal deliberate self-harm *Br J Psychiatry* 1975; 126; 319-328