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Abstract
This paper presents an audit of biographical data from 52 suspected suicides registered in Cumbria in 2008. The aim of the audit is to improve understanding of the contextual and personal factors associated with suicide. We found that causal pathways were complex and multifactorial. In order to identify idiosyncratic risk factors, individual suicide risk assessments should consider the interplay of these multiple factors.

Keywords
suicide; psychological autopsy; qualitative data; clinical audit

Introduction
Psychological autopsy involves structured interviewing of relatives of people who die through suicide and other key informants. The review of life histories of people who die through suicide has been given relatively little attention and few studies have utilised the qualitative information that can be collated from notes made by general practitioners and other health professionals, coroners, and other witnesses whose statements constitute coroners’ investigations (Valle et al., 2008).

The aim of this study was to improve understanding of the contextual and individual factors associated with completed suicide including proximal factors that may constitute ‘triggers’ for suicide.
Method

Selection of cases
All deaths registered between 01/01/2008 and 31/12/2008 where the cause of deaths was coded as 'intentional self harm' (ICD-10:X60-X84) and/or 'injury/poisoning of undetermined intent' (Y10-Y34, excluding Y33.9) and/or deaths that had a verdict of 'suicide', 'open', or a 'narrative' suggestive of suicide on the paper documents from the registrar; in other words, suicides and probable suicides. In total, 52 cases were included (16 women and 36 men).

Data collection
The study was an adapted psychological autopsy procedure, which involved quantitative and qualitative analysis of Office of National Statistics (ONS) data and medical and coroner records.

Analysis
An individual timeline and psychological formulation were made for each case, mapping out data that were deemed significant chronologically.

Results
The 52 cases examined had a mean age of 46 years (range 18-86), 36 (70%) were men. Sixty-eight percent of the men had seen their GP in the 12 months prior to their death, as had 88% of the women. Thirty-seven (70%) of the cases had received a diagnosis of mental ill-health.

Findings of in-depth analysis of clinical case notes and coroners' records
Using the medical and coroners' records, it was possible to create a timeline and to make an explanatory formulation for all cases to understand the possible risk and other factors influencing the suicidal act. Where present, suicide notes gave valuable insights into the deceased's state of mind at the time of death. This data clearly pointed to multiple risk factors, risk escalators and critical incidents at a number of points in a person's timeline rather than a simple 'cause and effect' model. This is illustrated in the biographic summaries presented below, which, in order to ensure the anonymity of the deceased, have been amalgamated and fictionalised.

Key themes
Certain life circumstances appeared to play a primary role in increasing individuals' vulnerability to suicide; these were labelled risk factors. Other factors appeared to increase risk through their effect on mood and optimism; these were labelled risk escalators. Further factors appeared to precipitate the suicidal act and were grouped as critical incidents. In addition to critical incidents, we observed a number of warning signs that may have predictive value in determining risk of acting on suicidal ideation.

Risk factors
Chronic pain and chronic illness
Thirty nine people had a history of chronic illness and/or chronic pain. Chronic medical conditions included diabetes, sexual dysfunction and tinnitus. Diabetes is not only a potential risk factor for suicide since diabetics are faced with the complications of a long-term condition but the treatment can also allow depressed people access to a means of suicide. In addition, other ramifications of diabetes, particularly sexual difficulties, may in turn have an effect upon long-term relationships. Tinnitus can lead to depression, anxiety, sleep disturbance and concentration difficulties, (Andersson, 2002). Each of these difficulties in turn potentially affects relationships and wellbeing. Chronic pain is the other major factor in this category. Chronic pain of course, can affect wellbeing and may affect relationships. Like diabetes, the condition often facilitates access to effective potent medication in someone experiencing suicidal ideation.

A man with type 2 diabetes and erectile impotence developed chronic pain following a sports accident. He had to give up this valued leisure activity and take early retirement because of the pain. After his wife died he became unable to look after himself and was admitted to a nursing home, where he was found dead following a suspected insulin overdose.

Abuse and post traumatic stress disorder
There was evidence of emotional abuse, sexual abuse and/or physical abuse in about one in three females and one in nine males in our study. This typically commenced in childhood and often continued into adulthood. Post traumatic stress disorder (PTSD) was also noted in several accounts after an assault or other traumatic situation.

A middle aged woman had been physically and sexually abused in childhood and had a history of depression and self harm. She had had several unsuccessful adult relationships. She misused alcohol and did not attend when offered treatment.

Documented mental health problems
Overall, 24 men and 13 women had a documented mental health problem. Depression was the most frequent diagnosis, followed by anxiety, post traumatic stress disorder and personality disorder.
Thirty-one of the deceased had a known alcohol problem, and eight a drug problem about two thirds of whom were male. In twenty-one cases (9 women and 12 men), both mental health problems and alcohol and/or drug related problems were noted; in only one case had psychosis been diagnosed.

**Risk escalators**

**Loss & bereavement**
Loss is often implicated in depression and suicide and we noted several instances of loss, which included the loss of status, but more usually the death of a loved one. Some idiosyncratic responses to losses were noted, including bereavement reactions after the death of a family pet and following iterative terminations of pregnancy. In addition, in this sample six of the deceased had experienced bereavement through suicide.

A man bereaved following his son’s death several years previously became troubled by guilt when his wife was admitted into care. He had become unable to care for her due to his own chronic health problems.

**Relationship breakdown**
Relationship breakdown was a risk escalator, as breakdown in the relationship was secondary to other factors, notably substance misuse and sexual difficulties. Loneliness and living alone also acted as risk escalators particularly for men. The risk appeared to increase after a decisive event, such as failed attempts at reconciliation after relationship breakdown.

**Alcohol and drugs**
Alcohol and, in a smaller number of cases, drugs, exerted their effect both as risk factors and risk escalators. Alcohol misuse often appeared to adversely affect relationships and subsequently become a risk escalator, precipitating further health and social problems.

A man who had been a binge drinker and chronic abuser of alcohol resulting in marital disharmony became depressed when his wife left and was treated with an antidepressant. He experienced a mugging, lost his driving licence then his job and had a short prison sentence.

**Terminal illness confirmation**
In a small number of cases, suicide appeared to be an ‘exit strategy’ when a terminal illness was diagnosed. However, other risk factors in earlier life were generally present. Terminal illness confirmation appeared more likely to escalate risk than to be a primary risk factor.

**Financial worries**
There were eight cases where money worries were evident in the weeks or months prior to death.

**Critical incidents**

**Alcohol and drug use**
Testing for alcohol was not systematically carried out during post-mortem examination, which affects our ability to quantify the proportion of cases where alcohol was consumed in the lead up to the decision to act. Nonetheless, there were ample indications that alcohol was often part of the suicidal act.

**Arguments**
There was evidence in our study that arguments, including arguments about money to buy alcohol, had precipitated the suicidal act, notably where conflicts included a partner, where there was an element of hopelessness, or when bullying took place in institutional settings.

**Warning signs**

**Text messages and suicide notes**
We noted several examples of text messages and conventionally written suicide notes. The content was sometimes to avoid upset, a plea for help, an apology, an explanation, or an attempt to negate guilt in others. We are of course unable to speculate upon how many suicide text messages are sent and do not result in suicide.

**Threats of suicide**
Although our evidence sometimes included a chronicled history of threats of suicide, it is clear that we are not likely to have a true record of the number of threats made by an individual before they actually killed themselves. In some instances, death took place more than a decade after the initial suicide threat.

**Sorting out loose ends**
This included the gathering of a means to suicide such as a relative noticing the deceased carrying a length of rope or a dog lead. In other instances, the deceased closed down bank accounts and dealt with other financial matters to avoid leaving additional difficulties for others after his death.

**Discussion**

**Summary of main findings**
A number of key themes did emerge, some predictable and some less so. It was possible to
model a pathway to suicide which appears relevant to many if not all suicides. The model includes socio-economic determinants, risk factors, risk escalators and the presence of critical incidents that propel the person to act. This study has allowed us to speculate upon a common model for suicide, aligned but not identical to previous models (e.g., Commonwealth of Australia, 2007).

According to our model (see Figure 1), people fall into demographic categories whose association with suicide is undeniable at a population level, but which do not in themselves determine individual suicide risk. The presence of underlying risk factors appears to increase vulnerability and thus elevate suicidal risk. Risk escalators increase the risk because they influence mood and optimism. Typically the occurrence of a critical incident mobilised the person to action. Alcohol merits a particular mention since excessive alcohol consumption can be a risk factor, its influence upon relationships is that it is rarely helpful and accordingly alcohol can serve as a risk escalator, and alcohol consumption soon before death could reasonably be construed as a potential dis-inhibitor allowing people to feel confident enough to take action and make an attempt at suicide.

We have found some evidence that relationship breakdown is a risk escalator and particularly in relation to alcohol misuse. We speculated that there were a number of physical and psychological conditions which might conceivably contribute to relationship breakdown. Very few cases involved a simple cause and effect. Many involved multiple demographic and risk factors, risk escalators and critical events at a number of points in the deceased’s lifetime.

Evidence suggests that mental health disorders are found in at least 90% of suicides, more than 80% of whom are untreated at the time of death (Mann et al., 2005). Nearly all mental disorders are associated with an increased risk of suicide. However, the majority of people who die through suicide are not known to specialist mental health services, with only about 30% of suicides in contact with specialist services in the year preceding their death in England and Wales in 2005 (NCI, 2008). Longitudinal research suggests that an estimated 7% of suicides meet the diagnostic criteria for schizophrenia and about 10% of people with schizophrenia kill themselves (De Hert & Peuskens, 2000). Previous Cumbrian audits of suicide have produced similar rates, however in this study very few of the deceased had a diagnosed severe mental illness. It is unclear whether this finding is due to chance, improved management of people at increased risk in mental health services or poorer case detection and documentation.

Implications for clinical practice
Health care practitioners, particularly GPs and other members of the primary care team working with people with long-term conditions such as diabetes, chronic pain and alcohol misuse, should consider risk factors and risk escalators in relation to each individual case when carrying out suicide risk analysis. What this study suggests is that clinicians must consider the longer term risk factors in relation to the life events and risk escalators in order to decide if the situation requires additional investigation. Unfortunately there are few simple cause-effect risk factors, but given the impact upon other factors of alcohol misuse, chronic pain and erectile dysfunction, these factors would seem worthy of closer examination in relation to suicide risk.

Additional Information
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References


