# Audit of Suicides and Undetermined Deaths in Leeds 2011-2013



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## Contents

Report Authors and Acknowledgements	. 2
Contents	. 3
List of Tables	. 4
List of Figures	. 6
Executive Summary	. 7
Introduction1	11
Why is suicide prevention important? 1	11
National Policy1	13
Suicide in the Local Setting1	14
The Role of Suicide Audits1	14
Aims of the Current Suicide Audit1	17
Audit 2011-2013 Methodology1	18
Key Findings2	21
Results2	23
Trends2	23
Comparison with ONS Rates2	24
Age Distribution2	25
Gender and Sexual Orientation2	25
Ethnicity2	27
Geography and Deprivation2	28
Marital and Living Status	33
Risk Factors	35
Method and Location of Death	40
Employment	42
Contact with General Practice, Accident and Emergency, and Mental Heal Services	ith 43
Recommendations	47
Limitations of this Audit	51
References	53
Appendix5	55

### **List of Tables**

Table 1: Examples of current suicide prevention interventions in Leeds         17
Table 2: The number of cases included at each stage of the audit process
Table 3: Number of cases by year and in total for 2011-13 audit
Table 4: Rolling average rates for the years 2008-2010 to 2011-201323
Table 5: Age-standardised suicide rates for England and for Leeds taken from ONS
data
Table 6: Gender – Numbers and Percentages for the 2008-10 and the 2011-13 audit
Table 7: Gender – Rates (per 100,000) and Rate Ratio's for the 2008-10 and 2011-
13 Audit Population
Table 8: Sexuality – Numbers and Percentages    27
Table 9: Place of Birth for the 2011-13 audit population
Table 10: Number and percentage of cases per CCG    32
Table 11: Marital Status numbers and percentages for the 2011-13 audit population
Table 12: Living arrangements – Numbers and Percentages
Table 13: Risk factors for suicide – Number and percentages    37
Table 14: Risk factors for suicide assessed retrospectively    37
Table 15: Previous self-harm and suicide – Numbers and percentages       38
Table 16: Verdict returned by the coroner 2008-13 and 2011-13
Table 17: Location of suicide-Numbers and Percentages         41
Table 18: Last Contact with Primary Care – Numbers and Percentages         43
Table 19: Last Contact with A & E/Secondary Care – Numbers and Percentages 44
Table 20: Contact with Mental Health Services – Numbers and Percentages
Table 21: Alcohol/ Drug Misuse – Numbers and Percentages
Table 22: Age specific rates for the years 2008-13 per 100,00055
Table 23: Age Distribution – Numbers and Percentages for 2011-13       56
Table 24: Ethnicity – Numbers and Percentages for the 2011-13 audit
Table 25: Rates of suicide amongst different gender and ethnicity groups
Table 26: Single, divorced or separated individuals vs married cohabitating or civil
partnership – Numbers and percentages

Table 27: Postcode Districts – Numbers and percentages 2008-10 and 2011-13 59
Table 28: Rates, confidence intervals and rate ratios for suicides per postcode
district, 2008-10 and 2011-1361
Table 29: Method of death – Number and Percentage 2008-10 and 2011-13 61
Table 30: Location of death public vs private - Numbers and Percentages 2008-10
and 2011-13
Table 31: Employment Status – Numbers and percentages         62
Table 32: Reason for last contact with Primary Care and Accident and Emergency -
Numbers and Percentages
Table 33: History of mental illness – Numbers and percentages

# List of Figures

Figure 1: Diagram depicting the potential interaction between risk factors for suicide
Figure 2: Chart showing the three year average rolling suicide rate per 100,000 for
the Leeds city population24
Figure 3: Age Distribution-Number of deaths by age
Figure 4: Gender – Percentages of Male and Females in the 2011-13 audits 26
Figure 5: Ethnicity (from post mortem report and place of birth) – numbers
Figure 6: Rates of suicide amongst different gender and ethnic groups
Figure 7: Map depicting the location of suicides for 2008-10 by postcode district 30
Figure 8: Map depicting the location of suicides for 2011-13 by postcode district 31
Figure 9: Distribution across Leeds dieprivation deciles 2011-13
Figure 10: Marital Status Number of cases 2011-13; single, divorced or separated vs
married, cohabitating or civil partnership34
Figure 11: Depiction of risk factors identified through the audit
Figure 12: Method of suicide – numbers for the 2011-13 audit
Figure 13: Private vs Public locations for suicide. 'Private' includes own home and
someone else's home; 'public locations' includes every other location category 42
Figure 14: Employment status – Number of cases
Figure 15: Reason for last contact with General Practice and with Accident and
Emergency/ Secondary Care – Number of cases
Figure 16: History of mental illness – percentages of cases with specific disorders 45

### **Executive Summary**

Suicide is a tragedy that has devastating and wide-spread effects. It is a preventable cause of early death. Those who are close to or know someone who has taken their own life can experience a range of emotions, from anger and guilt to shame because of the stigma which still surrounds suicide. It is well evidenced that those who are bereaved by suicide are at a much higher risk of ending their own life.

Suicide prevention is a national priority and following the publication of 'Preventing Suicide in England: a cross-government outcomes strategy to save lives'<sup>1</sup>, local authorities have been encouraged to take a proactive role in this agenda. A key recommendation of the national strategy is to undertake a local suicide audit in order to determine the characteristics, events and risk factors that contribute to a person taking their own life. A suicide audit ensures resources and prevention interventions are targeted effectively to where there is most need.

In Leeds, suicide prevention has been a priority for the city for some time. There is a long-standing, multi-agency strategic suicide prevention group, and the previous Leeds Suicide Audit 2008-2010<sup>2</sup> (published in 2012) is nationally recognised as best practice.

The primary aim of the current audit is to contribute robust local data, which can be used in the development of a refreshed suicide prevention plan. This will ensure that resources are directed towards appropriate evidence-based interventions. A further aim is to compare the data to the 2008-10 audit and determine whether there are any significant changes in the demographics of people ending their life by suicide.

#### **Key Findings**

#### Demographics

The data from the 2011-13 audit demonstrates that overall there were 213 deaths attributed to suicide. This has increased from the 179 deaths identified in the previous audit.

The rate of death from suicide was 9.5 deaths per 100,000 people in Leeds. The rate from the previous audit was 8.1 deaths per 100,000. The rate of deaths from suicide has increased slightly.

The most common age group was those aged 40 to 49. This was also found in the 2008-10 audit.

141 (82.6%) of the cases were male. This has increased from the previous audit which found 79% were male.

The number of men compared to the number of women has also increased: men were almost five times more likely to take their own life than women. It is worth noting that in England men are three times more likely to end their life.

The rate of suicide in men has increased since the previous audit whereas the rate in women has not – the increase in the rate of suicides in Leeds is due to an increase in male suicide.

173 (81.2%) of the cases were White British. The majority of both men and women were White British.

The rate of suicide in White British males (23 per 100,000) was significantly higher than White British females (4.1 per 100,000), Black and Minority Ethnic (BME) males (9.6 per 100,000) and BME females (2.3 per 100,000). White British males were over twice as likely to end their life as BME males; White British females were nearly twice as likely as BME females. This clearly demonstrates that White British males are the group most at risk of suicide within Leeds.

#### **Deprivation and Geography**

Looking at the geographical distribution of suicides, a pattern has emerged that appears to correlate areas of high deprivation to areas with a high number of suicides.

It was found that 55% of the audit population lived in the most deprived 40% of the city. This shows a clear relationship between deprivation and suicide risk within the Leeds population.

The areas with the highest number of suicides per postcode district have remained broadly the same between the audits. The area with the highest number of suicides is slightly to the west and south of the city centre. These areas make a band across LS13, LS12, LS11, LS10 and LS9.

In terms of any change between the two audits, the 2011-13 distribution seems to be less concentrated in the southern parts of the city. Several districts in the north and west of the city have seen a slight increase in the number of suicides; these include LS17, LS16, LS18, LS19, LS20 and LS21. This is something to continue to monitor.

#### **Social Isolation**

Nearly 70% of the audit population were single, divorced or separated compared to 28% who were married, cohabitating or in a civil partnership. 40% lived alone. Analysis of risk factors for suicide show that 53% of individuals experienced problems with a personal relationship and 38% had experience of divorce or separation. A theme of social isolation emerges from these findings.

#### **Employment and Financial Situation**

34% of the individuals in the audit were unemployed. This compares to only 8.5% of the whole population of Leeds. More individuals in the audit population were unemployed than employed. Many (39%) of those included in the audit were experiencing financial difficulties. This has increased since the last audit. Taken together, these factors suggest a theme of worklessness and financial difficulties which seem to underlie a large proportion of the cases.

#### **Contact with Primary Care**

Over 10% of the individuals in the audit had visited their GP within one week prior to their death and 45% of them had attended within the previous month. Analysis of these consultations revealed that only 27% were focused on a mental health problem. The high number of people who attended primary care shortly before their death presents a significant opportunity to detect and support those who may be feeling suicidal.

#### Recommendations

- 1. Continue to target interventions towards those identified as most at risk.
- 2. Re-engage with all key partners (e.g. a range of third sector and statutory organisations across the city) that have contact with the groups identified as most at risk, and include them in the development and implementation of the suicide prevention strategy.
- 3. Work with primary care to increase the recognition of those at risk of suicide. This audit shows that 45% of people had contact with primary care within a month prior to their death. Evidence shows that interventions and training programmes aimed at increasing awareness of signs of suicide can be effective.
- 4. Appropriate management of poor mental health at an early stage. Research shows that those with depression and other mental illnesses can benefit from a range of interventions both pharmacological and psychosocial and these can reduce the risk of suicide.
- 5. Monitor trends in jumping/ falling as a method of suicide and the proportion of deaths occurring in public.
- 6. Engage new partners who may have influence over access to means of suicide across the city (e.g. partners in the city development and planning sector) in the multi-agency strategic suicide prevention group and in the development of the suicide prevention strategy.
- 7. Continue to prioritise postvention interventions aimed towards those who are bereaved by suicide, and ensure that this service is evaluated to add to the global evidence base around postvention interventions.

- 8. Engage fully with partners who are most likely to be in early contact with those who are bereaved by suicide (e.g. emergency departments, police or the Coroner's Office) to ensure early access to appropriate services.
- 9. Continue to work with colleagues in the media and promote the use of the guidelines developed in partnership with the National Union of Journalists.
- 10. Continue to undertake a suicide audit at regular intervals to gather detailed knowledge about the epidemiology and risk factors of those taking their own life in the city.
- 11. Consider the development of a real-time surveillance system for suspected suicide through working closely with key identified partners across the city.

### Introduction

A death from suicide is a tragedy that has a terrible impact on the people and community who surround that individual. Suicide is an important cause of death worldwide. The latest figures from the ONS showed that in 2014 over 6000 people took their own life in the UK. Death from suicide is preventable and with the right interventions and support the number of suicides can be greatly reduced.<sup>3</sup>

#### Why is suicide prevention important?

Preventing deaths from suicide is of paramount importance for several reasons; firstly, the avoidance of death for the individual themselves. Those who end their life by suicide tend to be middle aged. 40 to 49 is the age bracket with the highest number of suicides. It is estimated that a death from suicide costs on average 1.67 million pounds<sup>4</sup>. With the right support people who have attempted to end their life can lead fulfilling and healthy lives.

The negative impact of suicide goes well beyond the individual; death by suicide is often devastating for those who surrounded that individual. This is not exclusive to close family but also extends to friends, neighbours and co-workers. The negative impact can affect people who may come into contact with suicide in a professional capacity (for example police, nursing staff or those working in the fire service). The grieving process is often complicated. Bereavement by suicide has been described as 'like other bereavements, but more so'<sup>28</sup>. Survivors have more frequent compounded feelings of rejection, abandonment, shame, stigma, embarrassment and feelings of responsibility for the death than those bereaved through other circumstances<sup>29</sup>. There are often long-lasting impacts and those who have been bereaved by suicide are at a much higher risk of dying from suicide themselves<sup>5</sup>.

Suicide can also be harmful for the wider community and can cause shock and emotional distress. Suicide can often seem to 'come out of the blue', both for those close to the individual and for the wider community and this can add to the shock. It has been shown that suicide can have a contagious effect, with the occurrence of one suicide within a community making others more likely to occur.<sup>6</sup> This is not restricted to geographical areas, and people who share certain characteristics or experiences in common can be at increased risk, even if they do not live in close proximity to the individual who ended their life. The way in which the media covers suicide is therefore of paramount importance, so as to not exacerbate this contagion effect.

There are many factors which are known to be potential triggers or risk factors making it more likely that someone will end their life, likewise there are also factors which are known to be protective and make it less likely. Some of these risk factors are shown in Figure 1.



Figure 1: Diagram depicting the potential interaction between risk factors for suicide

Many of the interventions that work to reduce suicide are aimed at trying to improve or remove risk factors or triggers for suicide, which are often negative and harmful to mental wellbeing. Interventions aiming to reduce the number of suicides can have wider beneficial effects, improving mental wellbeing and resilience in the wider population. Suicide prevention interventions can therefore have a positive impact on those who would not have considered taking their own life in addition to those who would have intended to do so.

This current audit allows us to look in detail at those people who have taken their own life in Leeds; it means we can look closely at (amongst other things) who they were, where they lived, what they did for a living and what risk factors or triggers were present in their life that may have contributed to their death. This insight can help us to ensure that suicide prevention interventions in Leeds will be targeted towards those who are most at risk.

#### **National Policy**

In 2012 the government published 'Preventing Suicide in England: a crossgovernment outcomes strategy to save lives'<sup>1</sup>. This document suggests six areas for action:

AreaforactionReduce the risk of suicide in key high-risk groups1AreaforactionTailor approaches to improve mental health in specific groups2AreaforactionReduce access to the means of suicide3AreaforactionProvide better information and support to those bereaved or affected by suicideAreaforactionSupport the media in delivering sensitive approaches to suicide and suicidal behaviourAreaforactionSupport research, data collection and monitoring66Areaforaction

This strategy has been supplemented by specific evidence-based guidance from Public Health England to local authorities. Guidance has covered the following areas: establishing a local development plan<sup>7</sup>, dealing with suicides in public places<sup>8</sup>, preventing suicides in lesbian, gay, bisexual and transgender young people<sup>9</sup>, and identifying and responding to suicide clusters<sup>6</sup>.

An All Party Parliamentary Group (APPG) for Suicide and Self Harm Prevention, chaired by Madeleine Moon MP, aims to raise awareness within Parliament and encourage discussion and debate of all issues involved in suicide and self-harm prevention. In 2015, the APPG undertook a comprehensive review<sup>10</sup> of the implementation of the national 2012 suicide prevention strategy within local authorities. One recommendation within the report was that every local authority should undertake an audit of suicides, have a suicide prevention action plan and have a multi-agency suicide prevention group.

The Chief Medical Officer for England produces an influential annual report which focuses on an aspect of health felt to be of importance. The 2013 Chief Medical Officer Report<sup>11</sup> examines the importance of Public Mental Health, including a section on suicide and self-harm. Several policy suggestions were made including: improved integration of physical and mental health care; education of GPs and physicians with regard to the warning signs of suicide; the monitoring of novel methods of suicide (with the national increase in helium deaths highlighted as a particular concern); and the availability of high quality information through coroners to accurately monitor trends in suicide.

The Public Health Outcomes Framework<sup>12</sup> (PHOF) consists of a series of indicators which determine progress towards two overall aims: firstly to increase healthy life expectancy and secondly to reduce differences in life expectancy and healthy life expectancy between communities. The framework sets out a vision for public health and aids in the assessment of how well the health of the public is being improved.

Suicide rate is one of the indicators included within the PHOF<sup>12</sup>.

#### Suicide in the Local Setting

Data from the ONS show that Leeds has a suicide rate of 10.3 per 100,000 for the years 2012 to 2014; this is comparable to both the Yorkshire and Humber rate (10.3 per 100,000) and the rate for England as a whole  $(10.0 \text{ per } 100,000)^{13}$ .

Suicide is strongly linked to deprivation, with higher levels amongst deprived communities. Leeds City Council aims to reduce inequalities and has stated keeping people safe from harm and preventing people dying early are two of its priorities for 2016/17.<sup>14</sup> Suicide prevention work is consistent with Leeds City Council's stated values and priorities and also links well to the recently published Leeds Health and Wellbeing Strategy 2016-2021.<sup>15</sup> Suicide prevention interventions will help contribute towards Leeds City Council's ambition to reduce inequalities.

The Public Mental Health Team, the Office of the Director of Public Health, has long been undertaking audits of suicides occurring within Leeds; the latest audit was undertaken in 2012 and examined suicides occurring between the years of 2008 and 2010.<sup>2</sup> This audit clearly demonstrated that in Leeds those most at risk of suicide were locally born white middle-aged men.

The 2008-10 suicide audit was influential in the development of the Leeds suicide prevention plan overseen by a multi-agency strategic suicide prevention group (which includes representation from police, prisons, fire service, local third sector groups, Clinical Commissioning Groups, Adult Social Care and the local mental health trust). The local suicide work stream and action plan for the city has been implemented from 2013 onwards; some of the current suicide prevention work is highlighted in Table 1. In 2015 the Leeds suicide prevention plan and delivering team was a finalist in the national Local Government Chronicle Awards.

Leeds is at the forefront of the national suicide prevention agenda. A representative from the Public Mental Health Team recently addressed the APPG on suicide and self-harm and shared the good work that has been undertaken in Leeds.

#### The Role of Suicide Audits

Data about suicide from the ONS is limited in how much detail it provides about a local area; it is recommended practice for councils to undertake a suicide audit at

regular intervals to supplement this information and to obtain a detailed understanding of suicides within their local area.

Objective	Intervention	Outcome
Citywide Leadership for Suicide Prevention	Effective strategic leadership	Strategic group have overseen the action plan and ensured delivery. Suicide prevention remains a priority for the city. Work from Leeds group lobbied through APPG. Regional dissemination adoption of Leadership approach. Shortlisted for LGC award.
Target effective work with High Risk Groups through Community Development	Insight work commissioned for how to work with men at risk in Leeds	Insight work completed and findings disseminated city wide. Appropriate resources produced (crisis cards – endorsed citywide). Effective interventions across the city invested in targeting men at risk led and owned by the 3 <sup>rd</sup> sector e.g. Green Man project, Space 2 Men's group.
Provide better support to both primary care professionals those accessing primary care	Raise awareness of audit findings and provide targeted training for both the public and professionals	SafeTalk, ASIST and Mental Health First Aid delivered at target workforce with very good evaluation. CCG investment in local training and suicide prevention embedded in locality plans in South and East CCG and West CCG.
Provide better information and support to those bereaved or affected by suicide	Postvention service commissioned	Leeds Suicide Bereavement Service commissioned in 2015 to deliver effective interventions to those bereaved by suicide. Raising awareness of need. Identified gaps to commissioners around support for families in Leeds.
Support the media in delivering sensitive approaches to suicide and suicidal behaviour	Development of national Media guidelines	Leeds guidelines used to inform media on reporting of suicides, challenging stigma. Nationally endorsed.

Support research. data	Completion of Suicide Audit for
collection and	years 2001-13
monitoring	

Completed August 2016 and disseminated September 2016. Cited in Public Health England Guidelines. Leeds Audit of Suicide provides an example of best practice (2014).

Table 1: Examples of current suicide prevention interventions in Leeds

This is a result of recognition that the risk factors which underlie suicide may vary between different areas; a robust audit of suicides can help to guide the development of services ensuring that they target those most at risk. The 2008-10 audit has been recommended nationally as best practice within guidance published by Public Health England.<sup>7</sup>

#### Aims of the Current Suicide Audit

- To contribute robust, local and meaningful data which can be utilised in the development of a suicide prevention plan to ensure that resources are being appropriately targeted to the populations most at risk of and affected by suicide.
- To compare the data to the previous audit and determine if there are any changes in the demographics of people ending their life by suicide.

It is worth noting that the aim of the current audit is *not* to assess the effectiveness of suicide prevention interventions developed following the publication of the previous suicide audit.

## Audit 2011-2013 Methodology

#### The Data Source

Coroner's records of inquests were used as the data source for this audit of suicides. All unexpected deaths are reported to the Coroner, and, in any deaths in which suicide is suspected, an inquest is held. Using Coroner's records should therefore give us access to information about all the suicides which occurred during the time period of interest.

In order to complete this work the Public Mental Health Team and the Leeds and Wakefield Coroner's Office worked in partnership and we were granted full access to the Coroner's records.

#### **Process Overview**

The identification and collection of the data occurred in three stages. The first two stages involved identifying the records that we wished to examine further; the third stage was examining the file in full and extracting any relevant data.

#### Stage One

The Coroner's records of any deaths reported in the three year period from 2011 to 2013 were examined to identify those records we wished to take forward to the second stage. These were paper records and showed the individual's name, address, age, date of death, details from the death certificate, how the Coroner's Office handled the death (i.e. if an inquest was required or not) and the verdict of any inquest held.

These paper records were manually examined by two researchers separately and any records meeting at least one of the criteria below were included. If there was a difference of opinion between the researchers regarding a case, this was resolved by discussion and consensus. If consensus could not be reached, a third researcher was consulted.

#### **Criteria for Stage One**

# Records should be included if the individual lived within the Leeds area and had at least one of the following criteria:

- Any individual with a verdict of 'killed self'
- Any individual who had a cause of death which could potentially be selfinflicted regardless of verdict (e.g. overdose, hanging)

- Any individual in which acute alcohol intoxication/ acute use of drugs is mentioned in the death certificate
- Any individuals for whom there is insufficient information to exclude at this stage

# Exclude any records for which none of the above criteria apply and there is a clear natural/ non-suspicious cause of death

#### Stage Two

In stage two the records identified in stage one were examined more closely on the Coroner's electronic database. Those which do not meet the criteria below are excluded.

Where possible this stage was undertaken by two researchers. Any differences of opinion were resolved by consensus; if no consensus could be reached a third researcher was contacted to decide if the record should be retained to progress to stage three.

#### Criteria for Stage Two

#### Records should be excluded if any of the following criteria apply:

- Death is clearly stated to be from a natural cause (e.g. a medical pathology)
- Injury due to an external agent (e.g. road traffic accident with no evidence of intention; murder)
- Death due to alcohol with no other cause, no known psychiatric history and unknown intent
- Death due to substance misuse with no other cause, no known psychiatric history and unknown intent
- Death due to alcohol and substance misuse with no other cause or known psychiatric history and unknown intent

#### Stage Three

The records still included at the end of stage two were requested in full from the Coroner's office and examined in detail. The data from each record was extracted onto the pre-prepared template. The data was entered straight into a secure drive folder.

For the first session of the third stage three of the records were examined independently by three of the researchers and the data extracted was compared. This was to evaluate the template being used and to resolve any issues or problems leading to inter-operator differences. If it became clear on full examination of the record that the case was not a suicide then it was excluded.

Stage of Process	Number of Cases
End of Stage One	553
End of Stage Two	263
End of Stage Three	213

Table 2: The number of cases included at each stage of the audit process

From the files identified at the end of stage two, three could not be obtained from the Coroner's Office and one inquest was yet to be heard at the time of data collection. Forty-six cases were excluded because either they were found to be outside of the Leeds Local Authority boundary or because there was insufficient evidence to suggest the death was a suicide.

## **Key Findings**

#### Demographics

The data from the 2011-13 audit demonstrates that overall there were 213 deaths attributed to suicide. This has increased from the 179 deaths identified in the previous audit.

The rate of death from suicide was 9.5 deaths per 100,000 people in Leeds. The rate from the previous audit was 8.1 deaths per 100,000. The rate of death from suicide has increased slightly.

The most common age group was those aged 40 to 49. This was also found in the 2008-10 audit.

141 (82.6%) of the cases were male. This has increased from the previous audit which found 79% were male.

The number of men compared to the number of women has also increased: men were almost five times more likely to take their own life than women. It is worth noting that in England men are three times more likely.

The rate of suicide in men has increased since the previous audit whereas the rate in women has not – the increase in the rate of suicides in Leeds is due to an increase in male suicide.

173 (81.2%) of the cases were White British. The majority of both men and women were White British.

The rate of suicide in White British males (23 per 100,000) was significantly higher than White British females (4.1 per 100,000), Black and Minority Ethnic (BME) males (9.6 per 100,000) and BME females (2.3 per 100,000). White British males were over twice as likely to end their life by suicide as BME males; White British females were nearly twice as likely as BME females. This clearly demonstrates that White British males are the group most at risk of suicide within Leeds.

#### **Deprivation and Geography**

Looking at the geographical distribution of suicides, a pattern has emerged that appears to correlate areas of high deprivation to areas with a high number of suicides.

It was found that 55% of the audit population lived in the most deprived 40% of the city. This shows a clear relationship between deprivation and suicide risk within the Leeds population.

The areas with the highest number of suicides per postcode district have remained broadly the same between the audits. The area with the highest number of suicides is slightly west and south of the city centre. These areas make a band across LS13, LS12, LS11, LS10 and LS9 (See Figures 7 and 8).

In terms of any change between the two audits, the 2011-13 distribution seems to be less concentrated in the southern parts of the city. Several districts in the north and west of the city have seen a slight increase in the number of suicides; these include LS17, LS16, LS18, LS19, LS20 and LS21. This is something to continue to monitor.

#### **Social Isolation**

Nearly 70% of the audit population were single, divorced or separated compared to 28% who were married, cohabitating or in a civil partnership. 40% lived alone. Analysis of risk factors for suicide show that 53% of individuals experienced problems with a personal relationship and 38% had experience of divorce or separation. A theme of social isolation emerges from these findings.

#### **Employment and Finances**

34% of the individuals in the audit were unemployed. This compares to only 8.5% of the whole population of Leeds. More individuals in the audit population were unemployed than employed. Many (39%) of those included in the audit were experiencing financial difficulties. This has increased since the last audit. Taken together, these factors suggest a theme of worklessness and financial difficulties which seem to underlie a large proportion of the cases.

#### **Contact with Primary Care**

Over 10% of the individuals in the audit had visited their GP within one week prior to their death and 45% of them had attended within the previous month. Analysis of these consultations revealed that only 27% were regarding solely a mental health problem. The high number of people who attended primary care shortly before their death presents a significant opportunity to detect and support those who may be feeling suicidal.

### **Results**

#### Trends

	2011	2012	2013	2011 to 2013
Number of Cases	70	75	68	213

 Table 3: Number of cases by year and in total for 2011-13 audit

Table 3 shows that the total number of people included in the audit was 213; these were fairly evenly distributed across the three years. The total number of people has increased from the 179 people included in the 2008-10 audit.

The crude rate of suicide over the time period 2011 to 2013 was 9.5 per 100,000. The rate for the 2008-10 audit (recalculated using the same denominator data) was found to be 8.1 per 100,000. There is an increase in suicide rates between the two audits; however this difference is not statistically significant. This is because the increase in suicide rate is relatively small.

Time Period	Rate per 100,000 of population	Confidence Interval
2008-2010	8.1	6.9-9.4
2009-2011	8.4	7.3-9.7
2010-2012	9.2	8-10.5
2011-2013	9.5	8.2-10.8

Table 4: Rolling average rates for the years 2008-2010 to 2011-2013

The three year rolling averages for the years 2008 to 2013 are shown in Table 4 and are also depicted in Figure 2.

This demonstrates that the rate of suicide has gradually increased between 2008 and 2013 but again, this rise is not statistically significant. Age-specific rates are included in the appendix.



Figure 2: Chart showing the three year average rolling suicide rate per 100,000 for the Leeds city population.

#### **Comparison with ONS Rates**

The national rate of suicide for England and for Leeds as calculated by the ONS for the years 2008-10 and 2011-13 are shown in Table 5. These show that Leeds has a similar rate of suicide to the national average. They also demonstrate a slight increase between the years of 2008-10 and 2011-13. This is in line with the rates found in the current audit.

Time Period	ONS Age-standardised Suicide Rate for England per 100,000 population (confidence interval)	ONS Age-standardised Suicide Rate for Leeds per 100,000 population (confidence interval)
2008-2010	9.4 (9.2-9.5)	8.9 (7.5-10.2)
2011-2013	9.8 (9.6-10.0)	10.9 (9.4-12.4)

Table 5: Age-standardised suicide rates for England and for Leeds taken from ONS data

While the audit derived rates are similar to those produced by the ONS there are some important methodological differences in the way suicide is classified, and also in the calculation of the rate itself. The audit uses a crude rate so as to better estimate the true rate of suicide within the Leeds population. The ONS use an age standardised rate which facilitates comparison between different regions. These differences mean that the audit rates and ONS rates should not be compared.

#### Age Distribution



Figure 3: Age Distribution-Number of deaths by age

The age distribution of the audit population is shown in Figure 3. This demonstrates that those aged 40-49 were the most likely to end their life by suicide; 26.3% of the cases included in the audit were within this age bracket. This is similar to the age distribution shown in the previous audit and is similar to the national data.<sup>13</sup>

#### **Gender and Sexual Orientation**

Table 6 shows the gender breakdown of the audit populations for 2008-10 and 2011-13. There are more males then females and this was the case in both audits. In the current audit the percentage of males has increased and the percentage of females has slightly decreased.

Gender	2008-10 Number	2008-10 Percentage	2011-13 Number	2011-13 Percentage
Female	38	21%	37	17.%
Male	141	79%	176	82.6%

Table 6: Gender – Numbers and Percentages for the 2008-10 and the 2011-13 audit

Of interest is the ratio of male to female deaths (shown in Table 7). For every female death there were nearly five male deaths; this is higher than for the UK as a whole. In the 2008-10 audit this ratio was already higher than the UK average and since then the difference has increased.

The rate of male death has increased from the 2008-10 audit, however the rate of female death has not increased. This means that the observed increase in the rate of suicides is due to an increase in male suicides.



Figure 4: Gender – Percentages of Male and Females in the 2011-13 audits

'Male' and 'female' were not the only possible options to categorise gender. 'Transgender' or 'other genders' (with space on the template to add further details) were also options. However, these categories did not apply to any of the cases.

	2008-2010 Audit	2011-2013 Audit
Male Rate From Audit	12.9	15.8
Female Rate From Audit	3.3	3.2
Audit Male to Female Rate Ratio	3.9	4.9
UK Male to Female Rate Ratio	3.2	3.4

Table 7: Gender – Rates (per 100,000) and Rate Ratio's for the 2008-10 and 2011-13 Audit Population

Sexual orientation was not well recorded within the case notes – only 2% of cases had sexual orientation officially stated. To assess sexual orientation the relationship history of the individual was assessed (for example, if they were married to a member of the opposite gender and there was no evidence to suggest any other sexual orientation, the individual would be recorded as heterosexual). This method of data collection is limited as it may be inaccurate; this data should be used with caution. The data indicates that the majority of individuals are heterosexual. However, a significant proportion of the audit population had no indication of their sexual orientation within the Coroners' record.

Sexuality	Number	Percentage
Heterosexual	175	82.2%
Homosexual	6	2.8%
Bisexual	1	0.5%
Evidence of questions around sexuality	2	0.9%
Unknown	29	13.6%

Table 8: Sexuality – Numbers and Percentages

#### Ethnicity

For this audit, we attempted to obtain official ethnicity from the police and/ or from medical records within the Coroner's file. Unfortunately, ethnicity was not recorded in the vast majority of cases (81.2%). To overcome this, we referred to the skin colour from the post mortem report and the place of birth (both factors which were consistently well recorded) to assess ethnicity.



Figure 5: Ethnicity (from post mortem report and place of birth) – numbers

The ethnic breakdown of the audit population can be seen in Figure 5. The biggest change between the 2008-10 audit and the current one is the percentage of those of unknown ethnicity; this has decreased from 22.9% to 3.8%. This is likely due to the different method employed to examine ethnicity. While there are limitations to this

method, it has allowed us to obtain an ethnicity for over 95% of cases which allows us to draw firm conclusions.

It is of interest that a high percentage of cases were White British (81.2%). Looking at the male and female audit populations separately, 76% of females and 82% of males who ended their life were White British.

The different ethnic groups were combined into one, Black and Minority Ethnic (BME), after the exclusion of those with unknown ethnicity and those identified as White British. Rates of suicide were calculated for the different groups and are shown in Figure 6. This shows that the rate for White British males is significantly higher than for the other three groups. Of interest, White British males and White British females are nearly twice as likely to take their own life then BME males and females respectively. This clearly indicates that in comparison to the BME population of Leeds, White British individuals are at a higher risk of suicide, particularly males.



Figure 6: Rates of suicide amongst different gender and ethnic groups

#### **Geography and Deprivation**

Table 9 shows place of birth. The majority of the audit population were born in Leeds. Only 5.6% were born outside of the UK. This number has decreased slightly from the previous audit where 9.9% of people were born outside the UK. This is something that can be monitored in the future to see if this is a persistent trend.

Place of Birth	Number	Percentage
Leeds	103	57.5%
Yorkshire (excluding Leeds)	25	14.0%
United Kingdom (excluding Yorkshire)	39	21.8%
Ireland	2	1.1%
International – Other European Country	3	1.7%
Africa	3	1.7%
India	2	1.1%
Not Stated	2	1.1%

Table 9: Place of Birth for the 2011-13 audit population

The number of suicides within each postcode district is shown in Figure 7 and Figure 8. Figure 7 shows the suicides for the years 2008-10 and Figure 8 shows those in 2011-13. The postcode of the home address was used regardless of whether the death took place at home or not. This means those who do not have a home address are not included (four cases were not included: three had no fixed abode and the fourth did not have a postcode recorded). These maps show that there is a band of postcode districts with a high number of suicides just to the west and south of the city centre:

- LS13
- LS12
- LS11
- LS10
- LS9

The areas with the highest numbers of suicides do not seem to have changed between the two audits; however, many postcode districts to the north and west of the city centre have seen an increase in the number of suicides:

- LS21
- LS19
- LS16
- LS17
- LS18
- LS28





Deprivation does not map neatly onto postcode districts, however the geographical distribution of deprivation tends to match areas with high numbers of suicides. This pattern is observed more strongly in the 2008-10 data then in the 2011-13 data.

The number of suicides per postcode is not an ideal way to measure the distribution of suicide across the city; however we were limited in that the data from the last audit was analysed and saved by postcode district. In order to meaningfully compare the geographical distributions between the two audits, postcode district had to be used.

The rate of suicide within each postcode for both audits has been calculated along with a rate ratio to assess change between them; these have been included in the appendix (see Table 28). These were not used on the maps as the very low numbers of suicides in some districts makes the figures unreliable.

The rates of suicide in postcode districts with three or more deaths broadly follow the same patterns as the number of deaths per district. It is clear that there is geographical variation in the distribution of suicide across the city of Leeds.

Clinical Commissioning Group	Number	Percentage
Leeds North	42	19.7%
Leeds South and East	64	30.1%
Leeds West	79	37.1%
Not Registered with a GP/ Unknown	28	13.15%

 Table 10: Number and percentage of cases per CCG

GP Practice was used to determine how the cases were distributed across the Clinical Commissioning Groups (CCGs). This is shown in Table 10. Leeds West CCG had the highest number with 79 people.



Figure 9: Distribution across Leeds deprivation deciles 2011-13

Using the full postcode of each case, it is possible to determine the level of deprivation that the individual was likely to have experienced. The population of Leeds has been divided into ten 'deprivation deciles'. These range from one (the most deprived 10% of the Leeds population) to ten (the least deprived 10%). These deciles do not refer to a specific geographical location and so the population included within a particular decile do not necessarily all live in the same area.

Figure 9 shows the distribution of the cases in the audit across the deprivation deciles for Leeds. It is clear that the most four deprived deciles have a higher proportion of the audit population then the least deprived six. 55% of those who took their own life lived within the most deprived 40% of the city. This shows a clear link between deprivation and the risk of suicide. Deprivation has been repeatedly demonstrated to be a strong risk factor for suicide <sup>16,17</sup>.

#### Marital and Living Status

The most common marital status amongst the audit population was 'single'. This replicates the finding from the 2008-10 audit. The majority of the cases (69%) were single, separated or divorced, compared to 28% who were married, cohabitating or in a civil partnership; this is shown in Figure 10.

Marital Status	Number	Percentage
Single	107	50.2%
Separated	9	4.2%
Divorced	31	14.6%
Widowed	7	3.3%
Married	52	24.4%
Cohabitating	7	3.3%

Table 11: Marital Status numbers and percentages for the 2011-13 audit population

There is a slightly higher percentage of single and separated men than women and a slightly higher percentage of married women than men. In addition, all 7 widowed individuals are male. Looking at the living arrangements of the whole audit population (shown in Table 12) the largest single category with 40.4% of cases is 'living alone'. Taken together, these results could indicate an element of social isolation amongst those who take their own life; this seems particularly prominent in men.



Figure 10: Marital Status Number of cases 2011-13; single, divorced or separated vs married, cohabitating or civil partnership

Home Situation	Number	Percentage
Child(ren) over 18	2	0.9%
Child(ren) under 18	4	1.9%
Living Alone	86	40.4%
Living with Parents	16	7.5%
Living with Partner	40	18.8%
Not Known	4	1.9%
Other Family	14	6.6%
Other Shared Living Arrangements	19	8.9%
Spouse / Partner & Child(ren) under 18	22	10.3%
No fixed abode/ sofa surfing	6	2.8%

 Table 12: Living arrangements – Numbers and Percentages

#### **Risk Factors**

Over half of the audit population had been experiencing relationship/ family problems. There was high prevalence of other risk factors such as worklessness, divorce/ separation, physical illness/ disability, and financial difficulties.

Risk factors such as relationship problems, divorce/ separation and physical illness/ disability often contributed to loneliness and social isolation amongst those taking their own life. Social isolation was not a risk factor recorded in itself because it is not something which was often stated explicitly in the record; however, in many of the records examined there was a sense that the individual was isolated or lonely.

'Financial difficulties' is a risk factor of note. The years 2011-2013 saw a period of recession and austerity. There is growing evidence, both nationally and internationally, that a poor economic climate is associated with an increase in the rate of suicide<sup>18,19</sup>. In the 2008-10 audit this risk factor was assessed slightly differently by looking for 'debt/ bankruptcy'. For the 2011-13 audit, in recognition that financial difficulties causing distress can take forms other than debt or bankruptcy, the category was widened to the more general 'financial difficulties'. Despite the change in the way this risk factor has been assessed, it is of interest that it has increased from 7.3% to 39% between the two audits. This may represent the effects of a climate of recession and austerity.



Figure 11: Depiction of risk factors identified through the audit

The risk factors in Table 13 were present on the template before the data collection process began. However, where there was additional information felt to be particularly pertinent this was also recorded on the template. At the end of the audit process, these additions were discussed amongst the audit team. It was agreed that there were some factors which we would all have reliably recorded; these are shown in Table 14. These are of interest but cannot be considered as accurate as the factors recorded in Table 13.

Risk Factor	Number	Percentage
Relationship/family problem	112	53%
Bereavement	55	26%
Forensic History	44	21%
Redundancy	11	5%
Domestic Violence	45	21%
Worklessness	105	49%
Financial Difficulties	83	39%
Debt/Bankruptcy	-	-
Divorce/separation	80	38%
Homelessness	13	6%
Physical Illness/Disability	80	38%
Childbirth past 12 months	6	3%
Family/friend history of suicide	21	10%

Table 13: Risk factors for suicide – Number and percentages

Risk Factor	Number	Percentage
Individual was a child in care	6	3%
Children removed from home	11	5%
Historic child abuse	16	8%

Table 14: Risk factors for suicide assessed retrospectively

#### **Previous Self-Harm and Suicide**

	History of Previous Self-Harm		History of Previ Attempt	ious Suicide
	Number	Percentage	Number	Percentage
Yes – In past 12 months	40	18.8%	22	10.3%
Yes – Not in past 12 months	47	22.1%	32	15%
Yes but timing unknown	0	0%	1	0.5%
No/Unknown	126	59.2%	158	74.2%

Table 15: Previous self-harm and suicide – Numbers and percentages

Nearly 40% of the audit population had a history of self-harm. This is higher than the number of people who have a history of self-harm reported across the  $UK^{20}$  (5%). 18.8% of cases had a history of self-harm in the year prior to death. Nationally, 5.6% of people report a history of suicide attempt; in the audit population 25% of people have a history of at least one suicide attempt.

This clearly indicates that a history of self-harm and a history of previous suicide attempt are both risk factors for suicide in Leeds.

	2008-201	0 Audit	2011-2013 Audit	
	Number	Percentage	Number	Percentage
Accidental/Misadventure	34	19.0%	12	5.6%
Narrative	8	4.5%	8	3.8%
Open	21	11.7%	10	4.7%
Unknown	0	0%	5	2.3%
Dependent abuse of drugs	0	0%	2	0.9%
Killed Self	116	64.8%	176	82.6

#### Verdict of the Inquest

Table 16: Verdict returned by the Coroner in the cases included in the 2008-13 and 2011-13 audit

The majority of the cases had a verdict of 'killed self'. However, between the two audits, the percentage of cases with an 'accidental/ misadventure' or 'open' verdict had decreased. The percentage of cases with a 'killed self' verdict has increased. This could represent a change in practice within the Coroner's Office.



#### Method and Location of Death

Figure 12: Method of suicide – numbers for the 2011-13 audit

Hanging/ strangulation is still the most frequent method of suicide within the city; this was the method of death in 68.5% of cases. This is consistent with the national picture. Poisoning is the second most common method; no one poison predominated. Of note is that the percentage of cases that died by jumping/ falling has increased from 3.9% to 8.9% (an increase from 7 to 19 cases).

Death by helium inhalation was not highlighted as a specific category in the 2008-10 audit report. However, nationally there has been recognition that this method of suicide has increased in use<sup>11</sup>. In the current audit, two individuals took their life by helium inhalation. The trend in the use of helium is something which should be monitored.

Location	Number	Percentage
Own Home	146	68.5%
Park/Woodland	17	8.0%
Someone else's home	10	4.7%
Prison	3	1.4%
Hospital	4	1.9%
River/lake/canal	5	2.3%
Railway	2	0.9%
Workplace	2	0.9%
Other Outdoor Location	5	2.4%
Car Park	5	2.3%
Hotel	5	2.3%
Squatter's dwelling/ abandoned building	2	0.9%
Bridge	4	1.9%
Tower block (not a resident)	3	1.4%

Table 17: Location of suicide-Numbers and Percentages

Separating public and private locations into two categories (shown in Figure 13) indicates that in the 2011-13 audit 26.8% of people ended their life in a public location. This has increased from the 2008-10 audit, and this can be partially explained by the increase in deaths by jumping/ falling. The increase in deaths in public locations is something which should be monitored to determine if it is a continuing trend.

Analysis of deaths that occur in public locations revealed no 'hotspots' (locations in which multiple suicides have occurred) in Leeds. This analysis cannot be published within this report as it would mean revealing the location of individual deaths, which would be a breach of confidentiality.



Figure 13: Private vs Public locations for suicide. 'Private' includes own home and someone else's home; 'public locations' includes every other location category

#### Employment

Figure 14 shows the employment status of the 2011-13 audit population. The most frequent employment status was 'unemployed' with 39.4% of the population. 34% were employed. This has not changed significantly since the previous audit.

Data from the ONS shows that across the city as a whole, 8.5% of people were unemployed in 2012. This means that those individuals who took their own life were more likely to be unemployed than the general population of Leeds.



Figure 14: Employment status – Number of cases

# Contact with General Practice, Accident and Emergency, and Mental Health Services

Table 18 shows the last known contact with primary care prior to death. It is notable that 44.6% of audit population saw their GP within a month prior to their death, and just over 90% had contact within the previous year. These figures are broadly similar to those found in the 2008-10 audit. Only 27.2% of people in the current audit had visited primary care because of a mental health concern alone.

The large proportion of those who had been in recent contact with primary care presents a significant opportunity to detect and support those who may be feeling suicidal.

Last contact with GP	Number	Percentage	Cumulative Percentage
Within previous week	26	12.2%	12.2%
1 week to 1 month	69	32.4%	44.6%
1-3 months	34	16.0%	60.6%
3 months to one year	34	16.0%	76.6%
More than a year ago	29	13.6%	90.2%
None/ not known	21	9.9%	-

#### Table 18: Last Contact with Primary Care – Numbers and Percentages

Table 19 shows the last contact the individuals in the audit had with Accident and Emergency/ secondary care. 22% of the cases had contact with these departments within one year of their death.

Last Contact with A and E / Secondary Care	Number	Percentage	Cumulative Percentage
Within previous week	18	8.5%	8.5%
1 week to 1 month	7	3.3%	11.8%
1-3 months	14	6.6%	18.4%
3 months to one year	7	3.3%	21.7%
More than a year ago	8	3.8%	25.5%
None/ not known	159	74.6%	-

Table 19: Last Contact with A and E/ Secondary Care – Numbers and Percentages



Figure 15: Reason for last contact with General Practice and with Accident and Emergency/ Secondary Care – Number of cases.

24.9% of people had current contact with mental health services. This means that three quarters of those who took their own life were not in contact with mental health services at the time of their death. 8 of the cases (3.8%) were current inpatients in a mental health facility at the time of their death.

	Number	Percentage
Current use	53	24.9%
Within past year	10	4.7%
Over one year ago	30	14.1%

No previous contact	120	56.3%

 Table 20: Contact with Mental Health Services – Numbers and Percentages

70% of the audit population had a history of mental illness. Over half (54.9%) of the cases had a history of depression. The high level of those with a history of mental illness, particularly depression, shows that in Leeds this is a risk factor for suicide.



Figure 16: History of mental illness – percentages of cases with specific disorders

Alcohol and Drug Use	2011-2013 Audit	
	Number	Percentage
Alcohol – Not within Past 12 Months	5	2.3%
Alcohol – Within past 12 months	34	16.0%
Both within past 12 months	19	8.9%
Both – Not within past 12 months	6	2.8%
Drugs – Not within past 12 months	5	2.3%
Drugs – Within past 12 months	20	9.4%
None/Not known	125	58.7%

Table 21: Alcohol/ Drug Misuse – Numbers and Percentages

16% of those included in the audit were misusing alcohol and 9.3% of people were misusing drugs. 8.9% were abusing both alcohol and drugs at the time of their death.

In total, just over 40% of the audit population had a current or past history of drug or alcohol misuse. This is a high proportion and shows a clear link between drug and alcohol misuse and risk of suicide.

### **Recommendations**

The following recommendations are based on the findings of this audit, national policy and a review of evidence. They are structured according to the six areas for action suggested in the 2012 National Prevention Strategy<sup>1</sup>:

#### Area for action 1

Reduce the risk of suicide in key high-risk groups:

This audit has identified that those at the highest risk of suicide within Leeds are:

- White British
- Aged 30-49
- Male
- Born locally
- Living alone
- Single/ separated/ divorced
- Experiencing worklessness
- Have a history of self-harm or previous suicide attempt(s)
- Have a history of drug /alcohol misuse

Interventions targeting White British men have already been established within Leeds (see Table 1).

#### **Recommendation 1**

Continue to target interventions towards those identified as most at risk.

#### Recommendation 2

Re-engage with all key partners (e.g. a range of third sector and statutory organisations across the city) that have contact with the groups identified as most at risk, and include them in the development and implementation of the suicide prevention strategy.

#### Area for action 2

Tailor approaches to improve mental health in specific groups.

Specific groups which the audit shows to be at a high risk of suicide are:

- Those who have a history of drug or alcohol abuse
- Those in ill physical health
- Those who have poor mental health

Although the audit shows that White British individuals are at a much higher risk, it must also be recognised that those from different ethnic groups and backgrounds may benefit from a tailored approach to suicide prevention.

#### **Recommendation 3**

Work with primary care to increase the recognition of those at risk of suicide. This audit shows that 45% of people had contact with primary care within a month of their death. Evidence shows that interventions and training programmes aimed at increasing awareness of signs of suicide can be effective.<sup>21</sup>

#### **Recommendation 4**

Appropriate management of poor mental health at an early stage. Research shows that those with depression and other mental illnesses can benefit from a range of interventions both pharmacological<sup>21,22,23</sup> and psychosocial<sup>21,24</sup> and these can reduce the risk of suicide.

#### Area for action 3

Reduce access to the means of suicide.

The audit shows that Leeds does not have a 'hot spot' at which multiple suicides take place. The majority of deaths occur within the home. It is of interest, however, that the number of deaths occurring in public has increased in part due to the increase in those taking their lives by jumping/ falling. As highlighted in the 'limitations' section, further interrogation of the case files around residential high-rise buildings in Leeds may have been useful.

The evidence around suicide prevention interventions is particularly strong around reducing access to means of suicide<sup>21,25</sup>.

#### **Recommendation 5**

Monitor trends in jumping/ falling as a method of suicide and the proportion of deaths occurring in public.

#### **Recommendation 6**

Engage new partners who may have influence over access to means of suicide across the city (e.g. partners in the city development and planning sector) in the multi-agency strategic suicide prevention group and in the development of the suicide prevention strategy.

#### Area for action 4

Provide interventions and support to those bereaved or affected by suicide.

The audit shows that 10% of those included in the audit had been bereaved by suicide. Leeds City Council has commissioned an innovative postvention service that offers support to those bereaved by suicide (Leeds Suicide Bereavement Service).

#### **Recommendation 7**

Continue to prioritise postvention interventions aimed towards those who are bereaved by suicide, and ensure that this service is evaluated to add to the global evidence base around postvention interventions.

#### **Recommendation 8**

Engage fully with partners who are most likely to be in early contact with those who are bereaved by suicide (e.g. Accident and Emergency departments, police, Coroner's Office) to ensure early access to appropriate services.

#### Area for action 5

Support the media in delivering sensitive approaches to suicide and suicidal behaviour.

There is evidence suggesting that adverse media coverage can be a risk factor for suicide<sup>25</sup> and there are concerns that some media coverage can contribute to the 'contagion' effect of suicide<sup>6</sup>.

In partnership with the National Union of Journalists, Leeds City Council have developed guidelines for the media to aid journalists when reporting on a death by suicide.<sup>26</sup> These guidelines have been well received nationally.

#### **Recommendation 9**

Continue to work with colleagues in the media and promote the use of the guidelines developed in partnership with the National Union of Journalists.

#### Area for action 6

Support research, data collection and monitoring.

The 2008-10 audit was recognised as a national example of good practice. However, as discussed in the 'Limitations' section, the audit process is retrospective. There has been an increasing recognition that real-time surveillance of suicides can aid in the detection of a suicide cluster.<sup>6</sup>

#### **Recommendation 10**

Continue to undertake a suicide audit at regular intervals to gather detailed knowledge about the epidemiology and risk factors of those taking their own life in the city.

#### **Recommendation 11**

Consider the development of a real-time surveillance system for suspected suicide through working closely with key identified partners across the city.

### **Limitations of this Audit**

As an audit team we have made every effort to ensure that the research process was as robust as possible. However, there are some limitations to the methodology:

#### **Breadth of the Source Material**

The Coroner's records are the best possible resource that can be used to obtain the kind of detailed information required in relation to suicides occurring in Leeds. The primary aim of the Coroner's process is to judge the cause of the death in question. This means that, in some respects, the Coroner's file cannot always contain all of the desirable information. Two examples of this are accurate ethnicity and sexual orientation data. The only failsafe way to ascertain these factors would be to ask the individual in question, which is not a possibility.

#### Accuracy of the Source Material

Much of the information we obtained about risk factors was ascertained from witness statements provided by people who knew the deceased individual. This information is subjective and may not represent the true situation. This introduces the possibility of bias into the audit.

#### Time Lag

The audit is retrospective and looks back on the years 2011 to 2013; this means these deaths occurred five to three years prior to the publication of this research. This time lag is unavoidable as in order to access the Coroner's record, the evidence needs to have already been assembled and the inquest completed by Coroner. This process can be lengthy, particularly if the case is a complex one (for instance, a death within a prison). One record could not be obtained for this audit because the inquest was yet to be heard. The delay could not be avoided but it does mean we need to be careful when interpreting the results of the audit as they do not necessarily reflect the current situation in Leeds.

#### Low Number of Cases

There were 213 cases included in this audit which is a small number, especially when divided into subcategories. The small numbers mean that it can be difficult to tell if change between audits, or differences between categories, actually represents true differences or if they are due to chance. Statistical tests of differences typically do not work well when the numbers are this small.

#### Factors not explored

There were some factors which were not systematically explored in the audit process, but were later identified as being of potential interest. Some of these were retrospectively explored (see Table 14). This was only undertaken if all team members felt they had consistently recorded a particular factor. Some factors (such as living in a high-rise building or suicide by means of falling/ jumping from a high-rise building) were not included in the data extraction template and were therefore not consistently recorded by all team members.

Prior to starting the data collection process, considerable time was spent reflecting on the data to collect from the Coroner's records. It is unfortunate that additional factors became of interest at a later date; however, reflecting on these factors will help inform the design of the next audit process.

Suicides occurring by jumping/ falling from a high-rise residential building (regardless of whether the individual lived in that location) are of particular interest. There is a growing recognition in the city that many vulnerable individuals may reside in these buildings.

### References

1: Department of Health (2011) Consultation on preventing suicide in England: A cross-government outcomes strategy to save lived.

2: Leigh-Hunt, N. et al (2012) Audit of Suicides and Undetermined Deaths in Leeds 2008-2010. Leeds City Council

3: Conway et al. (2012) The Henry Ford Health System No Harm Campaign: A Comprehensive Model to Reduce Harm and Save Lives. *The Joint Commission Journal on Quality and Patient Safety* **38** 318-327

4: Knapp, M., McDaid, D & Parsonage, M. (eds) (2011) Mental health promotion and mental illness prevention: Chapter 13 – the economic case. London: Department of Health.

5: Pitman, A. et al (2014) Effects of suicide bereavement on mental health and suicide risk. *The Lancet Psychiatry.* **1** 86-94

6: Public Health England (2015) Identifying and responding to suicide clusters and contagion. A practice resource.

7: Public Health England (2014). Guidance for developing a local suicide prevention action plan.

8: Public Health England (2015) Preventing suicides in public places. A practice resource.

9: Public Health England (2015) Preventing suicide: lesbian, gay, bisexual and trans young people.

10: The All-Party Parliamentary Group on Suicide and Self-Harm Prevention (2015) Inquiry into Local Suicide Prevention Plans in England

11: Annual Report of the Chief Medical Officer 2013 Public Mental Health Priorities: Investing in the Evidence

12: Department of Health (2015) Improving outcomes and supporting transparency – Updates to PHOF: Summary of changes to technical specifications of public health indicators, December 2015

13: Office for National Statistics (2016) Statistical Bulletin:Suicides in the United Kingdom: 2014 registrations

http://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/de aths/bulletins/suicidesintheunitedkingdom/2014registrations accessed 20/09/2016

14: Leeds City Council (2016) Best Council Plan 2015-20 Update for 2016/17

15: Leeds City Council (2016) Leeds Health and Wellbeing Strategy 2016-2021

16: Rezaeian, M. et al (2005) The ecological association between suicide rates and indices of deprivation in English local authorities. *Social Psychiatry and Psychiatric Epidemiology* **40** 785-791

17: Gunnell, D. et al (1995) Relation between parasuicide, suicide, psychiatric admissions, and socioeconomic deprivation. *BMJ* **311** doi: http://dx.doi.org/10.1136/bmj.311.6999.226

18: Barr, B. et al. (2012) Suicides associated with the 2008-10 economic recession in England: time trend analysis. *British Medical Journal* 345 doi: 10.1136/bmj.e5142

19: Haw et al. (2015) Economic recession and suicidal behaviour: Possible mechanisms and ameliorating factors. *International Journal of Social Psychiatry* **61** 73-81

20: Health and Social Care Information Centre (2009) Adult psychiatric morbidity in England, 2007. *Results of a household survery* 

21: Zalsman et al (2016) Suicide prevention strategies revisited: 10-year systematic review. *The Lancet Psychiatry* **3(7)** 646-659

22: Reinstatler, L. and Youssef, N.A. (2015) Ketamine as a potential treatment for suicideal ideation: a systematic review of the literature. *Drugs R D* **15:** 37-43

23:Cipriani et al. (2013) Lithium in the prevention of suicide in mood disorders: Updated systematic review and meta-analysis *British Medical Journal* **346** doi.org/10.1136/bmj.f3646

24: Donker et al. (2013) Suicide prevention in schizophrenia spectrum disorders and psychosis: a systematic review. *BMC Psychology* **1** 6

25: Pirkis, J. et al (2015) Interventions to reduce suicidesa t suicide hotspots: A systematic review and meta-analysis. *The Lancet Psychiatry* **25(5)** 467-482

26: Stack, S,. (2003) Media Coverage as a risk factor in suicide. *Journal of Epidemiology and Community Health* **57(4)** 238-240

27: Leeds City Council and The National Union of Journalists: Covering Suicide Brief guidelines for those working in or with the news media. <u>http://www.leeds.gov.uk/docs/CoveringSuicide.pdf</u>

28: Wertheimer, A. (2002) A Special Scar London: Routledge

29: World Health Organisation & International Association for Suicide Prevention. (2008) *Preventing Suicide. How to start a Survivors' Group.* [online] Available from: <a href="http://www.who.int/mental\_health">http://www.who.int/mental\_health</a>

## Appendix

Age Group	2008	2009	2010	2011	2012	2013	2008- 2010	2011- 2013
0-4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5-9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10-14	0.0	0.0	0.0	2.5	0.0	0.0	0.0	0.9
15-19	8.4	2.0	8.0	4.0	3.9	8.1	6.1	5.3
20-24	13.3	4.1	5.6	8.4	5.4	5.3	7.7	6.3
25-29	14.5	8.1	6.6	15.2	8.6	10.3	9.8	11.4
30-34	8.0	3.9	13.3	15.0	14.7	27.1	8.5	19.0
35-39	22.9	19.5	9.9	16.2	18.7	6.3	17.5	13.8
40-44	7.7	25.0	15.5	21.3	21.5	13.8	16.1	18.9
45-49	16.9	4.1	20.2	21.9	17.9	13.9	13.8	17.9
50-54	9.7	14.4	16.4	6.8	15.7	15.3	13.5	12.7
55-59	5.1	13.0	5.3	13.2	7.8	12.7	7.8	11.2
60-64	5.3	5.2	12.7	2.5	21.2	10.9	7.8	11.4
65-69	0.0	3.5	3.4	3.3	12.0	2.9	2.3	6.1
70-74	7.5	11.2	0.0	3.9	11.9	3.9	6.3	6.5
75-79	4.6	9.2	4.6	0.0	4.5	8.8	6.1	4.5
80-84	0.0	6.3	6.2	12.3	6.1	6.1	4.2	8.1
85 Plus	0.0	7.0	6.9	6.9	0.0	6.7	4.7	4.5

 Table 22: Age specific rates for the years 2008-13 per 100,000

Age	Number	Percentage
10-19	9	4.2%
20-29	34	16.0%
30-39	51	23.9%
40-49	56	26.3%
50-59	30	14.1%
60-69	19	8.9%
70-79	8	3.8%
80-89	5	2.3%
90-99	1	0.5%

 Table 23: Age Distribution – Numbers and Percentages for 2011-13

Ethnicity	Number	Percentage
African	7	3.3%
Asian	3	1.4%
Irish	4	1.9%
Mixed African/European	1	0.5%
Mixed British/Asian	3	1.4%
Non-white British	2	0.9%
Other British	1	0.5%
Other European	8	3.8%
Unknown	8	3.8%
White	2	0.9%
White American	1	0.5%
White/Caucasian British	173	81.2%

Table 24: Ethnicity – Numbers and Percentages for the 2011-13 audit

Gender	White British	Confidence Interval	Black and Minority Ethnic Group	Confidence Interval
Male	23.0	19.5-27.1	9.6	6.2-14.2
Female	4.1	2.8-6.0	2.3	0.9-5.1

Table 25: Rates of suicide amongst different gender and ethnicity groups

Marital Statu	IS			Number	Percentage
Single, Divo	rced or separate	d		147	69%
Married, partnership	cohabitating	or	civil	59	28%

Table 26: Single, divorced or separated individuals vs married cohabitating or civil partnership – Numbers and percentages

	2008-2010		2011-2013	;
Postcode District	Number	Percentage	Number	Percentage
LS1	2	1.1%	1	0.50%
LS2	2	1.1%	1	0.50%
LS3	1	0.6%	1	0.50%
LS4	1	0.6%	6	2.80%
LS5	3	1.7%	0	0.00%
LS6	7	3.9%	5	2.30%
LS7	8	4.5%	4	1.90%
LS8	12	6.7%	12	5.60%
LS9	12	6.7%	13	6.10%
LS10	8	4.5%	18	8.50%
LS11	17	9.5%	12	5.60%
LS12	21	11.7%	18	8.50%
LS13	10	5.6%	13	6.10%
LS14	14	7.8%	10	4.70%
LS15	12	6.7%	8	3.80%
LS16	11	6.1%	13	6.10%
LS17	3	1.7%	9	4.20%
LS18	3	1.7%	6	2.80%
LS19	3	1.7%	7	3.30%
LS20	1	0.6%	3	1.40%
LS21	3	1.7%	7	3.30%
LS22	1	0.6%	5	2.30%
LS23	2	1.1%	2	0.90%
LS24	0	0.0%	1	0.50%

LS25	3	1.7%	3	1.40%
LS26	4	2.2%	6	2.80%
LS27	11	6.1%	8	3.80%
LS28	2	1.1%	8	3.80%
LS29	0	0.0%	1	0.50%
WF3	2	1.1%	6	2.80%
BD11	0	0.0%	1	0.50%
BD4	0	0.0%	1	0.50%
NFA	-	-	3	1.40%
Unknown	-	-	1	0.50%

 Table 27: Postcode Districts – Numbers and percentages 2008-10 and 2011-13

Postcode District	2008-2010: Rate of suicide per 100,000 (Confidence interval)	2011-2013 Rate of suicide per 100,000 (Confidence interval)	Rate Ratio of 2011-13 rate compared to 2008-10. • Increase in suicides • Decrease in suicides
BD11	None recorded	6.4 (0.2, 35.9)	No values for 08/10
BD4	None recorded	20.3 (0.5, 113.1)	No values for 08/10
LS1	44.2 (5.4 , 159.6)	12.7 (0.3, 70.7)	0.3
LS10	7.9 (3.4, 15.6)	16.8 (9.9, 26.5)	2.1
LS11	16.6 (9.7, 26.6)	11.4 (5.9, 19.9)	0.7
LS12	18.8 (11.6, 28.7)	15.6 (9.2, 24.7)	0.8
LS13	9.4 (4.5, 17.2)	12.4 (6.6, 21.2)	1.3
LS14	13.4 (7.3, 22.4)	9.5 (4.6, 17.5)	0.7
LS15	12.4 (6.4, 21.7)	8.3 (3.6, 16.4)	0.7
LS16	10.3 (5.1, 18.4)	12.2 (6.5, 20.9)	1.2
LS17	2.5 (0.5, 7.2)	7.3 (3.4, 13.9)	3.0
LS18	4.7 (1, 13.6)	9.3 (3.4, 20.3)	2.0
LS19	5.3 (1.1, 15.5)	12.6 (5, 25.9)	2.4
LS2	5.7 (0.7, 20.7)	2.6 (0.1, 14.7)	0.5
LS20	3.0 (0.1, 16.7)	8.7 (1.8, 25.5)	2.9
LS21	5.7 (1.2, 16.7)	13.5 (5.4, 27.8)	2.4
LS22	2.4 (0.1, 13.1)	11.8 (3.8, 27.6)	5.0
LS23	7.5 (0.9, 27)	7.2 (0.9, 26.1)	1.0
LS24	0.00	22.2 (0.6, 123.8)	No suicides recorded in 08- 10
LS25	3.6 (0.7, 10.5)	3.6 (0.7, 10.6)	1.0
LS26	4.5 (1.2, 11.4)	6.7 (2.5, 14.5)	1.5
LS27	10.7 (5.3, 19.2)	7.7 (3.3, 15.2)	0.7
LS28	1.7 (0.2, 6.1)	6.6 (2.9, 13)	3.9

LS29	0.00	15.6 (0.4, 86.8)	No suicides recorded in 08- 10
LS3	5.7 (0.1, 31.5)	5.6 (0.1, 31.3)	1.0
LS4	2.9 (0.1, 16.3)	17.5 (6.4, 38.1)	6.0
LS5	8.9 (1.8, 26.1)	0	0.0
LS6	5.3 (2.1, 10.9)	3.8 (1.2, 8.9)	0.7
LS7	8.9 (3.8, 17.5)	4.3 (1.2, 11)	0.5
LS8	8.7 (4.5, 15.2)	8.5 (4.4, 14.8)	1.0
LS9	11.1 (5.7, 19.4)	11.4 (6.1, 19.5)	1.0
WF3	2.9 (0.4, 10.6)	8.7 (3.2, 18.8)	2.9

Table 28: Rates, confidence intervals and rate ratios for suicides per postcode district, 2008-10 and 2011-13

	2008-2010 Audit		2011-2013 Audit	
	Number	Percentage	Number	Percentage
Hanging/ strangulation	108	60.3%	125	58.7%
Poisoning	44	24.6%	35	16.4%
Jumping/Falling	7	3.9%	19	8.9%
Asphyxia	6	3.4%	3	1.4%
Drowning	4	2.2%	5	2.3%
Firearms	3	1.7%	2	0.9%
Cutting or stabbing	3	1.7%	9	4.2%
Burning	-	-	3	1.4%
Carbon monoxide inhalation	-	-	4	1.9%
Other	4	2.2%	6	2.8%
Helium Inhalation	-	-	2	0.9%

Table 29: Method of death – Number and Percentage 2008-10 and 2011-13

Locatio	n		2008-2010 Audit		2011-2013 Audit	
			Numbe r	Percentag e	Numbe r	Percentag e
Public			38	21.2%	55	26.8%
Own home	home/someone	else's	138	77.1%	156	73.2%
Unknow	/n		3	1.7%	0	0.0%

Table 30: Location of death public vs private – Numbers and Percentages 2008-10 and 2011-13

	Number	Percentage
Employed/ self employed	74	34.7%
Housewife/ house husband	1	0.5%
Retired	26	12.2%
Student	9	4.2%
Caring for home/ family	3	1.4%
Long term sick or disabled	13	6.1%
Unemployed	84	39.4%
Not known	3	1.4%

Table 31: Employment Status – Numbers and percentages

Reason for last contact	General Practice		Accident and Emergency/ Secondary care	
	Number	Percentag e	Number	Percentag e
Physical Health Problem	90	42.3%	15	7%
Mental Health Problem	58	27.2%	25	11.7%
Both mental and physical health problem	31	14.6%	12	5.6%
Unknown	34	16%	161	75.5%

 Table 32: Reason for last contact with Primary Care and Accident and Emergency – Numbers

 and Percentages

	Number	Percentage
Anxiety	49	23%
Depression	117	54.90%
Bipolar Disorder	11	5.16%
Schizophrenia/ psychosis	8	3.80%
No history of Mental Illness	64	30%

Table 33: History of mental illness – Numbers and percentages