

# Deaths from suicide and injury of undetermined intent in Derby City and Derbyshire County

[Deaths registered in 2017]

This short report provides information on deaths registered in 2017 from suicide and injury of undetermined intent in people living in Derby City and Derbyshire County




**Population Knowledge &  
Intelligence Team**

# Deaths from suicide and injury of undetermined intent in Derby City and Derbyshire County

2018 Report

## VERSION CONTROL

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This report is a resource to support professionals working to prevent suicide. If you are looking for personal support, we would invite you to make a GP appointment, ring NHS 111 or if you feel it is an emergency to contact 999. Alternatively, the Samaritans offer a listening service 116 123.

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# 1 INTRODUCTION

The aim of this report is to present the information from descriptive analysis of the most recent data on deaths from suicide and injury of undetermined intent in Derby City and Derbyshire County. It is intended to describe the patterns for the deaths registered in 2017, including benchmarking against national trends, and to inform further analysis for the Derby and Derbyshire Suicide Prevention Partnership Forum. Previous reports are available on the Derbyshire Observatory.<sup>1</sup>

The report focusses on data for residents of Derby City and Derbyshire County. Derby City is a Unitary Authority covering an urban area with an estimated population of 257,034<sup>2</sup>. The city has areas that experience significant levels of socioeconomic deprivation and poorer health outcomes compared with East Midlands and England<sup>3</sup>. Derbyshire County extends over a large rural area, with a population of 791,966<sup>2</sup> resident in a mix of market towns, villages, and more rurally. Many of the indicators of health for Derbyshire County are similar to the East Midlands and England averages, although there is notable variation between the districts, with areas such as Bolsover and Chesterfield experiencing higher levels of socioeconomic deprivation. Further descriptions of the populations and health needs are available in the JSNAs and Health Profiles.<sup>4</sup>

# 2 METHODOLOGY

This report describes the data for Derby City and Derbyshire County residents pertaining to deaths from suicide and injury of undetermined intent which were registered in 2017. If the death of a resident occurred outside of the residential area, it will still be included. The data within this report are sourced from the Primary Care Mortality Database supplied by NHS Digital under a Data Sharing Agreement<sup>5</sup>.

The data analysis for this report follows the methodology of previous reports, and aligns with the methodology used by the Office of National Statistics. The Primary Care Mortality Database data is extracted from death certificates. In cases of suicide and injury of undetermined intent there is often a delay between the date of death and date of registration due to the length and timing of Coroners' Inquest; this report is specifically for deaths registered in 2017. The categorisation of a 'Death from Suicide and Injury of Undetermined intent' is where the primary cause of death is due to one of the following codes from ICD10 X60-84 (age 10+ only), Y10-Y34 (age 15+ only). Of note, only deaths of injury of undetermined intent in adults age 15 years and over are included. Age standardised rates have been calculated using 10+ years as the denominator, and are presented per 100,000 population.

It is generally acknowledged that official records may underestimate the exact numbers and rates of suicides; coroners must establish the case 'beyond reasonable doubt' to ascribe a verdict of suicide, and ascertaining intention to die is not possible in many cases. Deaths from injury of undetermined intent are included in this dataset where intent in the circumstances of the death was unclear. Furthermore, coroners may return narrative verdicts, and it is noted that where these are 'hard-to-code', the death may be registered as an accidental death and not included in the count of deaths from suicide and injury of undetermined intent.

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<sup>1</sup> See: <https://observatory.derbyshire.gov.uk/life-expectancy-and/suicides/>

<sup>2</sup> <https://www.ons.gov.uk/peoplepopulationandcommunity/populationandmigration/populationestimates>

<sup>3</sup> <https://fingertips.phe.org.uk/profile/public-health-outcomes-framework>

<sup>4</sup> For Derby City, see <https://info4derby.derby.gov.uk/>; for Derbyshire, see <https://observatory.derbyshire.gov.uk/jsna/>

<sup>5</sup> <https://digital.nhs.uk/services/primary-care-mortality-database>

## 3 DATA

### 3.1 Numbers of deaths from suicide and injury of undetermined intent

The number of deaths by suicide and injury of undetermined intent registered in 2017 totalled 10 for Derby City and 49 for Derbyshire County. Table 1 shows the number of deaths for both areas by the underlying cause of death. For deaths registered in 2017, 32% were deaths from injury of undetermined intent, where the intent in the circumstances of the death was unclear.

**Table 1: Numbers of deaths registered in 2017**

Area	Number of deaths from suicide	Number of deaths from injury of undetermined intent	Total number of deaths from suicide and injury of undetermined intent
Derby City	9	1	10
Derbyshire County	31	18	49
Total	40 (68%)	19 (32%)	59

Source: Primary Care Mortality Database

The number of deaths by suicide and injury of undetermined intent is monitored annually. Table 2 shows how the total numbers of deaths registered in 2017 for Derbyshire County and Derby City compares with previous years. The number of deaths registered in 2017 was lower than the preceding three years for both Derbyshire County and Derby City.

**Table 2: Numbers of deaths from suicide and injury of undetermined intent by year of registration**

Area	2011	2012	2013	2014	2015	2016	2017
Derby City	21	20	20	25	19	18	10
Derbyshire County	50	56	46	86	83	55	49
Total	71	76	66	111	102	73	59

Source: Primary Care Mortality Database

The number of deaths by suicide and injury of undetermined intent is reported by the year in which the death was registered. Table 3 presents the data comparing the year the death occurred with the year that the death was registered. The majority (95%) of deaths registered in 2017 were for deaths that occurred in 2016 and 2017.

**Table 3: Comparison between the year that the death was registered, with the year that death occurred, for deaths from suicide and injury of undetermined intent**

Year Death Registered	Total number of deaths	Percentage of Deaths by the Year Death Occurred								
		2010	2011	2012	2013	2014	2015	2016	2017	Total
2013	66	3%	5%	52%	41%	-	-	-		100%
2014	111	-	0%	5%	57%	38%	-	-		100%
2015	102	-	1%	-	5%	52%	42%	-		100%
2016	73	-	1%	-	1%	3%	48%	47%		100%
2017	59						5%	59%	36%	100%

Source: Primary Care Mortality Database

In Derbyshire County 40% of deaths from suicide or injury of undetermined intent registered in 2017 occurred in 2017. In Derby City this figure was slightly lower at 35%, see table 4.

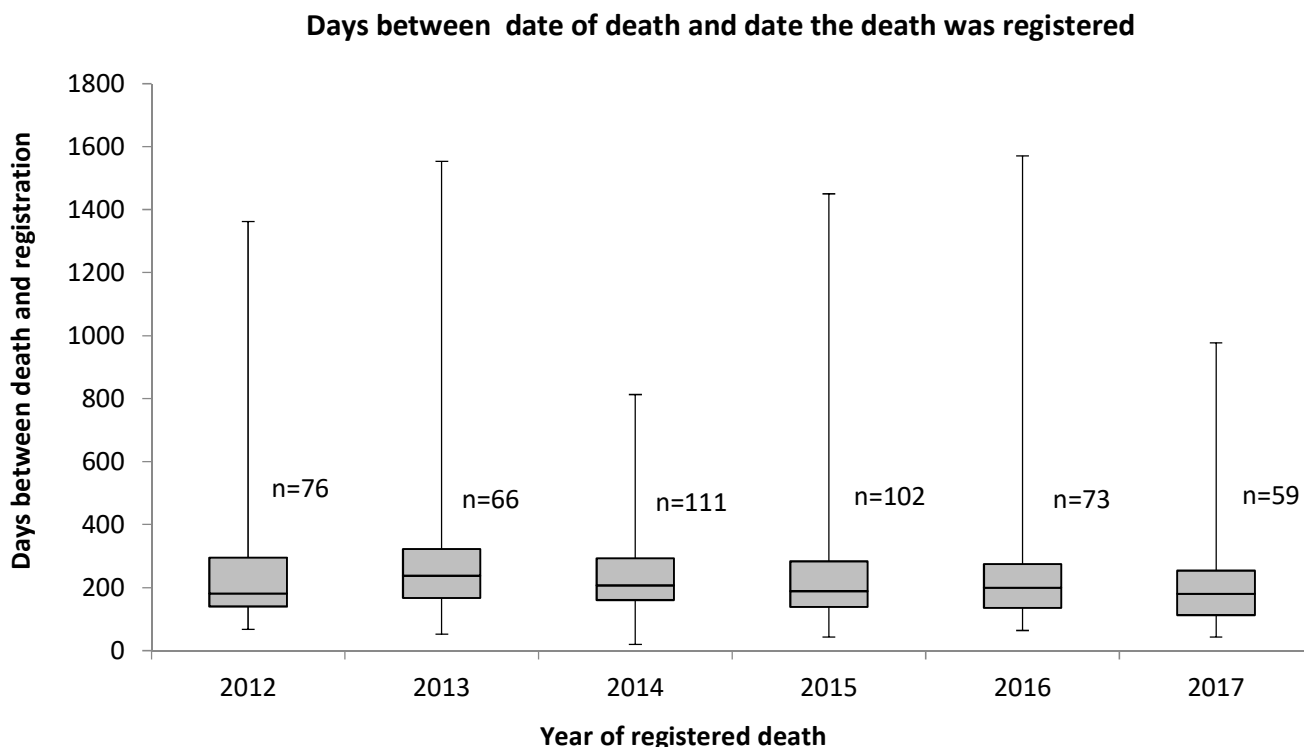
**Table 4: Deaths registered in 2017 in Derby City and Derbyshire County by year of death**

Year of Death	Derby City	Derbyshire County
2015	10%	4%
2016	50%	61%
2017	40%	35%

Source: Primary Care Mortality Database

For deaths by suicide and injury of undetermined intent registered in 2017, the median time difference between date of death and date of registration was 181 days, with a range from 43 days to 977 days (Figure 1). This is similar to the median number of days in previous years, and there have been no significant changes in the time lag between date of death and date of death registration observed in this time period.

**Figure 1: Time interval in number of days between the date of death and date of death registration for deaths from suicide and injury of undetermined intent**



Horizontal line shows median time, box shows interquartile range, vertical lines show range.  
Source: Primary Care Mortality Database

An analysis by *date of death* (based on 3 year pooled 2015-17 registered deaths) shows the highest number occurred in January, accounting for 13% of total deaths. November was the second highest month, whilst the months with the lowest number of deaths were February (5%) and March (6%), see figure 2.

**Figure 2: Month when death occurred for deaths registered in 2015, 2016 and 2017.**



Source: Primary Care Mortality Database

### 3.2 Rates of deaths from suicide and injury of undetermined intent

The age-standardised rates of deaths from suicide and injury of undetermined intent are presented in Table 5, and displayed in Figure 2. These age-standardised rates allow comparison over time and between areas. The rates are presented as three-year rolling averages to allow for the yearly fluctuations associated with the relatively small numbers of deaths compared to the population size. The error bars in Figure 3 show the 95% confidence intervals around each data point. As these are small numbers, particularly for Derby City, even with pooled year data there is an inherent and important level of uncertainty, such that caution should be taken in interpreting trends.

Overall, there is no statistical difference in the rates between Derby City and Derbyshire County. In Derbyshire County, the 3 year pooled mortality rate for 2015-17 was 8.9 per 100,000. This represents a decline from the observed increase seen in rates across 2012-14 to 2014-16 (though it is not statistically significantly different to previous periods). The recent trend (Figure 3) shows that Derbyshire County had statistically similar rates compared to national and England rates.

In Derby City, the 3 year pooled mortality rate for 2015-17 was 7.3 per 100,000, and although not statistically different, this is the lowest rate since 2001-03. Since 2008-10, the rates for Derby City have remained similar to the England average.

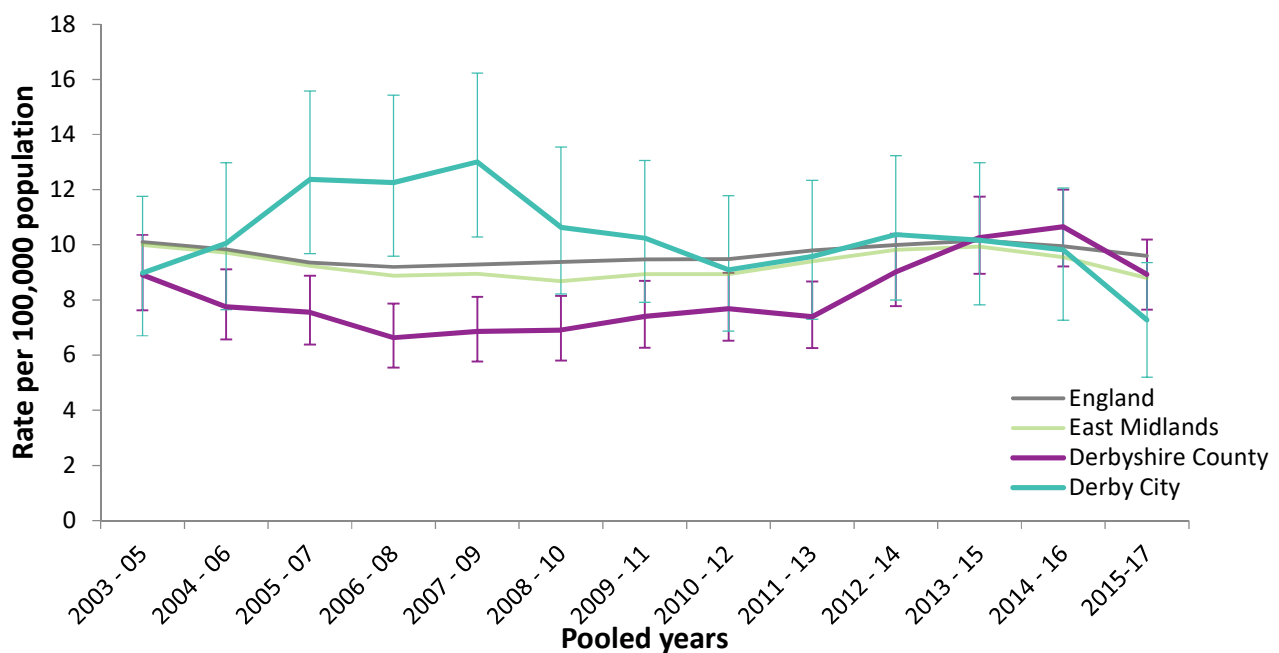
**Table 5: Age-standardised rates of deaths from suicide and injury of undetermined intent per 100,000 population in Derby City and Derbyshire County**

3 Year Pooled period	Derbyshire County			Derby City			England		
	Number	Rate	Confidence intervals	Number	Rate	Confidence intervals	Number	Rate	Confidence intervals
2012 – 2014	189	9.0	(7.8 – 10.4)	66	10.4	(8.0 – 13.2)	14122	10.0	(9.8 – 10.2)
2013 – 2015	216	10.3	(8.9 – 11.7)	65	10.2	(7.8 – 13.0)	14429	10.1	(10.0 – 10.3)
2014 – 2016	225	10.6	(9.3 – 12.1)	63	9.8	(7.5 – 12.6)	14277	9.9	(9.8 – 10.1)
2015 – 2017	187	8.9	(7.7 – 10.3)	47	7.3	(5.3 – 9.7)	13846	9.6	(9.4 – 9.7)

Age Standardised Rates calculated from 2013-15 onwards using revised PHE methodology with 10years+ at the population denominator  
 Source: Public Health Outcomes Indicator Tool

**Figure 3: Longer term trends in age-standardised rates of deaths from suicide and injury of undetermined intent per 100,000 population compared with regional and national rates.**

**Trend in age standardised rate for deaths from suicide and injury of undetermined intent**



Error bars represent 95% confidence Intervals for the rates.  
 Source: Public Health Outcomes Indicator Tool



### 3.3 Deaths from suicide and injury of undetermined intent by demographic characteristics

#### 3.3.1 Gender

There is a clear national pattern with higher numbers of deaths from suicide and injury of undetermined intent occurring in men than women. Derbyshire County mirror this pattern, with rates of deaths in females statistically significantly lower than the rates in males, shown in Table 6.

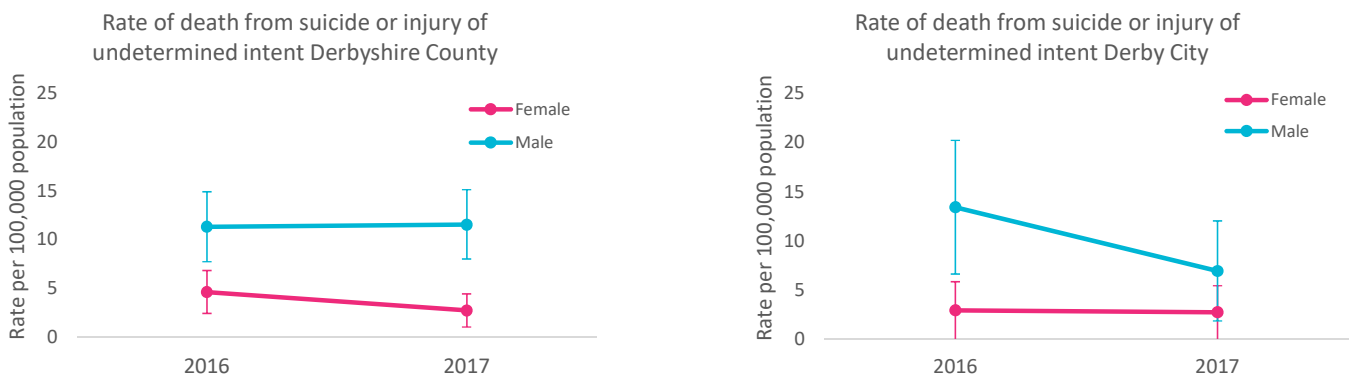
**Table 6: Deaths from suicide and injury of undetermined intent registered in 2017 by gender**

Gender	Derbyshire County			Derby City		
	Number	Rate	Confidence intervals	Number	Rate	Confidence intervals
Males	39 (79.6%)	11.5	(7.9 – 15.0)	7 (70%)	6.9	(1.8 – 12.0)
Females	10 (20.4%)	2.7	(1.0 – 4.4)	3 (30%)	2.7	(0– 5.8)

Source: Primary Care Mortality Database

Previously, the rate of deaths has been significantly higher for males than females in Derby City. However, in 2017 the number of registered deaths for males decreased and was statistically similar to females, see figure 4.

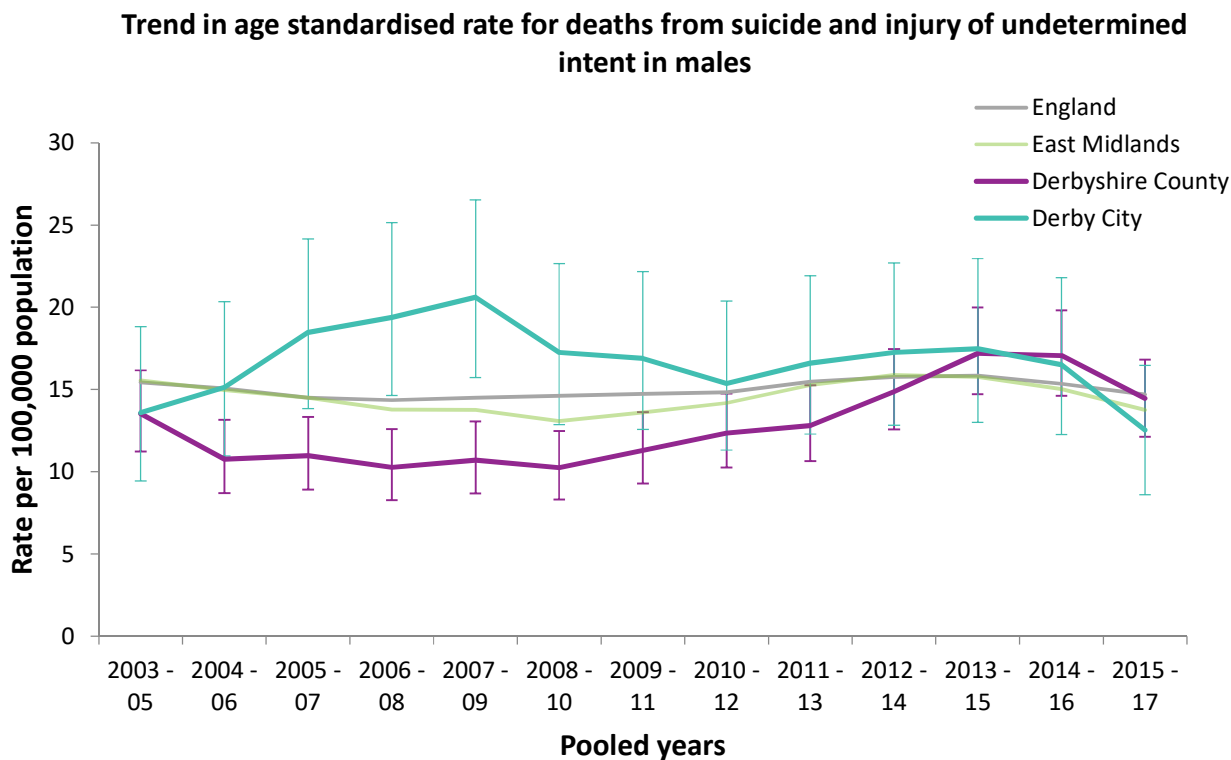
**Figure 4: Rate of deaths by suicide and injury of undetermined intent for females and males**



Source: Primary Care Mortality Database

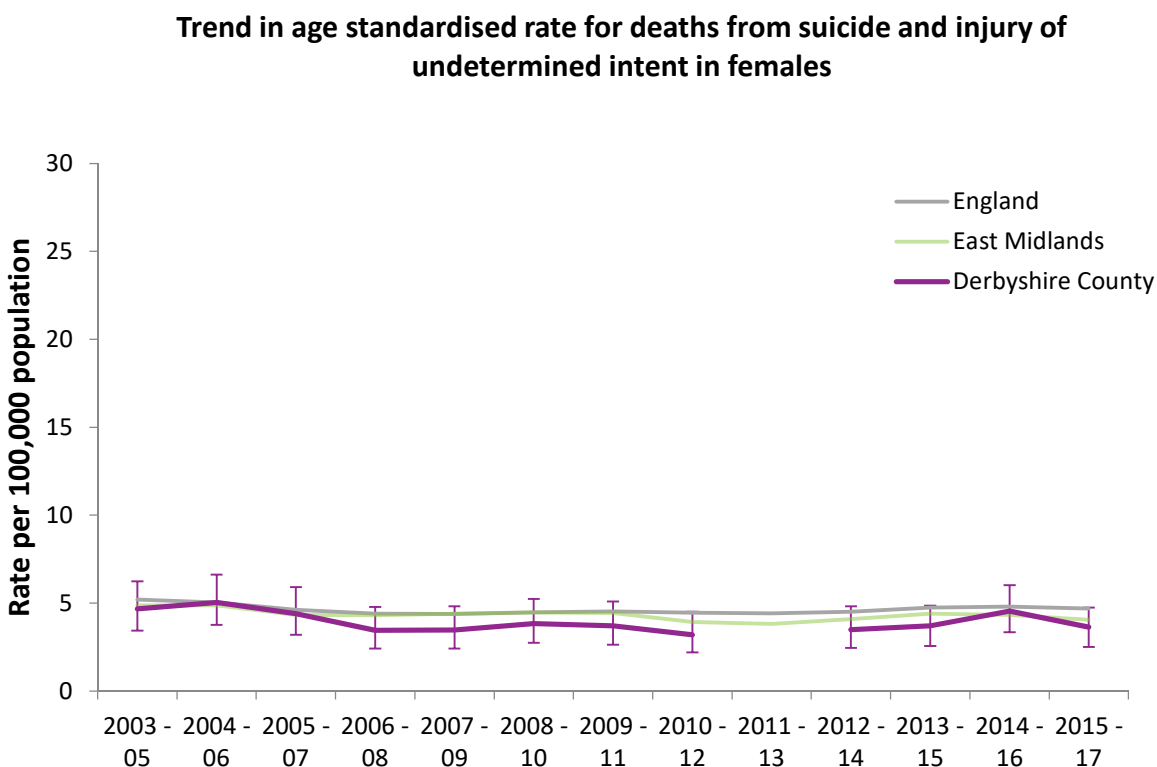
Figures 5 and 6 show the trends over time in the rates of deaths from suicide and injury of undetermined intent in males and females. These are 3 year pooled rates which are more stable to allow comparisons over time. An age standardised rate for deaths in females in Derby City from suicide and injury of undetermined intent cannot be reliably calculated due to small numbers; similarly the rates for females in Derbyshire County in 2011-13 could not be calculated (Figure 6). There is no statistical difference in the rates for males between Derbyshire County and Derby City, and both areas report rates similar to the gender specific national rates.

**Figure 5: Longer term trends in age-standardised rates of deaths from suicide and injury of undetermined intent per 100,000 population in males**



Error bars represent 95% confidence Intervals for the Rates.  
Source: Public Health Outcomes Indicator Tool

**Figure 6: Longer term trends in age-standardised rates of deaths from suicide and injury of undetermined intent per 100,000 population in females**

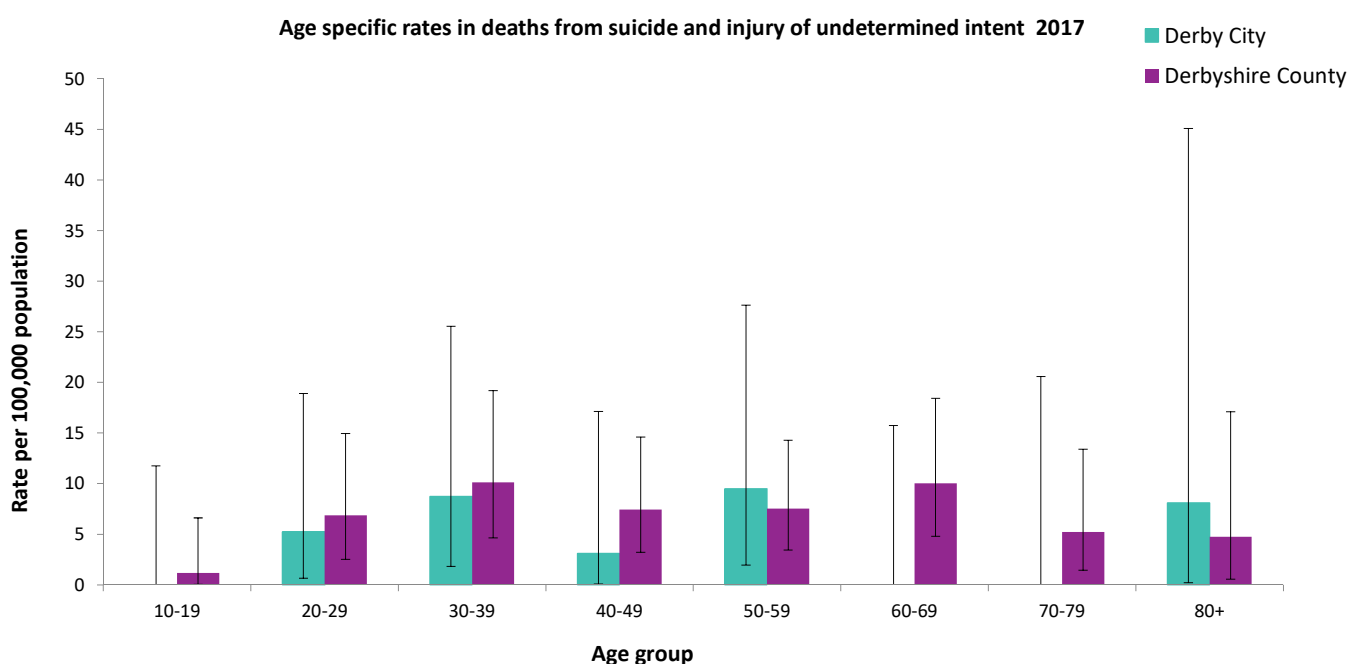


Error bars represent 95% confidence Intervals for the Rates.  
Source: Public Health Outcomes Indicator Tool  
Data for Derby City not calculated due to small numbers

### 3.3.2 Age

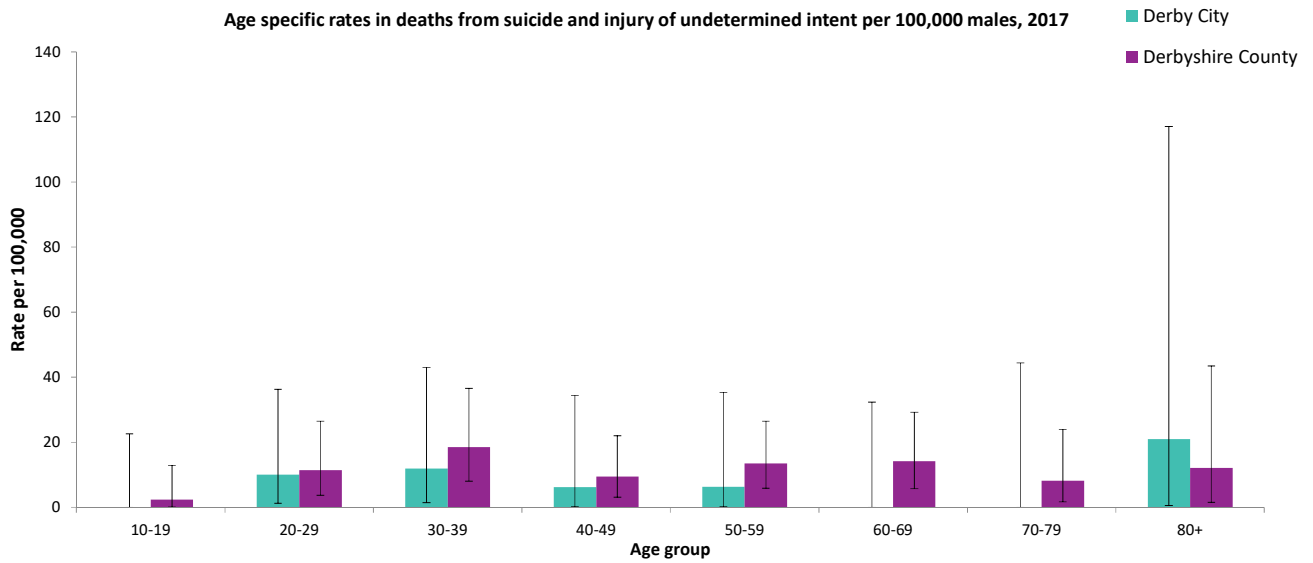
For deaths registered in 2017, Figure 7 shows the age specific rates of deaths from suicide and injury of undetermined intent. In Derbyshire County, the highest rate of deaths was in the 30-39 year age group, although rates did not differ statistically by age-group. In Derby City, the highest rate of deaths was in the 50-59 year age group; again the rates between age-groups did not differ significantly. Derbyshire County and Derby City show a similar pattern; this aligns with national patterns of a peak in mid-life age groups. The pattern across age groups is primarily influenced by the data for the deaths of men (Figure 8), as the number of deaths for women is small (Figure 9).

**Figure 7: Rates in deaths from suicide and injury of undetermined intent for deaths registered in 2017, by age group**



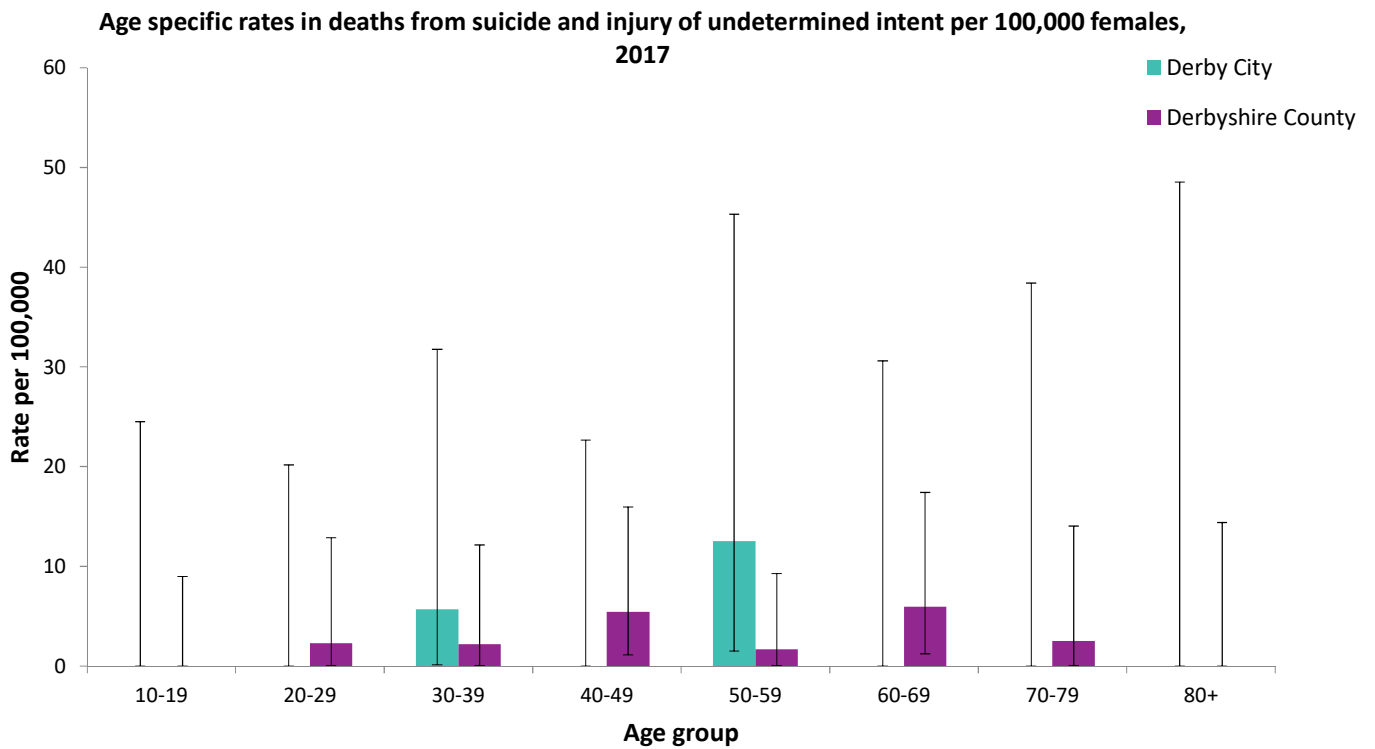
Error bars represent 95% Confidence Intervals  
Source: Primary Care Mortality Database

**Figure 8: Rates in deaths from suicide and injury of undetermined intent for deaths registered in 2017, by age group for males**



Error bars represent 95% Confidence Intervals  
Source: Primary Care Mortality Database

**Figure 9: Rates in deaths from suicide and injury of undetermined intent for deaths registered in 2017, by age group for females**

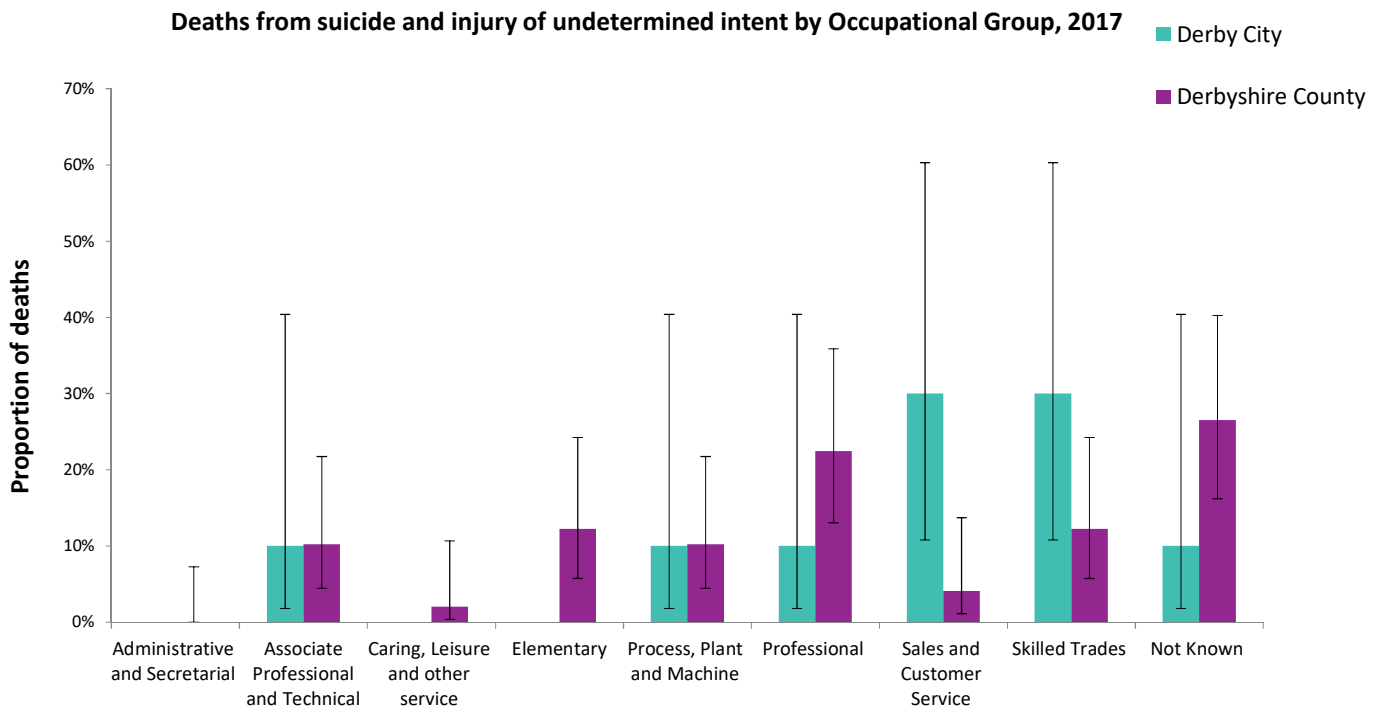


Error bars represent 95% Confidence Intervals  
Source: Primary Care Mortality Database

### 3.3.3 Occupational group

Occupational group is considered as an indicator of socioeconomic status. Where data has been recorded in the death registration, this has been assigned within the Office of National Statistics (ONS) standard occupational classifications<sup>6</sup>. Figure 10 shows the proportions of suicide and injury of undetermined intent by occupational groups, for deaths registered in 2017. Of note, these are the proportions of the deaths that were registered, and are not rates adjusted to the baseline numbers of each occupational group in the population.

**Figure 10: Proportion of deaths registered in 2017 from suicide and injury of undetermined intent by occupational classification group**



Error bars represent 95% Confidence Intervals  
Source: Primary Care Mortality Database

The highest percentage of the deaths registered in 2017 for Derbyshire County and Derby City were for individuals with ‘Professional occupations’, accounting for 20% of all registered deaths from suicide and injury of undetermined intent. Professional occupations include teaching and educational professionals and nursing and midwifery professionals. Of note, the occupational group was not known or not recorded for 14 deaths from suicide and injury of undetermined intent registered in 2017 comprising of 10% of deaths in Derby City, and 27% of deaths in Derbyshire County.

<sup>6</sup> <https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc>

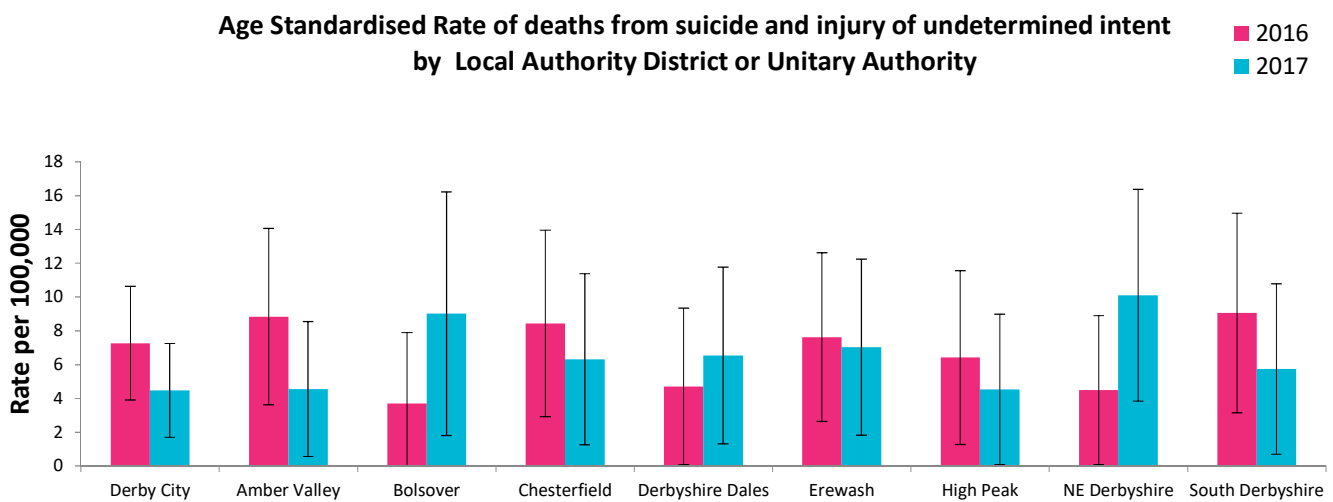
### 3.4 Deaths from suicide and injury of undetermined intent by geographical area

The Primary Care Mortality Database includes the usual resident address for registered deaths allowing analysis of the data by geographical area.

#### 3.4.1 District

Figure 11 shows the rates for deaths from suicide and injury of undetermined intent registered in 2017, compared with rates for deaths registered in 2016. There were no statistically significant differences in the rate of deaths from suicide and injury of undetermined intent across the Districts for 2017 compared with 2016, and the rates between the areas remain similar. The highest rates for deaths registered in 2017 were in North East Derbyshire (10.1 per 100,000), Bolsover (9.0 per 100,000) and Erewash (7.0 per 100,000). The lowest rates registered in 2017 were in Derby City (4.5 per 100,000) followed by High Peak (4.5 per 100,000) and Amber Valley (4.6 per 100,000).

**Figure 11: Rates of registered deaths from suicide and injury of undetermined intent by local authority district**

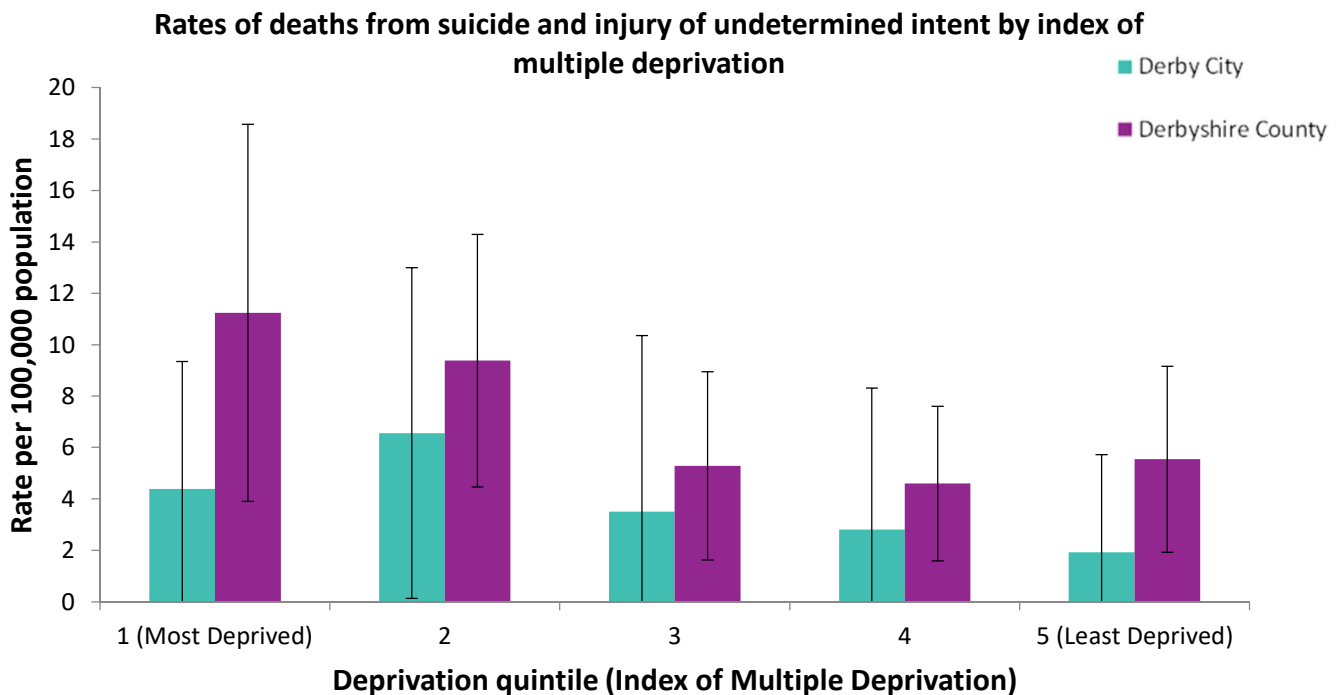


Error bars represent 95% Confidence Intervals  
Source: Primary Care Mortality Database

#### 3.4.2 Deprivation

An analysis of the data on deaths from suicide and injury of undetermined intent by lower super output area (a population of approximately 1500 people) was compared with Index of Multiple Deprivation scores, ranked in quintiles. Figure 12 shows the rate of deaths registered in 2017 for Derbyshire County and Derby City by deprivation quintile. There are no statistically significant differences in the rates of suicide between the quintiles of deprivation in this dataset. There is a high level of uncertainty around the data due to the smaller numbers of deaths used to calculate the rates for each quintile. This is particularly evident by the large error bars.

**Figure 12: Rates of death from suicide and injury of undetermined intent by national deprivation quintile, deaths registered in 2017**

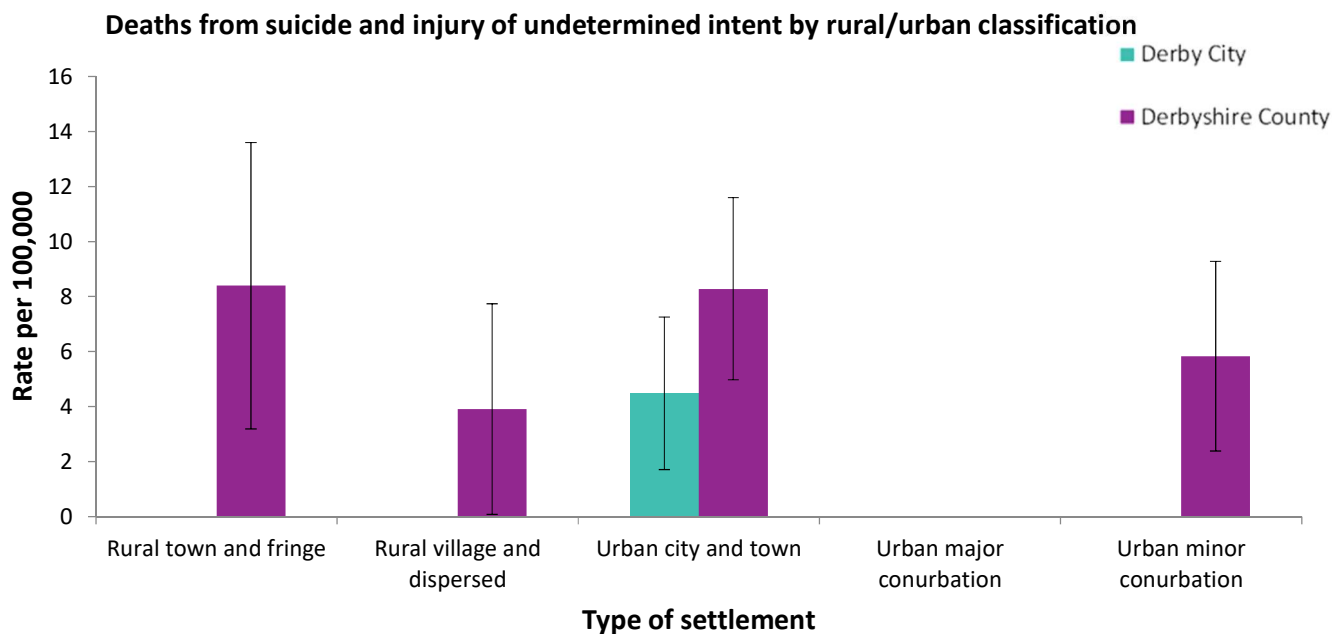


Calculated using Index of Multiple Deprivation 2015. Age standardised rates. Error bars represent 95% Confidence Intervals.  
 Source: Primary Care Mortality Database and Office of National Statistics

### 3.4.3 Rural/Urban Classification

An additional comparison by geographic area is the rurality of an area, such as calculated by applying the ONS classifications to Ordnance Survey mapping categories. The Derby City area is classified fully within the Urban City and Town category, whilst Derbyshire County spans across all settlement types. Figure 13 shows the rates for deaths registered in 2017 across Derby City and Derbyshire County. There were no statistically significant differences in the rates across the settlement types in the county. Of note, in 2017 there were no deaths registered in urban major conurbation settlements, whereas in 2016 this settlement type had the highest rate of the settlement types (15.4 per 100,000).

**Figure 13: Rates of deaths from suicide and injury of undetermined intent by types of rural and urban settlement, for deaths registered in 2017**



Settlement types classified in 2011. Age Standardised Rates. Error bars show 95% Confidence Intervals. Source: Primary Care Mortality Database and Office of National Statistics

### 3.5 Deaths from suicide and injury of undetermined intent by location and means of death

#### 3.5.1 Place of death

Table 7 shows the locations of the deaths registered in 2017 across both Derbyshire County and Derby City. For 2017 17 (29%) of the deaths occurred outside of Home and Hospital settings. The median distance travelled to these outdoor locations from the home residence was 0.7 miles.

**Table 7: Deaths from suicide and injury of undetermined intent registered in 2017 by place of death**

Place of Death	Number (% <sup>3</sup> )
Home	39 (66%)
Hospital <sup>1</sup>	3 (5%)
Railway	3 (5%)
River	2 (3%)
Highway	2 (3%)
Other outdoors <sup>2</sup>	10 (17%)
Total	59

Source: Primary Care Mortality Database; <sup>1</sup> Hospital category does not distinguish between deaths which occurred in hospital following conveyance from another location, or a suicide attempt on the hospital site; <sup>2</sup> Includes parks and open spaces, car parks, commercial buildings, and other residential locations. <sup>3</sup> Percentage does not total 100% due to rounding of values.

Distance between resident home postcode and postcode of place of death was calculated for 3 years pooled data and the median distance travelled was 4.1 miles. The median was calculated rather than the average due to the large range in distance travelled (0 miles - 223 miles). The majority of deaths, 59%, occurred within 5 miles of the resident’s home. A breakdown of the percentage of deaths that occurred outside of the home and the distance travelled can be seen in figure 14.



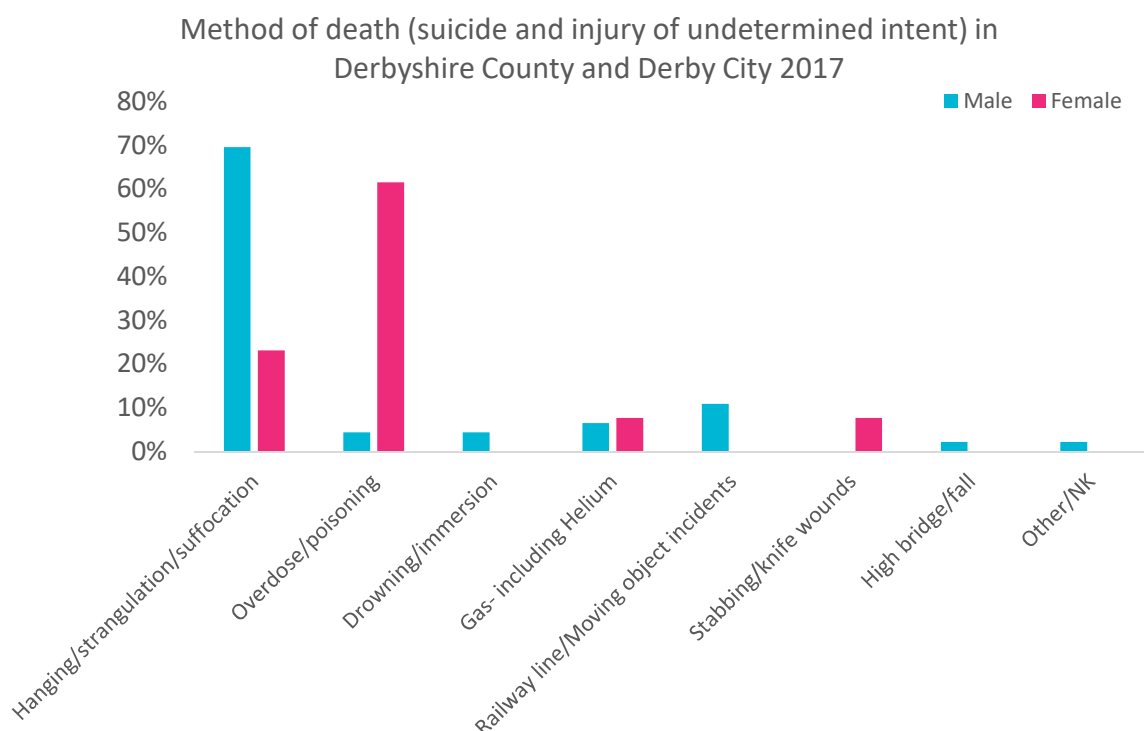
**Figure 14: Distance travelled from resident postcode to place of death postcode for deaths registered in 2015, 2016 and 2017**



### 3.5.2 Method of death

National data and the literature indicate there are differing patterns in the methods of suicide between males and females. Figure 15 shows the proportions of deaths in Derby City and Derbyshire County by gender. Hanging, strangulation or suffocation accounted for the majority of male deaths; 32 of the 46 male deaths (70%) compared to 3 of the 13 female deaths (23%). Overdose / poisoning accounted for the majority of female deaths; 8 of the 13 female deaths (62%) compared to 2 of the 46 male deaths (4%). There were no deaths caused by gunshots or inhalation of fire fumes.

**Figure 15: Method used in death and Injury of undetermined intent Derbyshire County and Derby City, by percentage of deaths registered in 2017**



## 4 KEY FINDINGS

- The number of deaths by suicide and injury of undetermined intent registered in 2017 was 10 for Derby City and 49 for Derbyshire County. 95% of the deaths registered in 2017 occurred in either 2017 or 2016, with a median time interval of 181 days between date of death and date of registration.
- The 3 year pooled age-standardised rate for deaths from suicide and injury of undetermined intent in 2015-17 for Derby City was at its lowest in over 10 years and was similar to the national rate. The age-standardised rate for 2015-17 in Derbyshire County was lower compared to the previous 3 periods and was similar to the national rate.
- Of note for Derby City and Derbyshire County in 2017:
  - 78% of the deaths from suicide and injury of undetermined intent registered in 2017 were males
  - The age specific rate of suicide and injury of undetermined intent was highest in the 30-39 age group and the 50-59 age group, although the rates were statistically similar compared with other age groups
  - A higher percentage of deaths from suicide and injury of undetermined intent were coded to the professional occupational group, though occupation was not known for 24% deaths registered in 2017
  - At district level, the highest rates for deaths registered in 2017 were in North East Derbyshire (10.1 per 100,000), Bolsover (9.0 per 100,000) and Erewash (7.0 per 100,000). The lowest rates registered in 2017 were in Derby City (4.5 per 100,000) followed by High Peak (4.5 per 100,000) and Amber Valley (4.6 per 100,000).
  - There was no clear pattern with rates of death and level of deprivation, particularly in Derby City where there were small numbers, though the highest rates of death was in the second most deprived quintile. In Derbyshire County the rates were similar between quintiles, although there was an indication of slightly higher rates in the most deprived quintiles.
  - 66% of deaths registered in 2017 occurred within the home environment, 29% occurred in other outdoor settings which included parks and open spaces, car parks, commercial buildings and other residential locations
  - 70% of deaths in males were due to hanging, strangulation or suffocation. 62% of the deaths in females were due to overdose/poisoning
- There may be opportunities for further analysis related to this data, including:
  - Comparing the recent data for Derby City and Derbyshire County against the 2017 national and regional trends
  - Considering qualitative data, such as Reports to Prevent Future Deaths from the Courts and Tribunals Judiciary. This could ensure that any relevant recommendations or learning are applied locally
  - Where the rates and patterns of deaths continue to be similar over time, to pool several years of data in order to answer specific analytic questions in regards to demographic and geographical characteristics as well as in regards to place and method of death where there are small numbers in each category for one year of death registrations.