

# **Mortality at age 65 and under in North East Lincolnshire**

An analysis of deaths of North East Lincolnshire residents aged 18 to 65, who died in North East Lincolnshire, between January 2017 and January 2019.

**Public Health, North East Lincolnshire Council**

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# Scope and methodology

This report has been compiled using the records of deaths in North East Lincolnshire, supplied to the local authority's director of public health, by the local authority's registry office.

In total, 498 records met the following criteria and were selected for analysis:

- The death occurred or was registered between January 1<sup>st</sup>, 2017 and December 31<sup>st</sup> 2018
- The death occurred within North East Lincolnshire
- The decedent was a resident of North East Lincolnshire at the time of death
- The decedent was aged 18 to 65 at the time of death

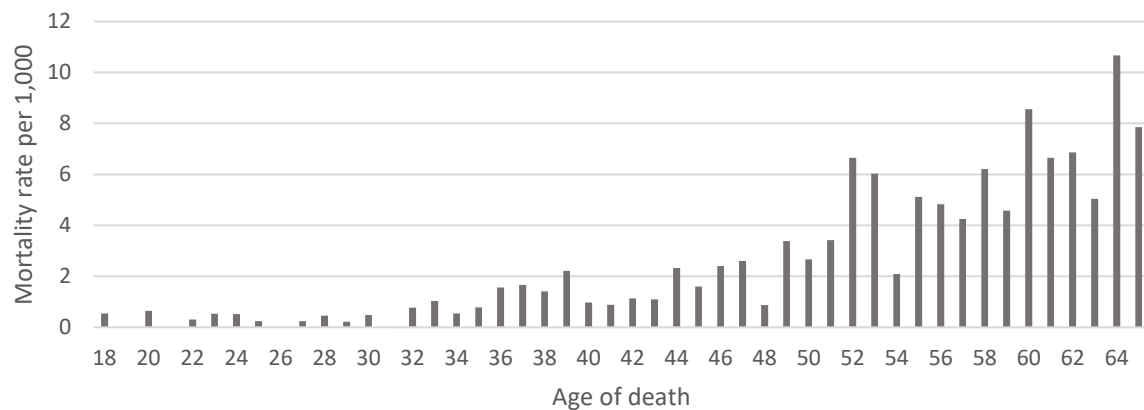
Population figures used for analysis in this report have been obtained from the Office for National Statistics.

Occasionally, figures, rates or percentages may refer to age groups slightly different to the selection of 18-65. This is because some data, particularly around mortality, is not available for individual years of age.

# Age of death

Figure 1 below shows the crude mortality rate by each single year of age. The mortality rate increases towards 65, with a particularly pronounced increase from age 50, with the highest rates coming between the ages of 55 and 65.

**Figure 1 – Crude mortality rate per 1,000 residents by single year of age, ages 0-65, North East Lincolnshire, 2017-2019**

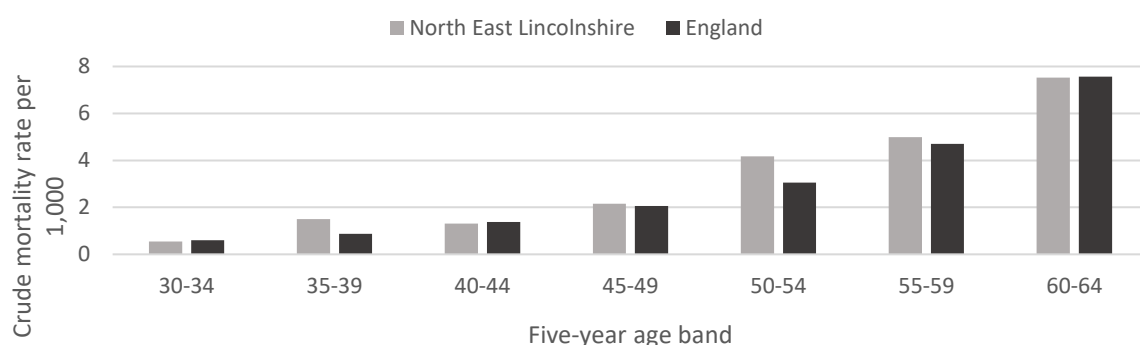


**Source: North East Lincolnshire Council (2019), Office for National Statistics (2018)**

Figure 2 below shows the crude mortality group by quinary age group (i.e. five-year age bands) compared to England, for ages 30 to 64. Due to unavailable data<sup>1</sup> for England, the data covering the two year period covering 2016 and 2017 will be compared to the local data.

As can be seen, in some age groups there is a clearly higher rate in North East Lincolnshire than the England average, such as deaths in those aged 35-39 and 55-59 respectively. However, there is little difference in the other age groups.

**Figure 2 – Crude mortality rate per 1,000 at ages 30-64, by five-year age band, for North East Lincolnshire (2017-2018) and England (2016-2017)**



**Source: North East Lincolnshire Council (2019), Office for National Statistics (2018)**

<sup>1</sup> National data on deaths registered in 2018 was not publicly available at the time of writing

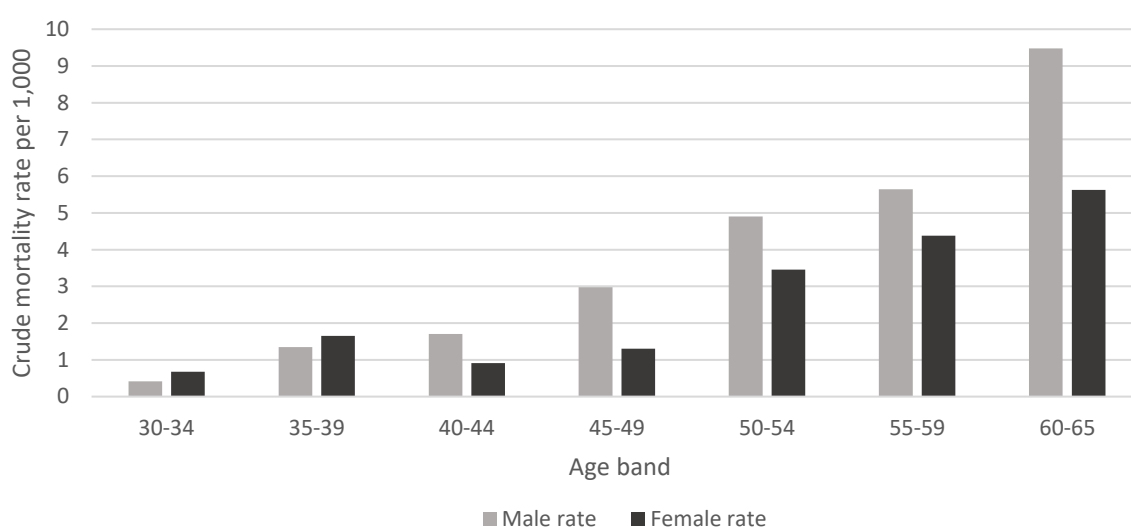
# Gender

Of the 498 deaths included in this analysis, information on the gender of the decedent was available for 497. Of the 497 decedents with gender recorded, 60% were male and 40% were female, which is in-line with the national split, which between 2013 and 2017 was 61% to 39% at ages 15-64<sup>2</sup>.

Figure 3 below shows the crude mortality rate by gender, by age group, for North East Lincolnshire based on the 497 deaths with a recorded gender included in this analysis.

At ages 30-34 and 35-39, there is little difference in the mortality rate, however from 40-44 through to 60-64, the male mortality rate is considerably higher than the female.

**Figure 3 – Crude mortality rate per 1,000 for deaths aged 18-65, by gender, North East Lincolnshire, 2017-2018**



**Source: North East Lincolnshire Council (2019), Office for National Statistics (2018)**

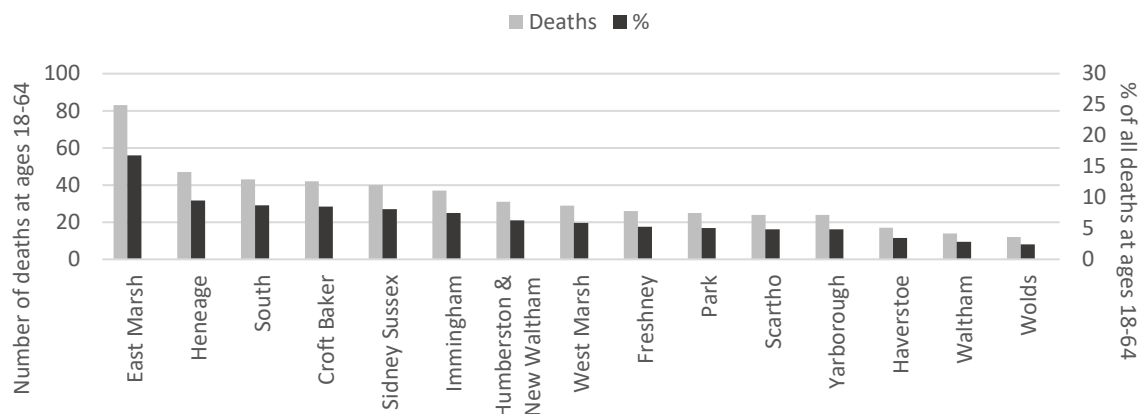
<sup>2</sup> 18-64 data is unavailable for England due to unavailability of public data

# Ward of residence

Figure 4 below shows the number of deaths by ward at age 18-65 and those deaths as a percentage of all deaths in the borough at ages 18-65. 494 of 498 records had a recorded ward of residence.

East Marsh had the highest number of deaths at ages 18-65, with 80 deaths and 17% of all deaths at ages 18-65.

**Figure 4 – Number of deaths at ages 18-65 by ward, and these deaths as a percentage of all deaths at ages 18-64 across the borough, North East Lincolnshire, 2017-2018**



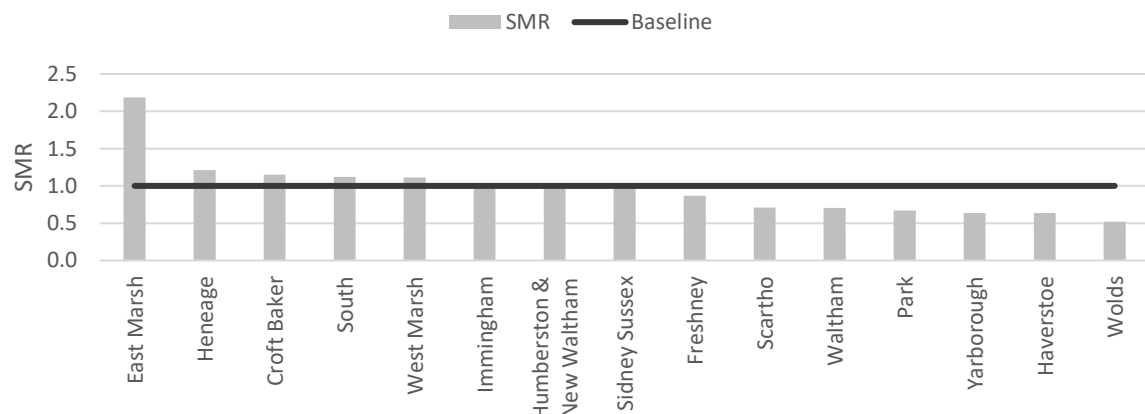
Source: North East Lincolnshire Council (2019), Office for National Statistics (2018)

Figure 5 below shows the standardised mortality rate across the borough, which standardises the number of deaths by the population of each ward, and compares to the borough average.

All wards above the line have more deaths than would be expected given the size of their population. Likewise, all wards below the line have fewer deaths than would be expected.

East Marsh has a considerably higher rate than any other ward, and the majority of wards have a rate in line with or below the borough average, as a consequence of the disproportionately high number of deaths in East Marsh.

**Figure 5 – Standardised mortality rate by ward for deaths aged 18-65, North East Lincolnshire, 2017-2018**



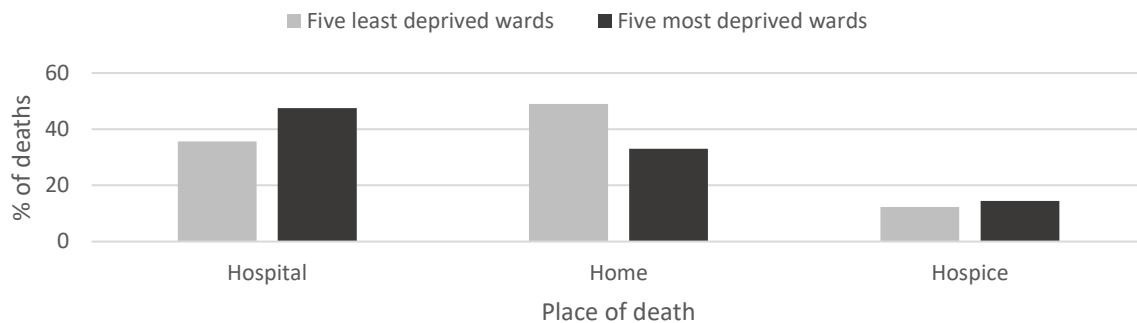
Source: North East Lincolnshire Council (2019), Office for National Statistics (2018)

# Place of death

Dying in hospital was marginally more frequent than dying at home overall, but this varies by factors such as cause of death and ward of residence, with residents of more deprived wards more likely to die in hospital.

There are many reasons why this may be, including poor end-of-life planning, late presentation of disease, longer patient intervals<sup>3</sup>, or poorer overall health necessitating hospital care.

**Figure 6 – Place of death by deprivation, North East Lincolnshire, 2017-2018**



**Source: North East Lincolnshire Council (2019), Office for National Statistics (2015)**

<sup>3</sup> The time between symptoms occurring, and presenting to a healthcare professional

# Cause of death

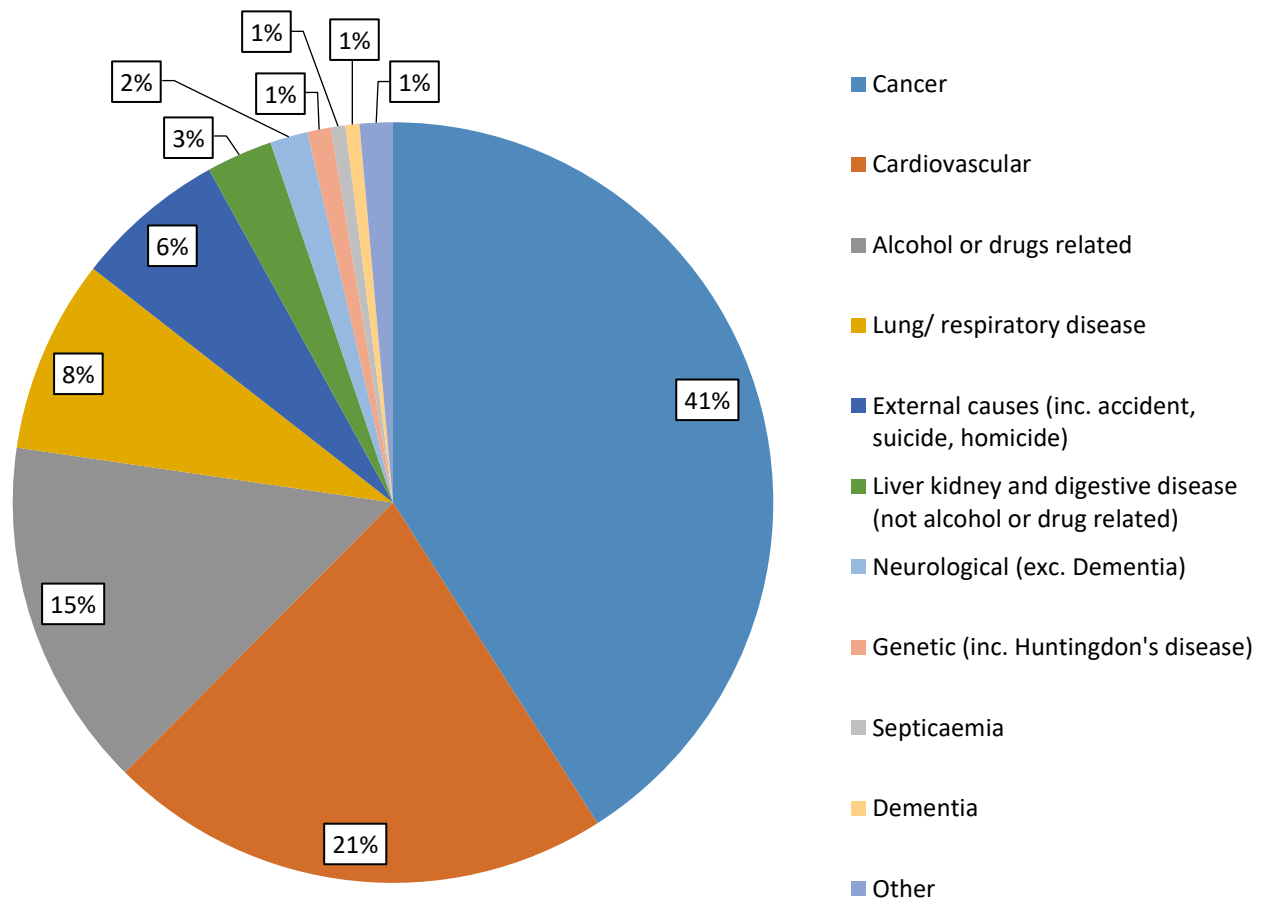
Death certificates contain up to four sections of information relating to the cause of death, presented below in Table 1.

**Table 1 – Sequence of death as listed on a UK death certificate**

Section	Information
I(a)	Disease or condition leading to <i>death</i>
I(b)	Disease or condition leading to <i>I(a)</i>
I(c)	Disease or condition leading to <i>I(b)</i>
II	Other significant conditions contributing to death but not related to the disease or condition that caused it.

This information has been analysed and used to determine the broad cause of death for all 498 records, as displayed below in Figure 7

**Figure 7 – Pie chart showing the proportion of deaths at ages 18-65 by broad cause, North East Lincolnshire, 2017-2018**



Source: North East Lincolnshire Council (2019)

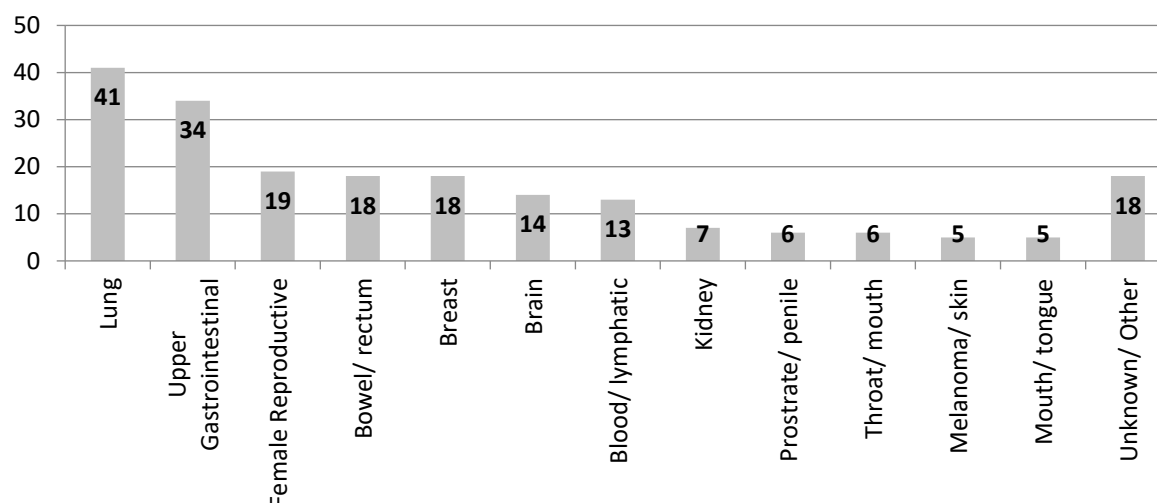


## Cancer

Cancer was the single biggest cause of mortality, being the cause of death in 204 of 498 (41%) of cases, with cancers of the lung, breast, brain and bowel being most common. Figure 9 below shows the frequency of the most common cancers.

45 of 204 deaths (22%) were deaths from cancers considered screening preventable – breast cancer (18), bowel or rectal cancer (18) and cervical cancer (9).

**Figure 8 – Frequency of deaths by type of cancer, ages 18-65, North East Lincolnshire, 2017-2018**

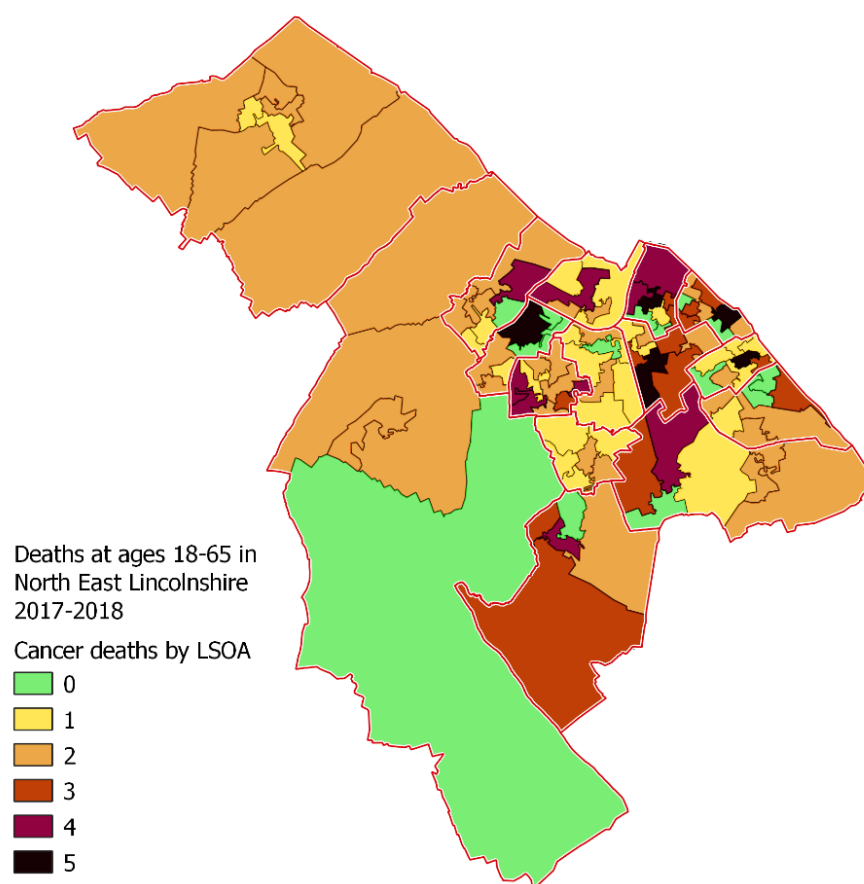


**Source: North East Lincolnshire Council (2019)**

Figure 9 below presents cancer mortality mapped by lower-layer super output area (LSOA)<sup>4</sup>.

<sup>4</sup> LSOAs are census-defined areas containing 1,000-3,000 people, they are wholly contained within electoral wards. There are 106 LSOAs in North East Lincolnshire.

Figure 9 – Cancer mortality by LSOA, at ages 18-65, North East Lincolnshire, 2017-2018

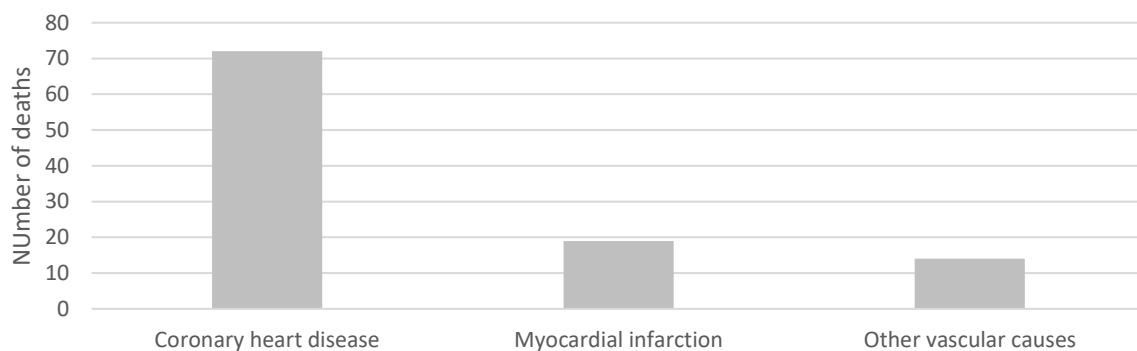


## Cardiovascular

Cardiovascular causes were the second biggest contributor to mortality, accounting for 105 of 498 (21%) deaths, including causes such as coronary heart disease, myocardial infarction (heart attack) and cerebrovascular accident (stroke).

These causes have been grouped and are displayed in Figure 10 below.

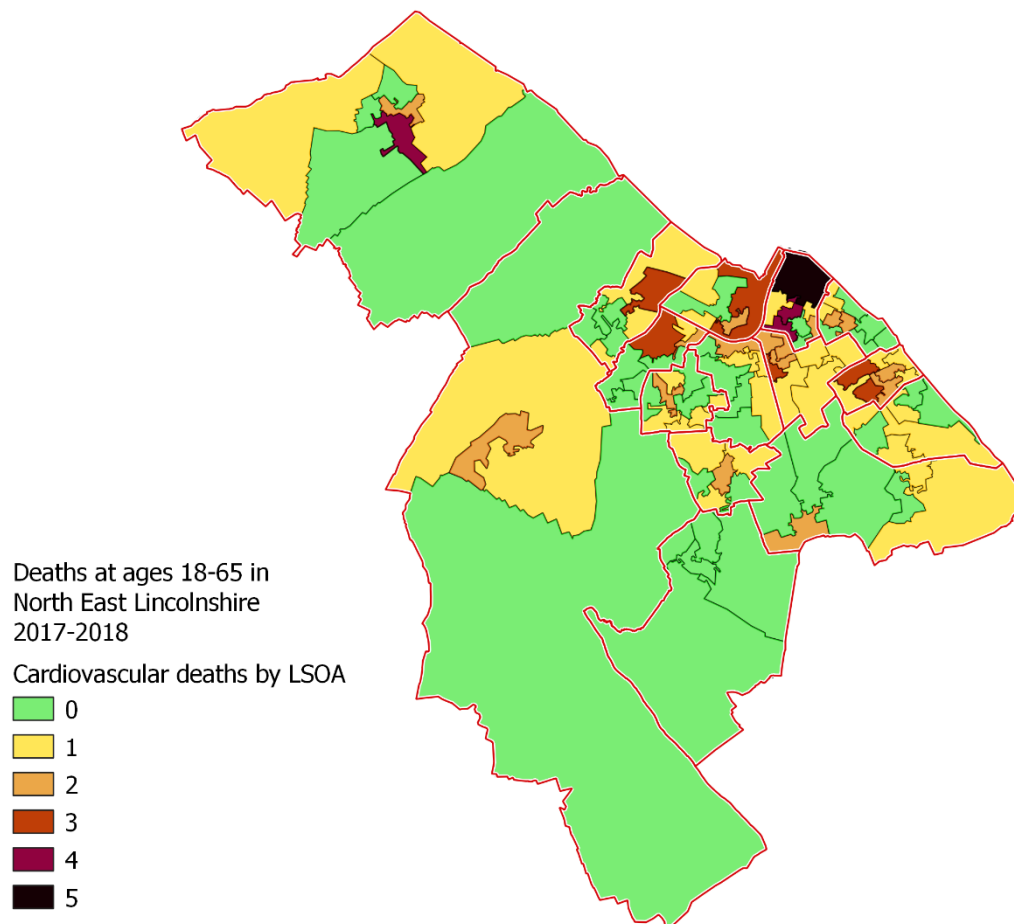
**Figure 10 – Causes of cardiovascular mortality, ages 18-65, North East Lincolnshire, 2017-2018**



**Source: North East Lincolnshire Council (2019)**

Figure 11 below shows cardiovascular mortality mapped by LSOA.

**Figure 11 – Cardiovascular mortality by LSOA, at ages 18-65, North East Lincolnshire, 2017-2018**



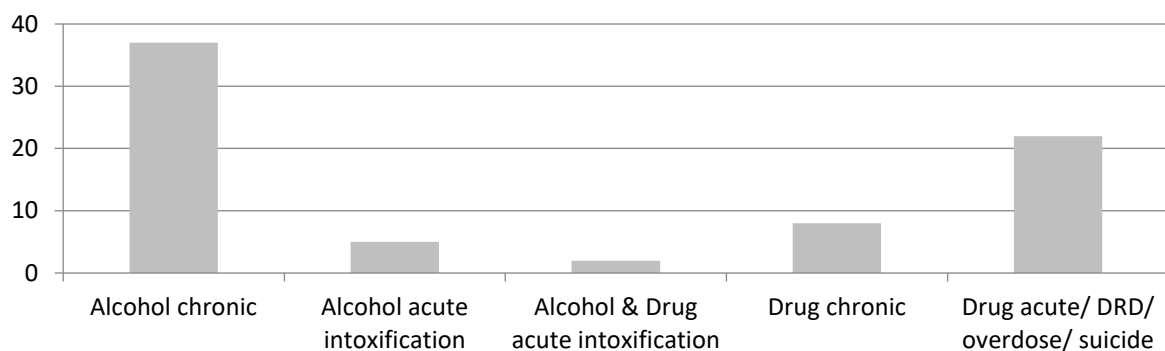
## Substance-related

For the purpose of this report, substance-related mortality is classed as deaths involving a substance, including suicide from overdose. As such, drug-induced suicides are not double counted in the later section on external causes, which will cover suicide.

Substance related mortality was the third-biggest cause of death, accounting for 74 of 498 deaths (15%).

Alcohol-related mortality tends to be chronic, such as alcoholic liver disease, whereas drug mortality tends to be acute, reflecting both the nature of the substances and their respective ability to cause mortality, as well as their patterns of use.

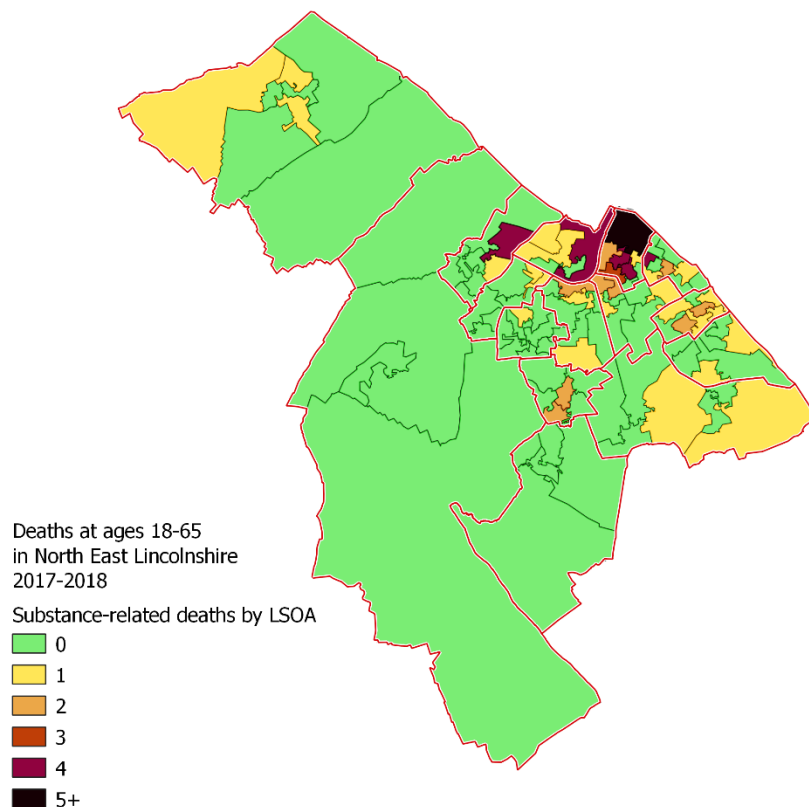
**Figure 12 – Substance-related mortality, ages 18-65, North East Lincolnshire Council, 2017-2018**



**Source: North East Lincolnshire Council (2019)**

Figure 13 below maps substance-related mortality by LSOA.

**Figure 13 – Substance-related mortality by LSOA, at ages 18-65, North East Lincolnshire, 2017-2018**

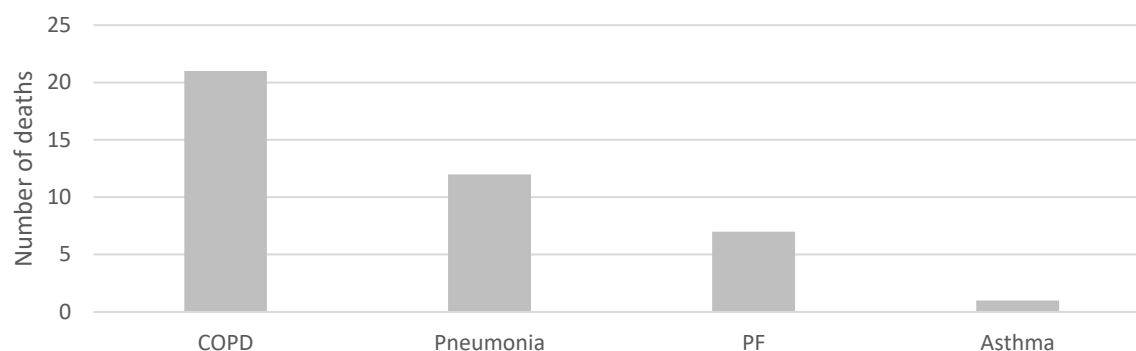


## Respiratory

Respiratory causes were the fourth-biggest contributor to mortality, accounting for 41 of 498 deaths (8%).

Respiratory causes were primarily chronic lung conditions, chiefly chronic obstructive pulmonary disease (COPD) and pulmonary fibrosis (PF), however more acute respiratory conditions such as pneumonia also contributed significantly to respiratory-related mortality.

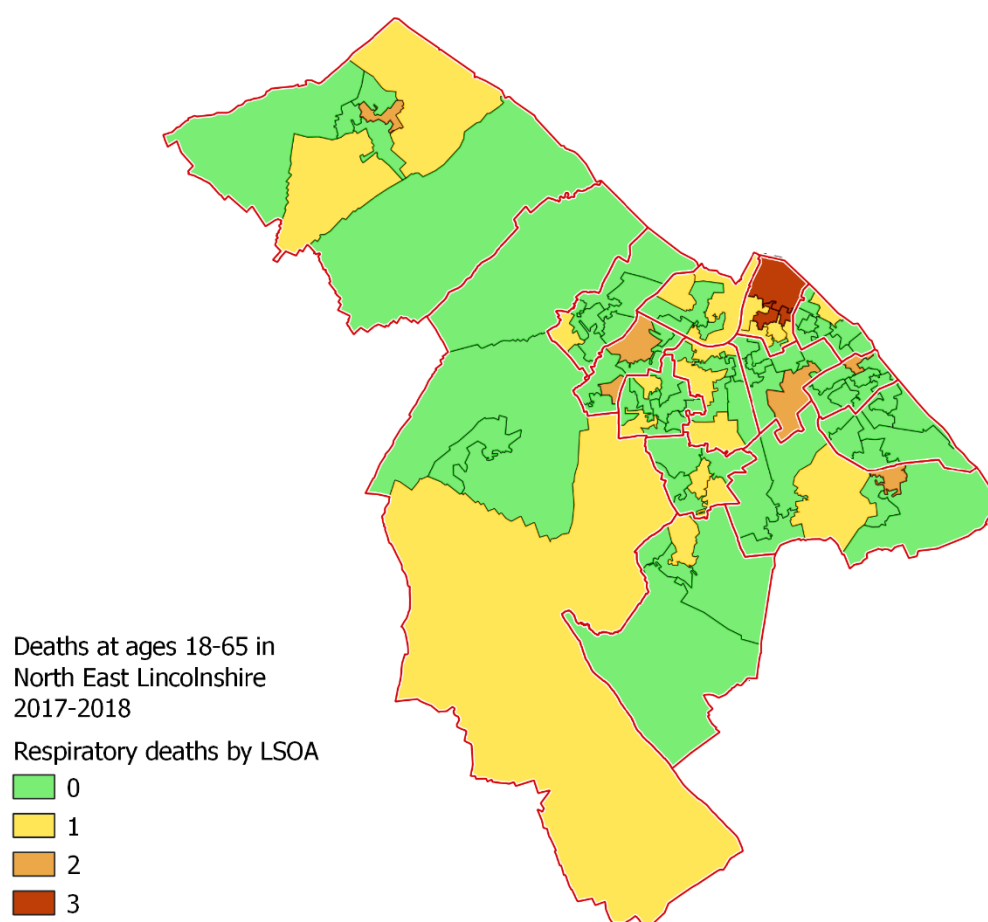
**Figure 14 – Respiratory-related mortality, ages 18-65, North East Lincolnshire, 2017-2018**



**Source: North East Lincolnshire Council (2019)**

Figure 15 below maps respiratory mortality by LSOA.

**Figure 15 – Respiratory mortality by LSOA, at ages 18-65, North East Lincolnshire, 2017-2018**

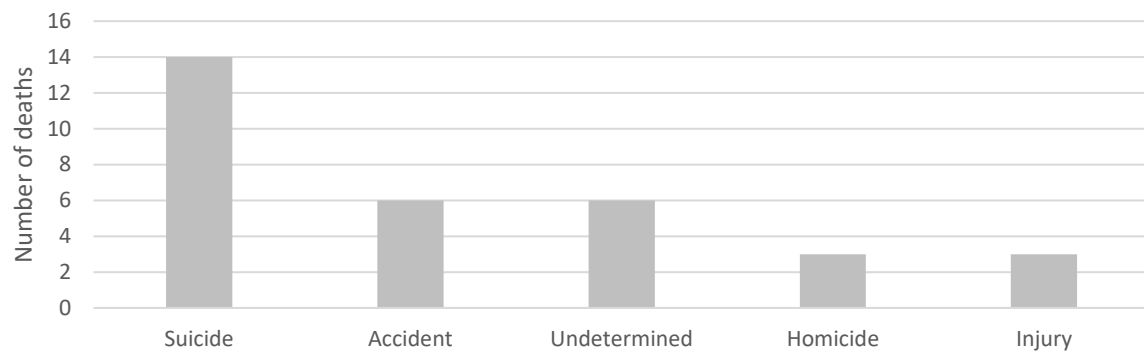


## External

External causes of mortality include accidents, homicides, injuries, suicides and a number of cases of undetermined intent, such as deaths where suicidal intent is not known, or misadventure.

External causes were the fifth-biggest cause of mortality, accounting for 32 of 498 deaths (6%).

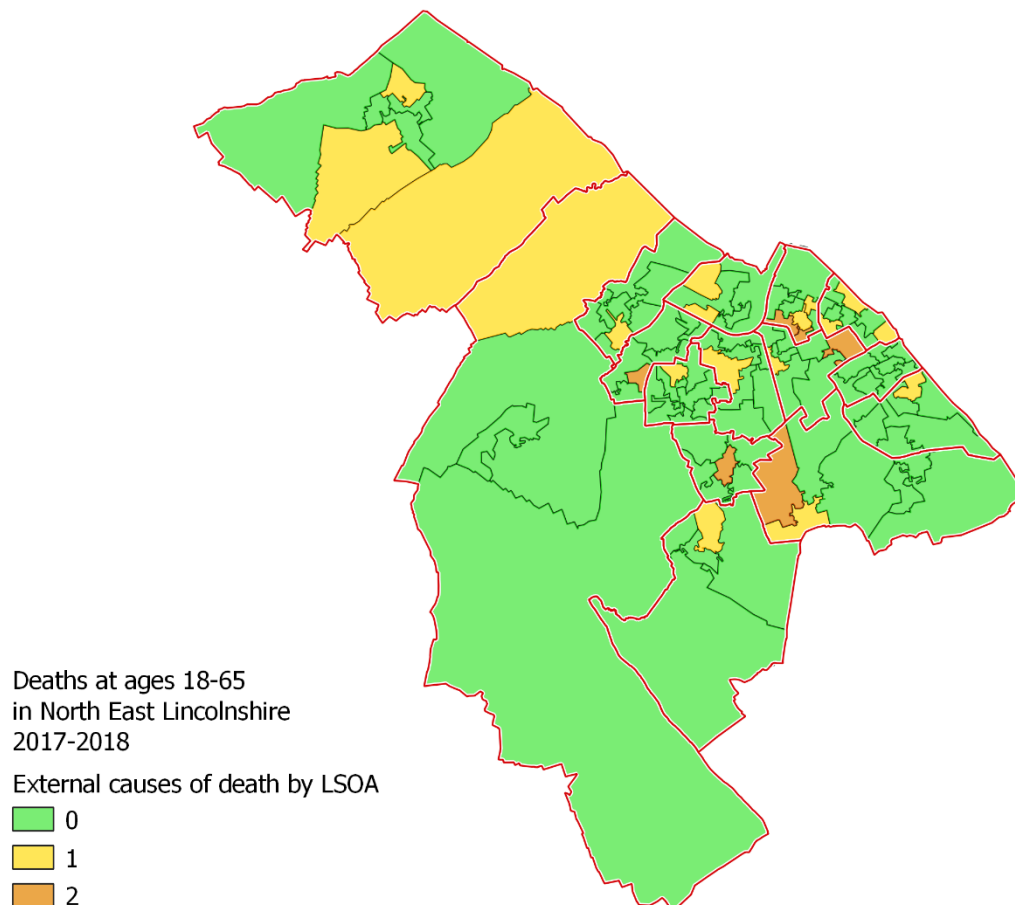
**Figure 16 – External causes of mortality, ages 18-65, North East Lincolnshire, 2017-2018**



**Source: North East Lincolnshire Council (2019)**

Figure 17 below maps external causes of mortality by LSOA.

**Figure 17 – External causes of mortality by LSOA, at ages 18-65, North East Lincolnshire, 2017-2018**

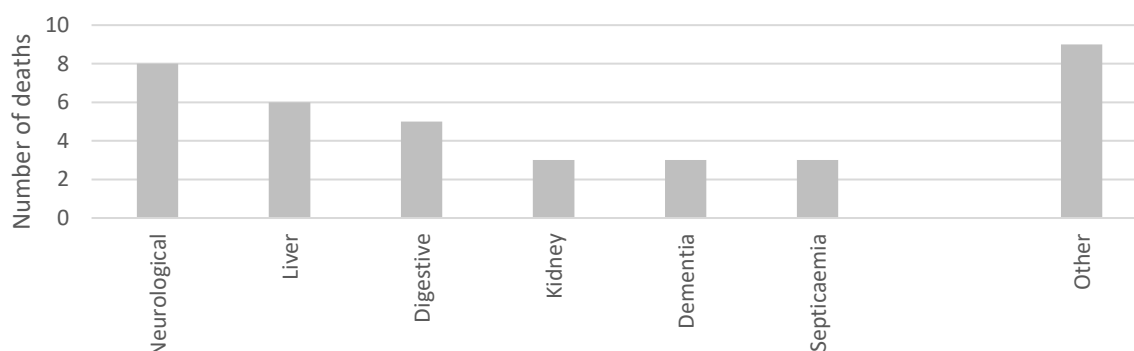


## Other causes

Death from cancer, cardiovascular disease, substance misuse, respiratory disease or external causes of death account for 456 of 498 deaths (92%).

Figure 18 below shows the number of deaths by each broad cause remaining. Neurological causes, as well as those relating to liver, digestive or kidney conditions were the most common.

**Figure 18 - Other causes of mortality, ages 18-65, North East Lincolnshire, 2017-2018**

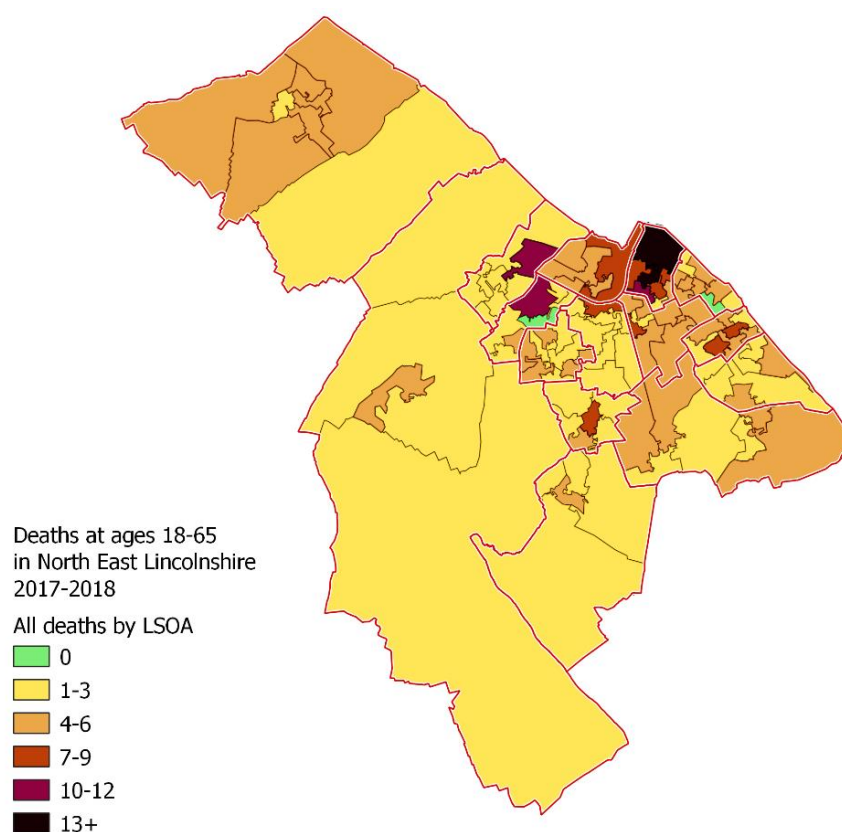


Source: North East Lincolnshire Council (2019)

## All-cause mortality

Figure X below maps North East Lincolnshire's LSOAs by the total number of deaths at ages 18-65 in 2017-2018.

**Figure 19 - All causes of mortality by LSOA, at ages 18-65, North East Lincolnshire, 2017-2018**



# Demographics of cause of death

## Cause of death by age

Figure 20 below shows the most common causes of death by age, in order from most common to least common. It is particularly illustrative of the impact of substance misuse across the lifecourse, from young adulthood through to later middle age.

Figure 20 – Most common causes of death, by age group, ages 18-65, North East Lincolnshire, 2017-2018

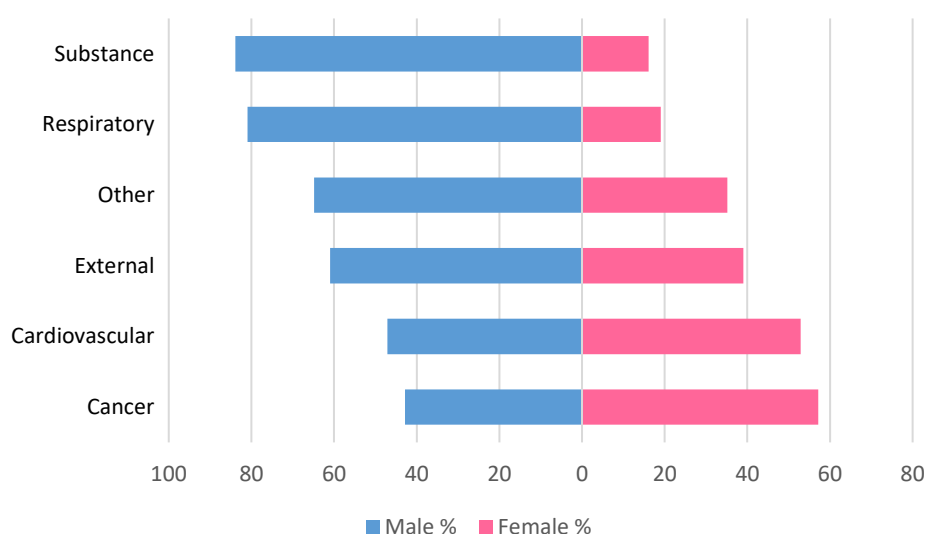
18-34	35-39	40-44	45-49	50-54	55-59	60-65
Substance	Substance	Substance	Cancer	Cancer	Cancer	Cancer
Cancer	Other	Cancer	Cardio	Cardio	Cardio	Cardio
Other	Cancer	Cardio	Substance	Substance	Respiratory	Respiratory

Source: North East Lincolnshire Council (2019)

## Cause of death by gender

Figure 21 below shows the percentage of deaths by gender by broad cause. It shows that substance-related deaths at ages 18-65 are more than 80% male, whereas cancer deaths for the same age group are almost 60% women.

Figure 21 – Causes of death by gender, aged 18-65, North East Lincolnshire, 2017-2018



Source: North East Lincolnshire Council (2019)



## Cause of death by ward

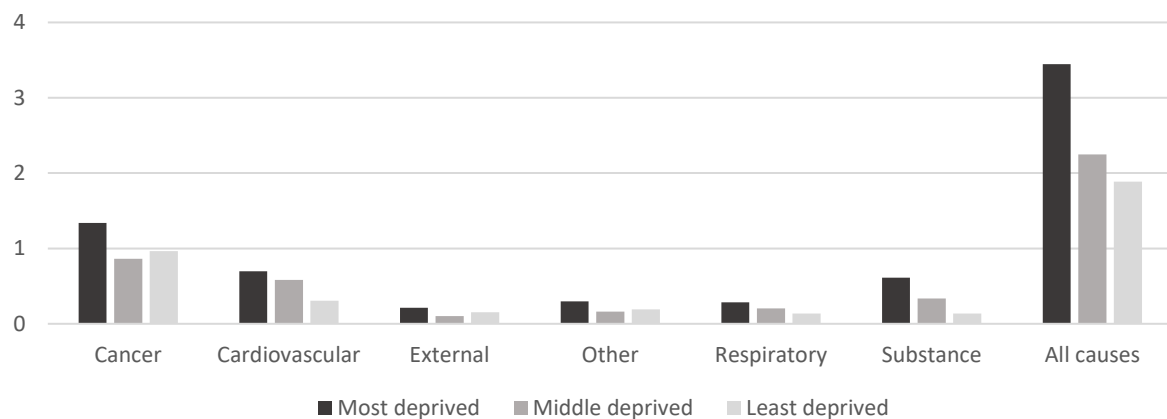
Wards have been pooled into groups based on their Indices of Multiple Deprivation (IMD) score. Table 2 below shows the split of wards by deprivation tertile (thirds), whilst Figure X shows the split in causes of death by these wards, showing the mortality rate for that particular case.

**Table 2 – North East Lincolnshire electoral wards by deprivation tertile**

<b>Tertile (1 = Most Deprived)</b>	<b>Wards</b>
1	East Marsh, Heneage, Sidney Sussex, South and West Marsh
2	Croft Baker, Freshney, Immingham, Park and Yarborough
3	Haverstoe, Humberston and New Waltham, Scartho, Waltham and Wolds

Figure 22 shows a clear deprivation gradient, not only for all-cause mortality, but within each sub-category, particularly in cancer, cardiovascular and substance-related causes.

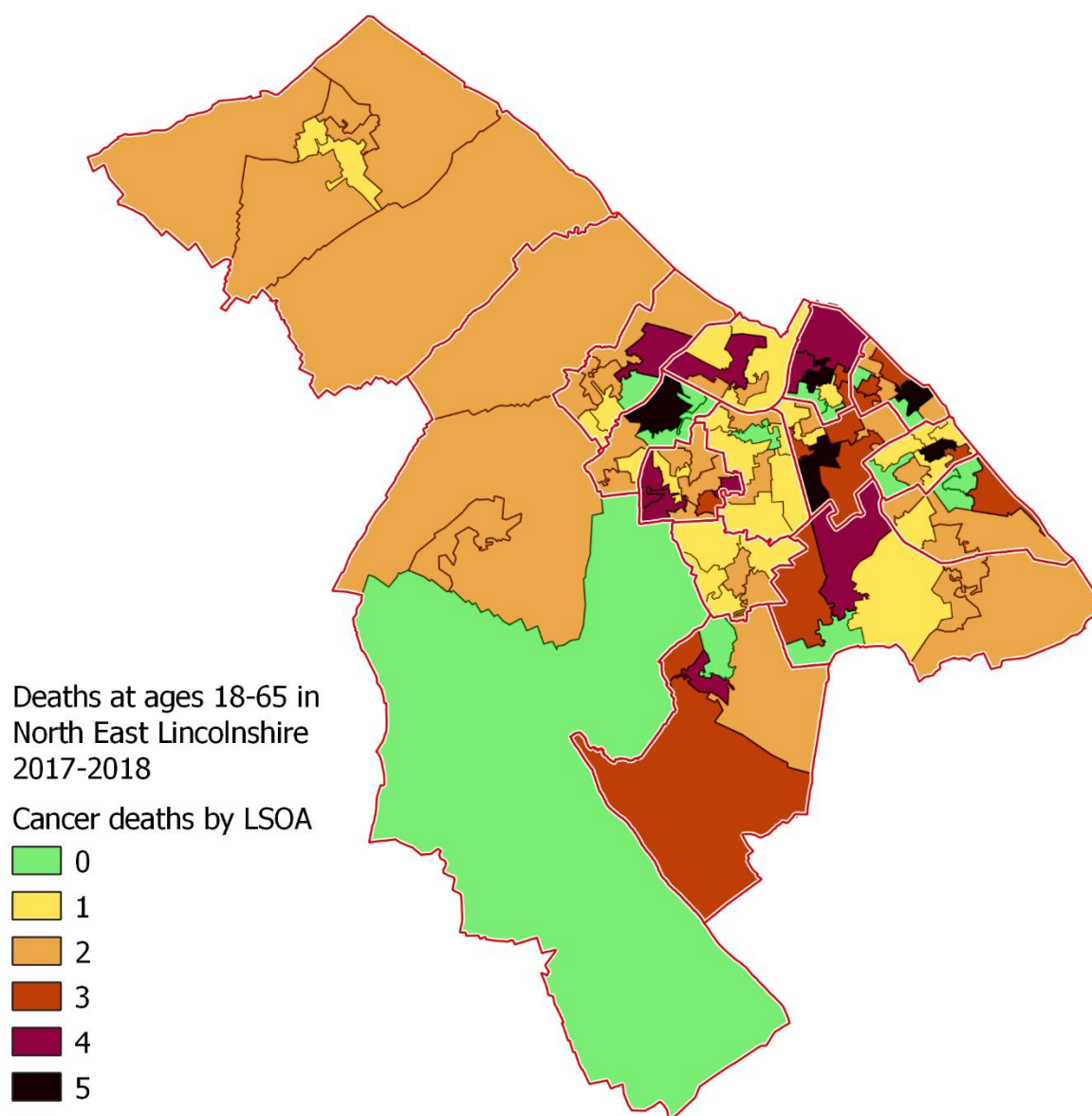
**Figure 22 – Crude mortality rate per 1,000, ages 18-65, by cause of death, by deprivation, North East Lincolnshire, 2017-2018**



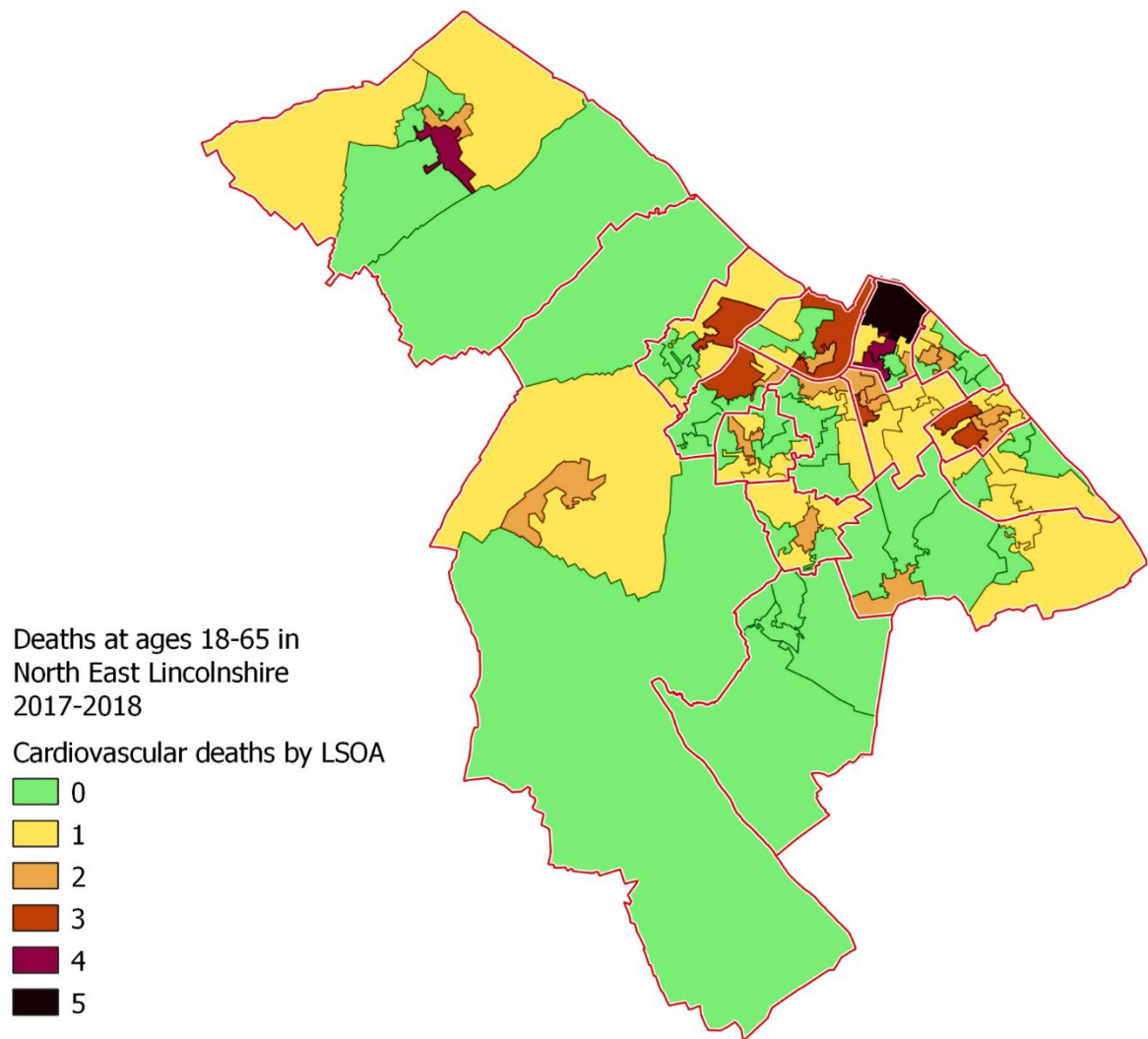
**Source: North East Lincolnshire Council (2019)**

# Appendix A – Larger versions of mortality maps

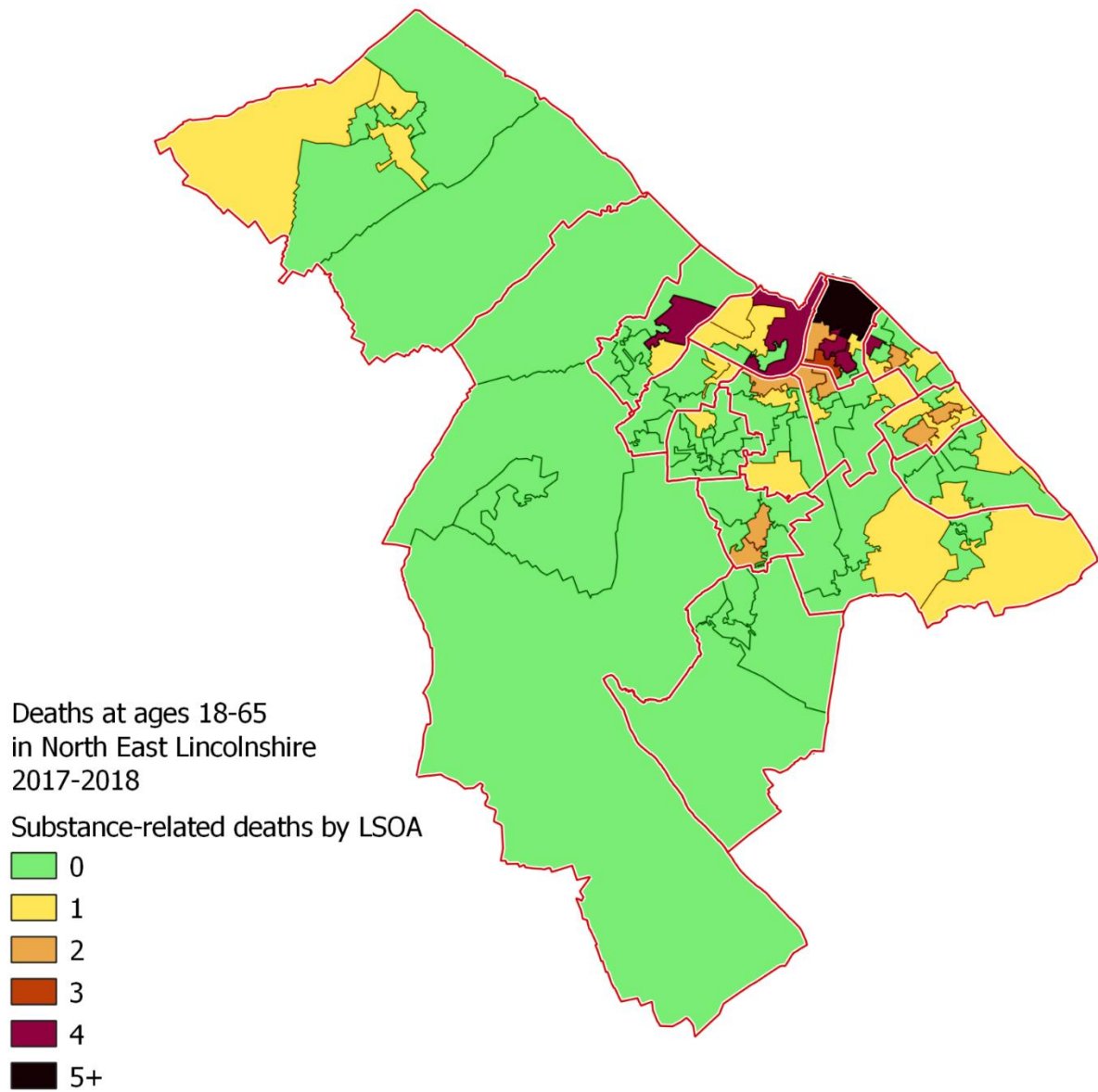
## Cancer



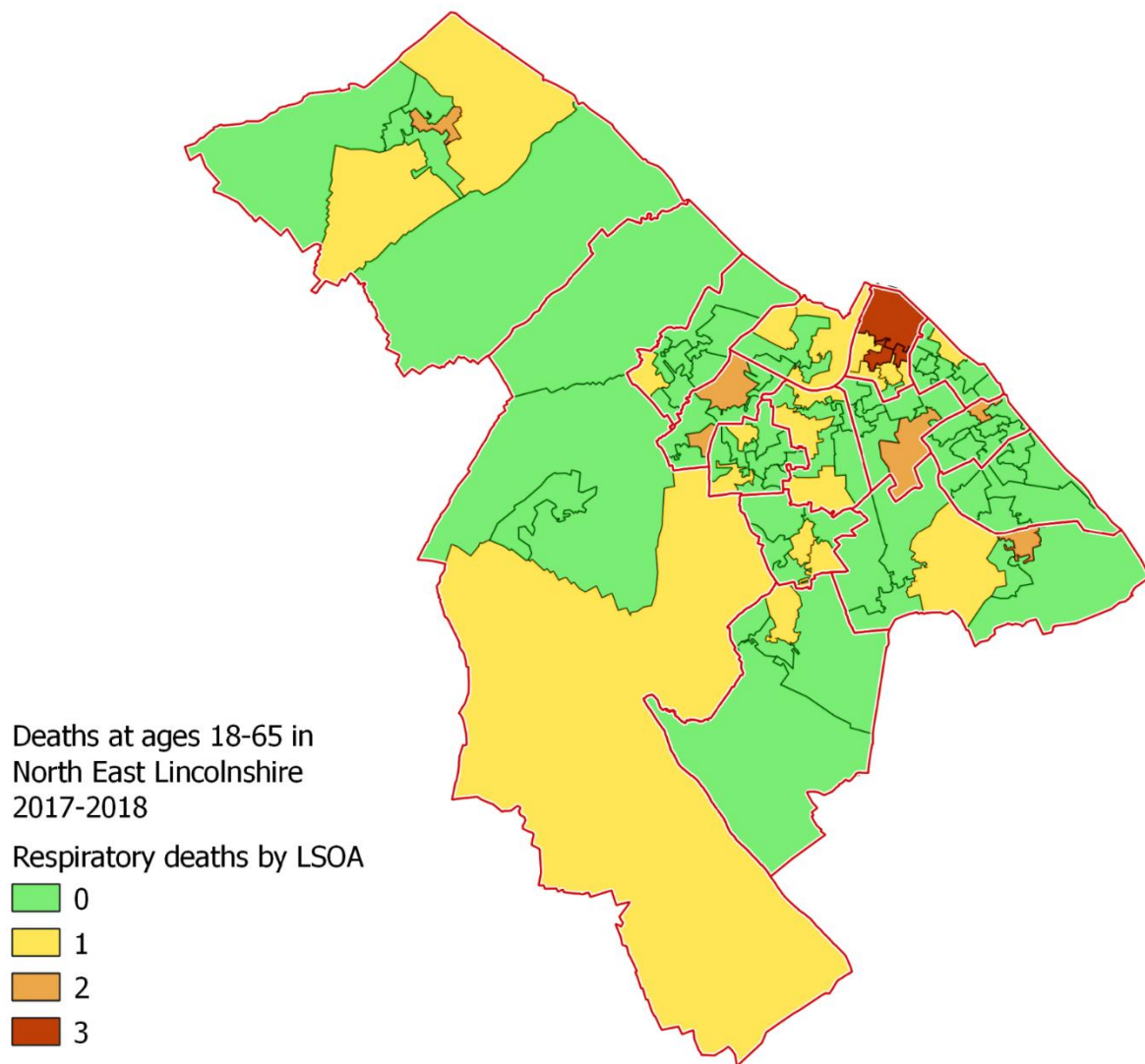
## Cardiovascular



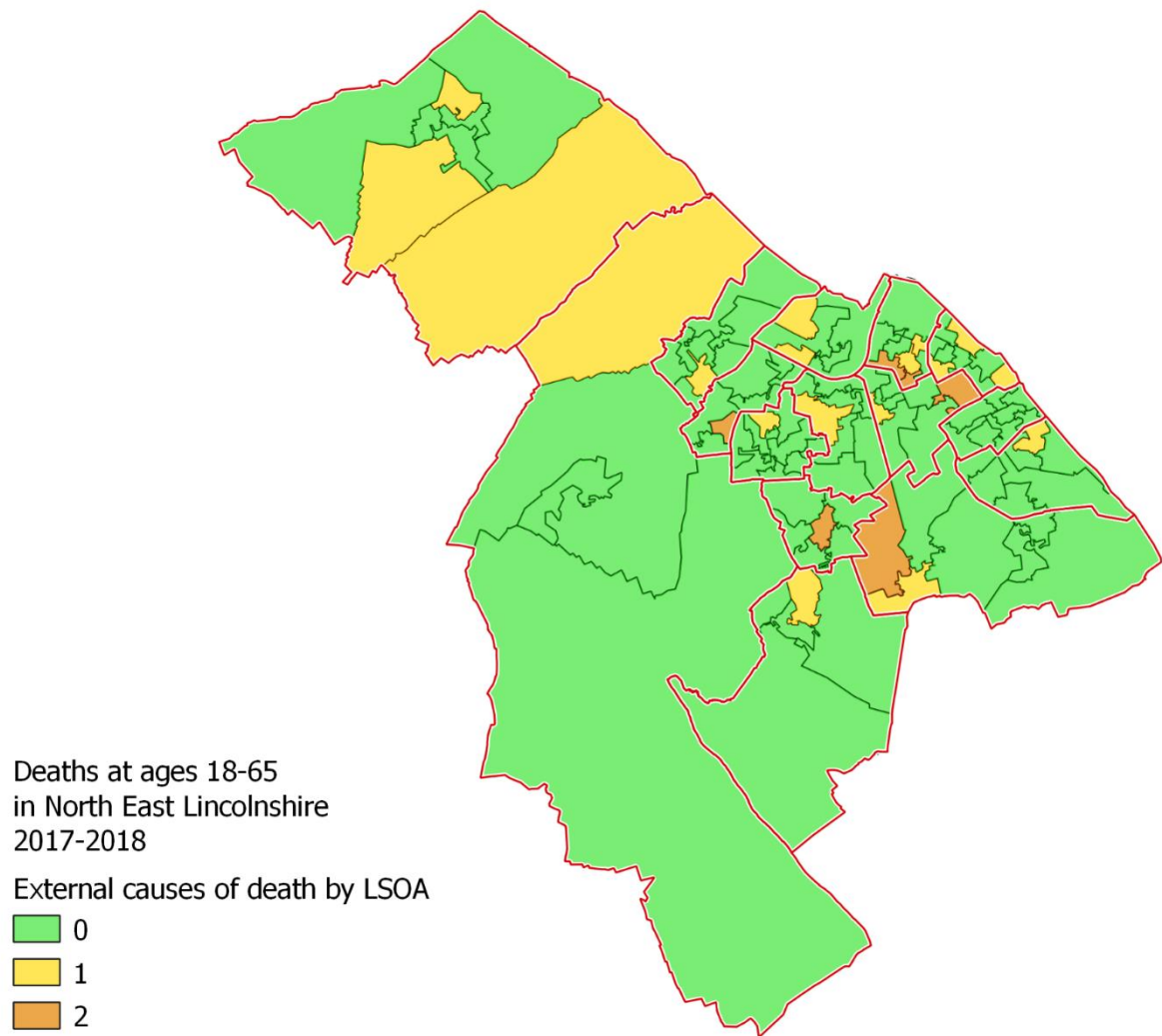
## Substance-related



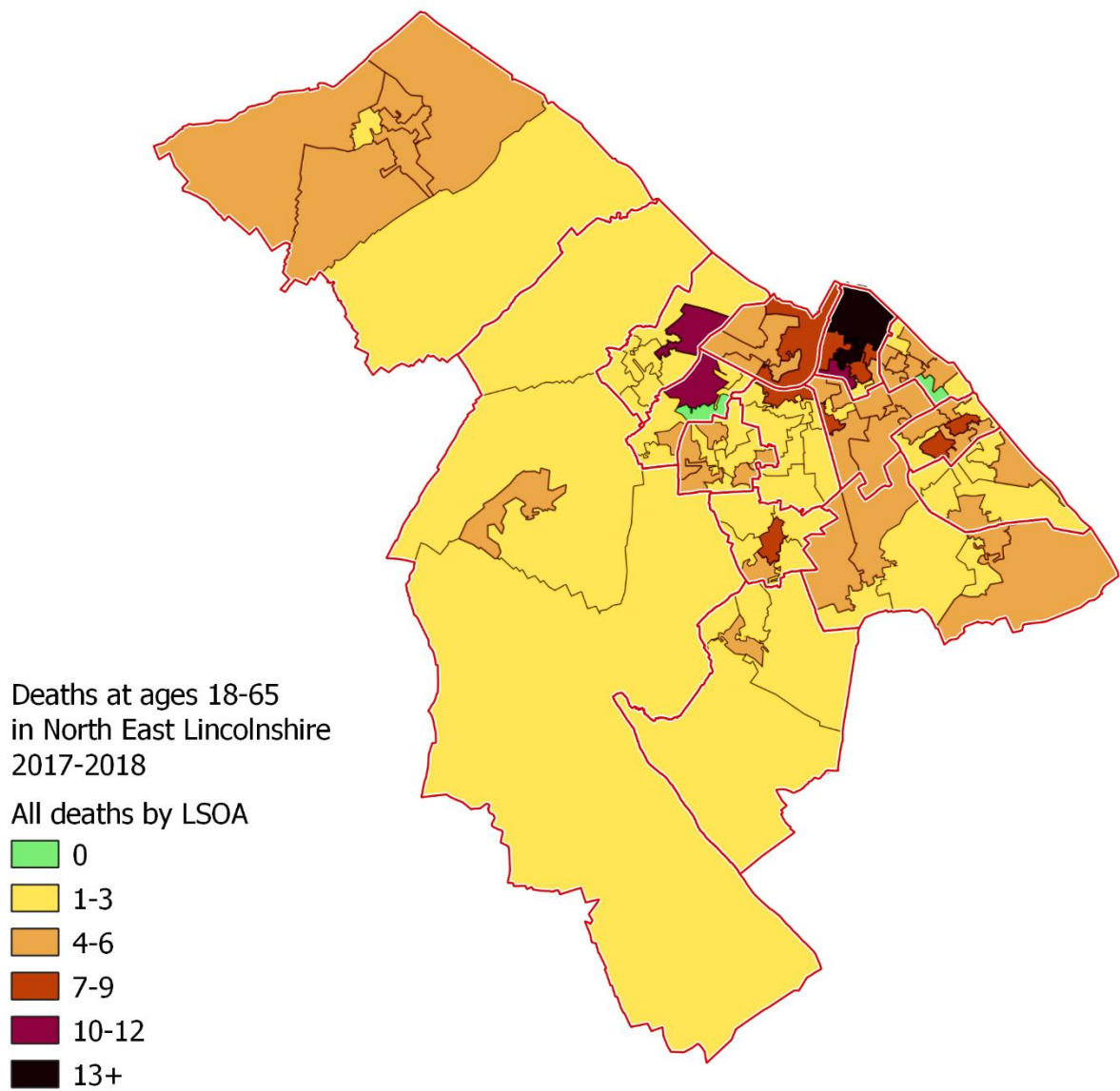
## Respiratory



## External causes



## All causes





## Single most common cause

This is the single most common cause by LSOA, but not necessarily the majority cause of death. For example, in an LSOA with 5 deaths, cancer could have caused 2, whilst respiratory, substance and cardiovascular causes could have caused 1 death each. In this example, the LSOA would still be coloured for cancer, as it is the single most common cause.

