



## **Thurrock Flexible Generation Plant**

**Environmental Statement Volume 6  
Appendix 13.1: Human Health Baseline**

**Date:** February 2020

**Environmental Impact Assessment**

**Environmental Statement**

**Volume 6**

**Appendix 13.1**

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## Summary

This appendix reports the extensive collection and analysis of public health and socio-economic baseline statistics used within the Volume 3, Chapter 13: Human Health to define local health and socio-economic circumstance.

## Qualifications

This document has been prepared by Tara Barratt, a Senior Health Impact Assessment (HIA) Consultant with an MSc in Environmental Technology, specialising in Environmental Epidemiology and over three years' experience. Tara is an Associate Member of the Institute of Environmental Management and Assessment (IEMA) and contributor to the IEMA Health in EIA Working Group.

It has been reviewed by Dr Andrew Buroni, RPS' Health and Social Impact Assessment Practice Leader with two decades' experience. Dr Buroni holds a PhD on international Health and Impact Assessment methods and best practice, a Masters in Environmental Impact Assessment and BSc (Hons) in Biological Sciences. He is a Fellow of the Royal Society of Medicine (RSM) and Royal Society for Public Health (RSPH) and sits on the IEMA Health in EIA Working Group.

## 13. Human Health Baseline

### 13.1 Introduction

13.1.1 Evidence suggests that different communities have varying susceptibilities to health impacts and benefits as a result of social and demographic structure, behaviour and relative economic circumstance. The aim of the following information which makes up this human health baseline, is to put into context the local health circumstance of communities likely to be affected by the proposed development.

13.1.2 Health-specific indicators has been collected for Thurrock Borough, or Thurrock Clinical Commissioning Group (CCG) where applicable, which is considered representative of communities in proximity to the proposed development for environmental health pathways due to the local nature of their effects. Socio-economic indicators include statistics at the county (Essex) geographic level in order to reflect the wider-reaching sphere of influence that income and employment opportunities provide.

13.1.3 In addition to data collected at the county and local authority/CCG level, a section is provided which reports all relevant data at the ward level. While fewer up-to-date statistics are available at the ward level compared to the local authority/CCG level, ward level data provides an indication of health and socio-economic circumstance at a higher spatial resolution. Relevant wards include: Tilbury Riverside and Thurrock Park; East Tilbury; and Tilbury St. Chads.

### 13.2 Life expectancy and healthy life expectancy

13.2.1 Both male and female life expectancy within Thurrock are below the regional and national averages and have been decreasing in recent years. There is particular disparity between the average life expectancy within Thurrock and the regional average. Healthy life expectancy (HLE) is the proportion of life spent in "good" health. Female HLE is generally below the regional and national average (in all years recorded below bar 2011-13); male HLE has been rising over the years, and is now above the regional and national average.

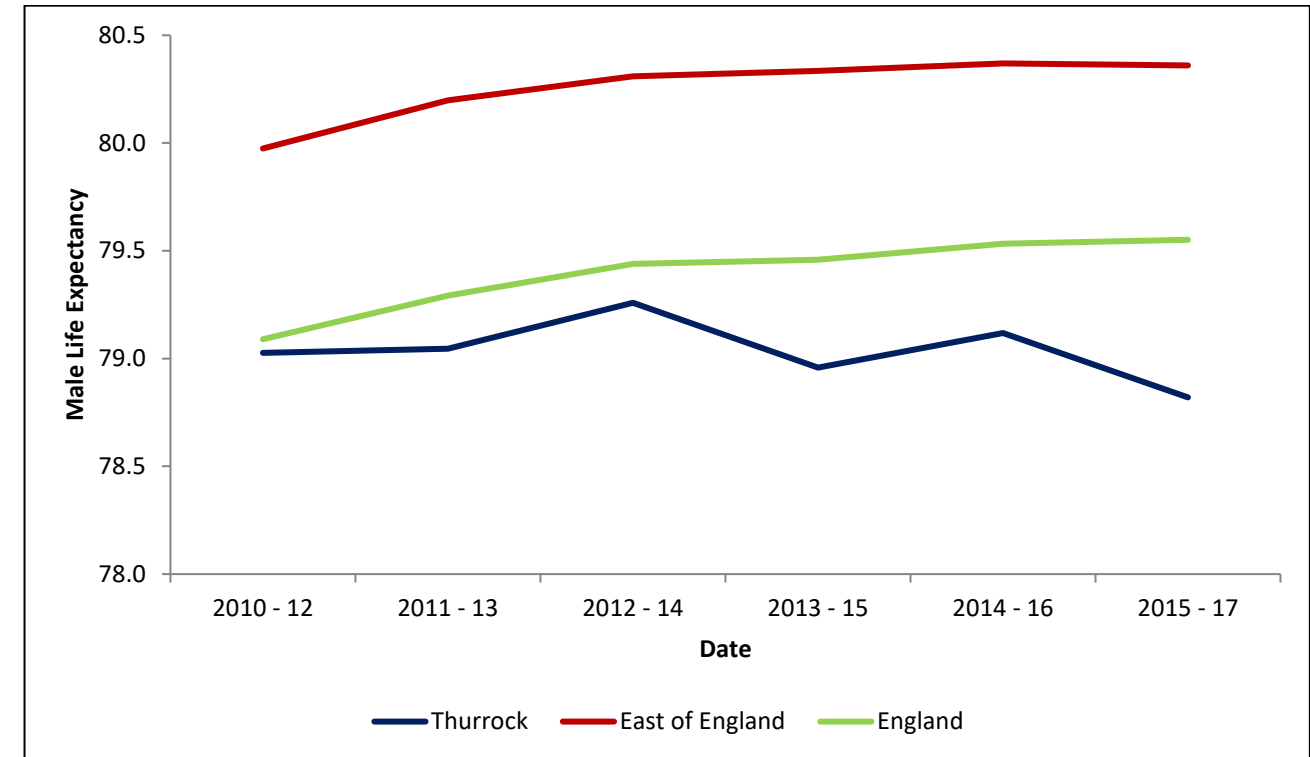


Figure 13.1: Male life expectancy

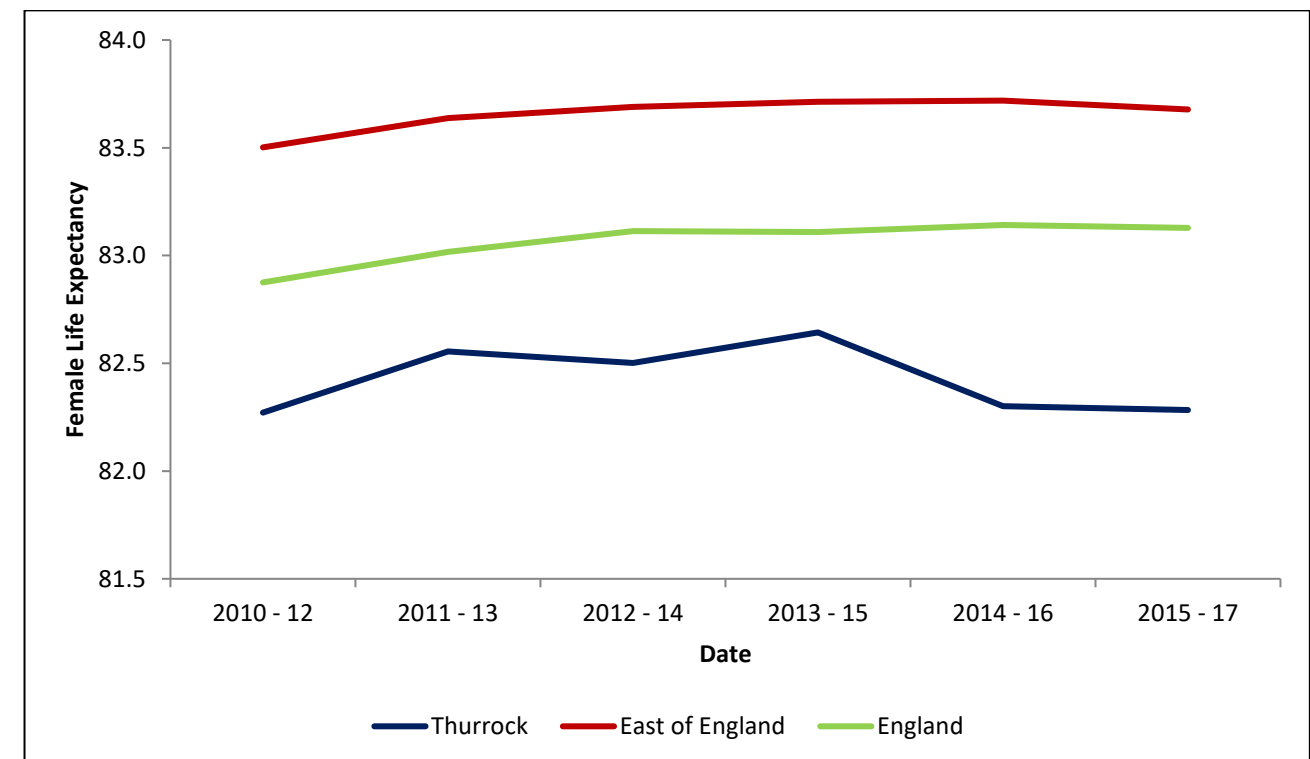


Figure 13.2: Female life expectancy

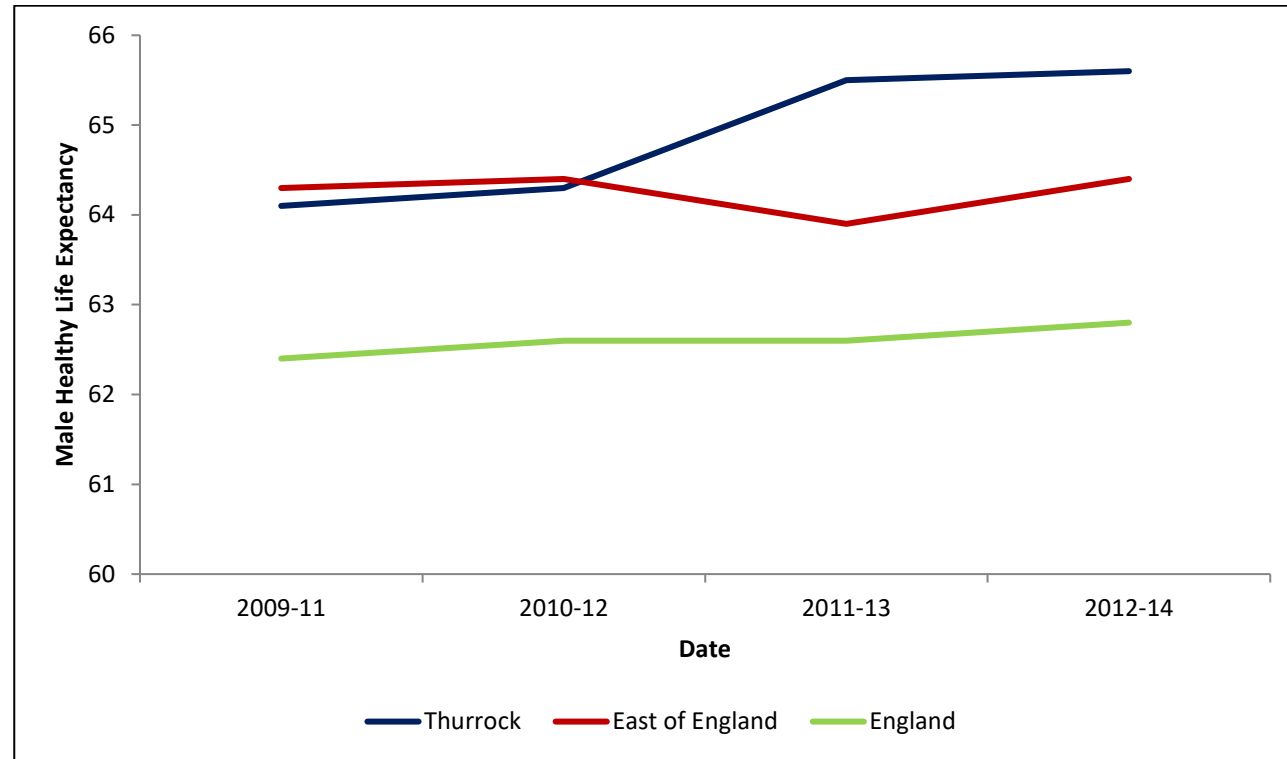


Figure 13.3: Male healthy life expectancy

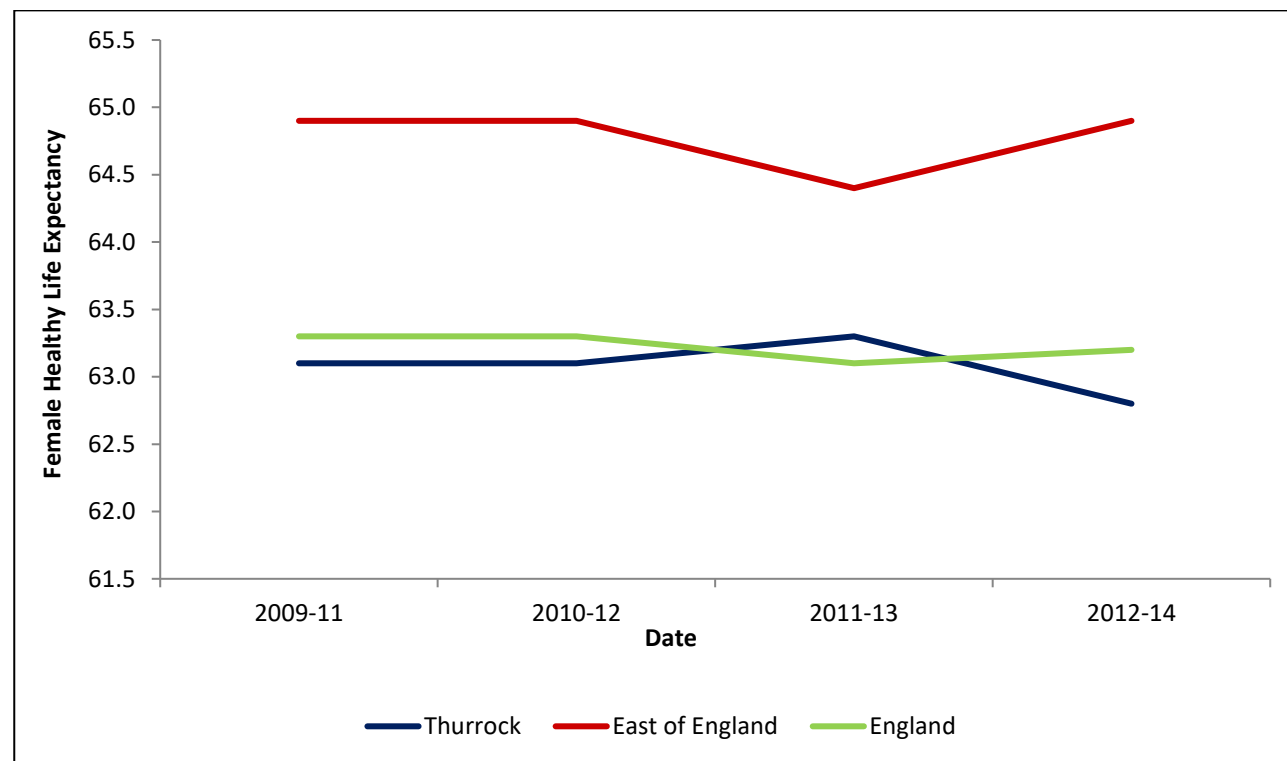


Figure 13.4: Female healthy life expectancy

### 13.3 Mental health

13.3.1 Within Thurrock, depression recorded incidence has been increasing at a lower rate compared to the regional and national averages. While in 2013/14 depression recorded incidence in Thurrock was higher than the regional and national averages (which were more comparable to each other), in 2017/18, depression recorded incidence in Thurrock is lower than the national average and similar to the regional average.

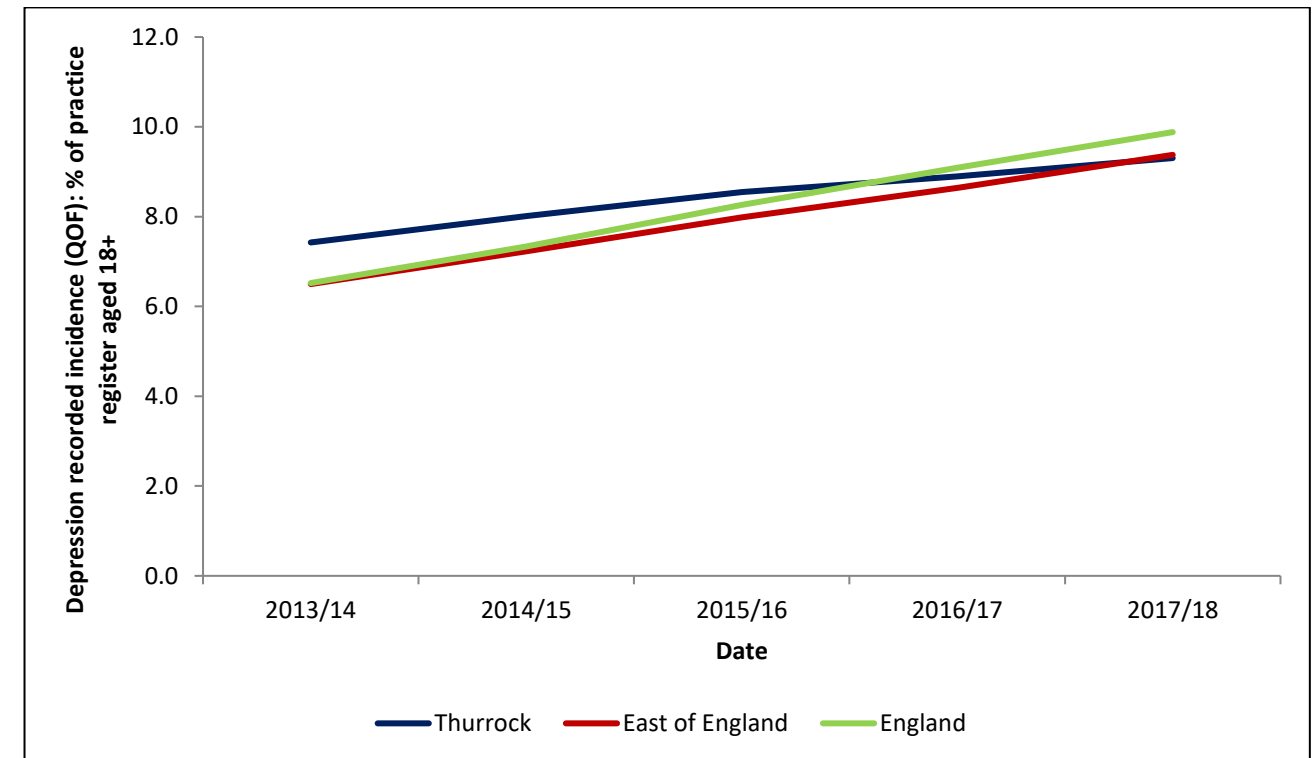


Figure 13.5: Depression recorded incidence

13.3.2 Dementia recorded prevalence within Thurrock CCG is below both the regional and national average by 0.1% and 0.2% respectively.

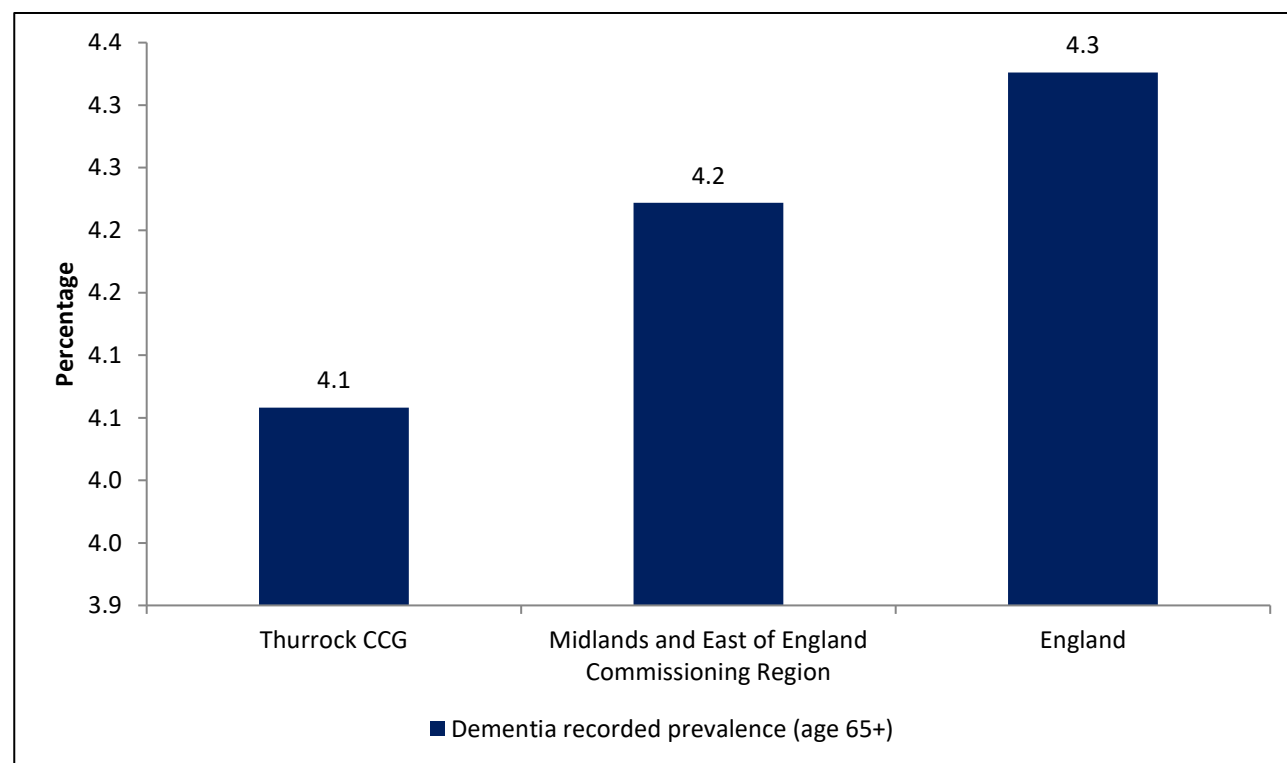


Figure 13.6: Dementia recorded prevalence

13.3.3 Between the years of 2010-12 and 2011-13, suicide rate within Thurrock was below the regional and national average. Between 2012-14 and 2014-16, suicide rate increased to above the regional and national averages (which remained relatively static during these years) before decreasing to a level below the regional and national averages in 2016-18.

13.3.4 Hospital stays for self-harm within Thurrock are consistently below the regional and national average. Between the years of 2012/13 and 2016/17, the rate of hospital stays for self-harm remained relatively static in Thurrock before increasing by more than double in 2017/18. Across all years analysed, the regional and national averages for rate of hospital stays for self-harm remained relatively static.

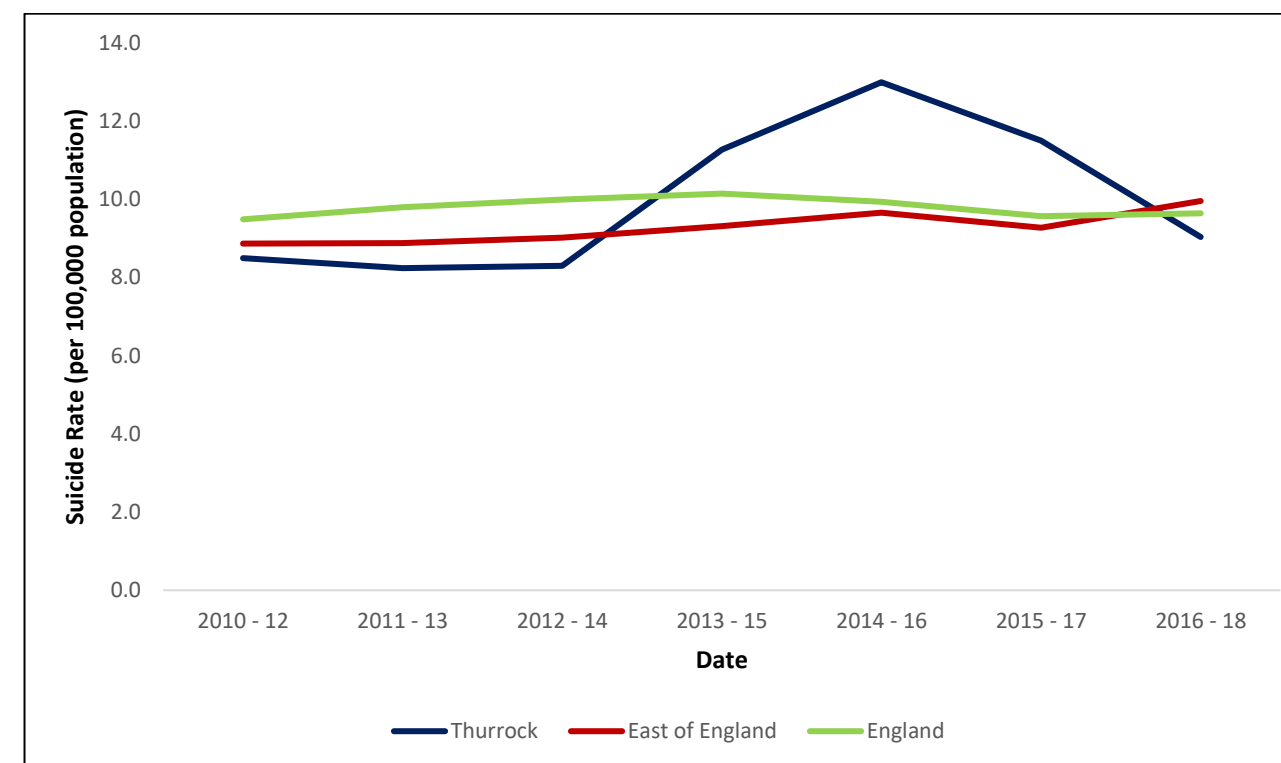


Figure 13.7: Suicide rate

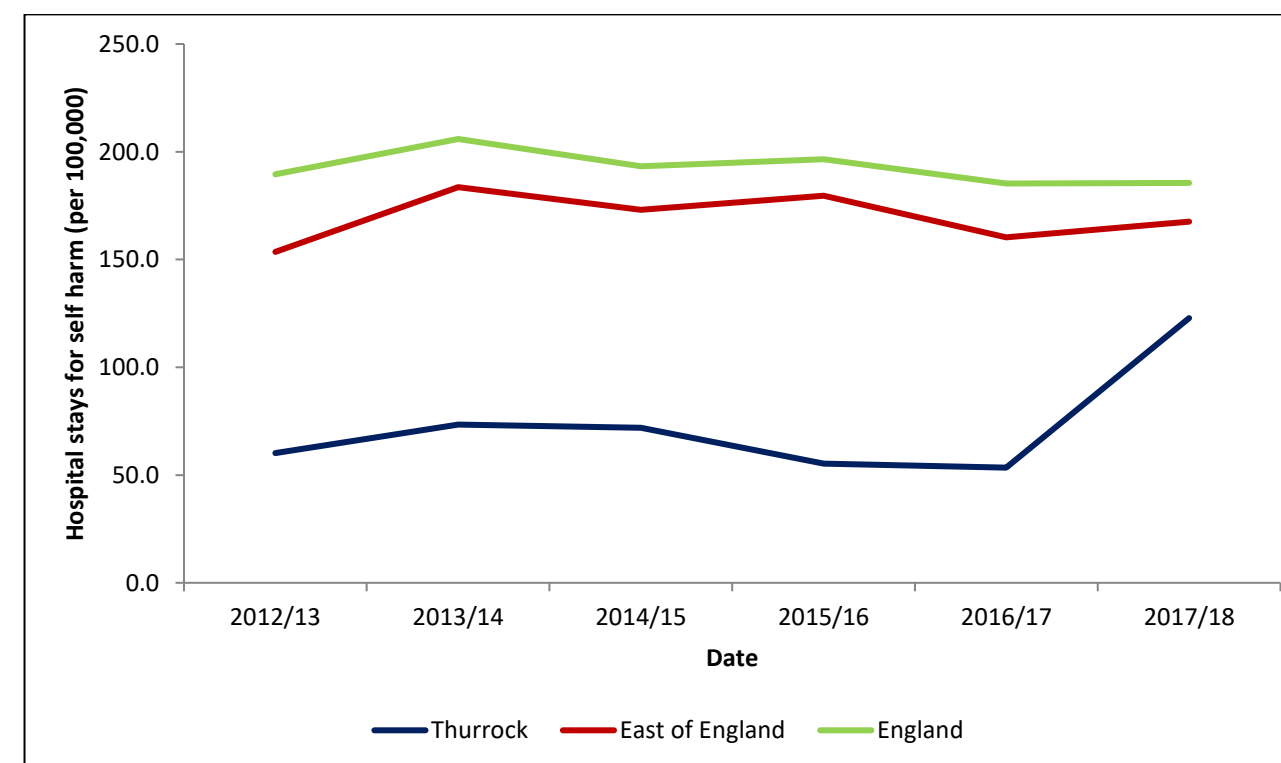


Figure 13.8: Hospital stays for self-harm

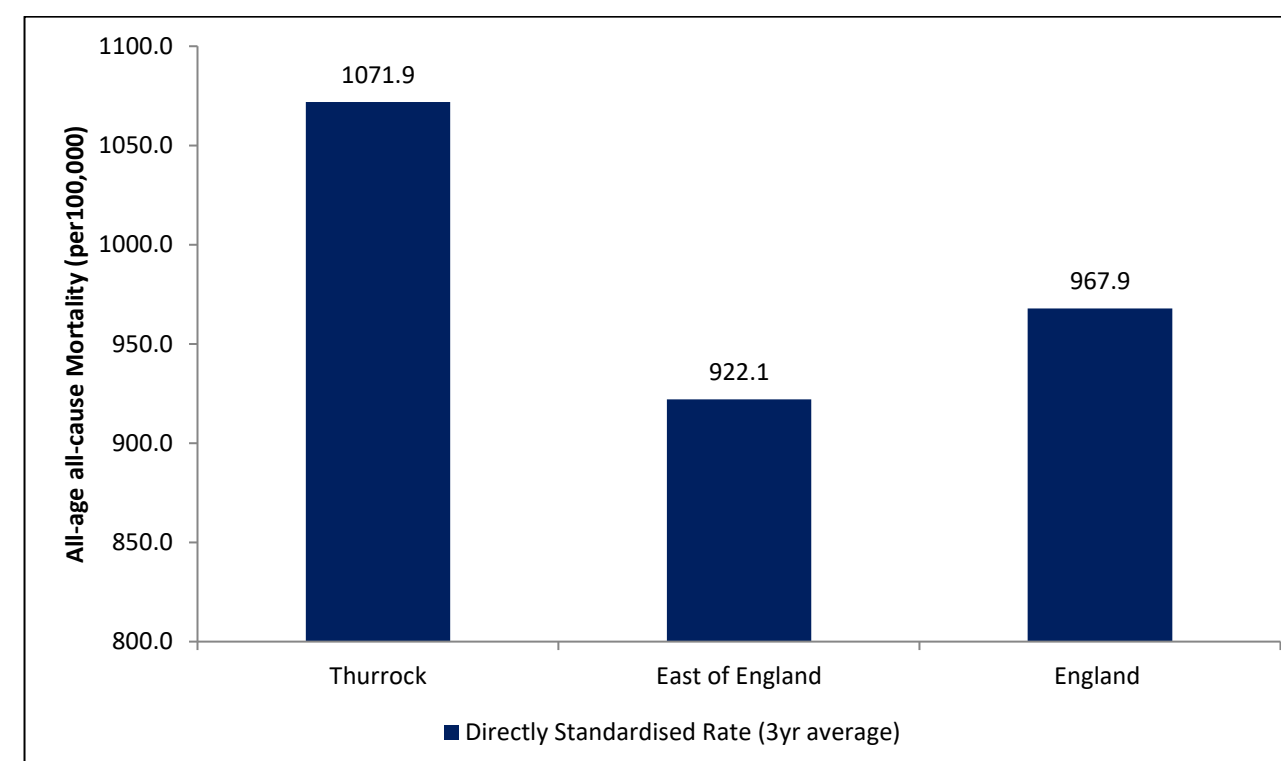
## 13.4 Physical health

13.4.1 Emergency hospital admissions for a variety of respiratory and cardiovascular diseases and conditions are higher in Thurrock compared to the national average. There is a larger disparity between Thurrock health circumstance and the national average for diseases of the respiratory system compared to diseases of the cardiovascular system.

**Table 13.1: Emergency hospital admissions**

ICD Code	Disease	Emergency Hospital Admissions Incidence Rate (per 100,000)	
		Thurrock	England
<b>Cardiovascular</b>			
I00-I09	Rheumatic heart disease	3.4	3.3
I10-I15	Hypertensive diseases	37.3	36.8
I20-I25	Ischaemic heart diseases	255.6	251.6
I26-I28	Pulmonary heart disease & diseases of pulmonary circulation	52.8	52.0
I30-I52	Other forms of heart disease	359.7	354.0
I60-I69	Cerebrovascular diseases	169.1	166.5
I70-I79	Diseases of arteries, arterioles & capillaries	39.8	39.2
I80-I89	Diseases of veins & lymphatic system nec.	75.0	73.8
I95-I99	Other & unspecified disorders of the circulatory system	48.3	47.5
<b>Respiratory</b>			
J00-J06	Acute upper respiratory infections	289.8	237.7
J09-J18	Influenza & pneumonia	615.2	504.7
J20-J22	Other acute lower respiratory infections	380.9	312.5
J30-J39	Other diseases of upper respiratory tract	41.1	33.7
J40-J47	Chronic lower respiratory diseases	455.1	373.3
J60-J70	Lung diseases due to external agents	57.0	46.8
J80-J99	Other diseases of the respiratory system	105.4	86.4

The all-age all-cause mortality rate within Thurrock is higher than both the regional and national average by approximately 150 and 104 people per 100,000 population, respectively. Cardiovascular diseases and cancer mortality rates within Thurrock have been consistently higher than the regional and national averages over the years and have shown slight decreases. In all years other than 2012 and 2017, respiratory disease mortality rate within Thurrock has also been higher than the national average (no regional comparison available) and has generally increased.



**Figure 13.9: All-age all-cause mortality**

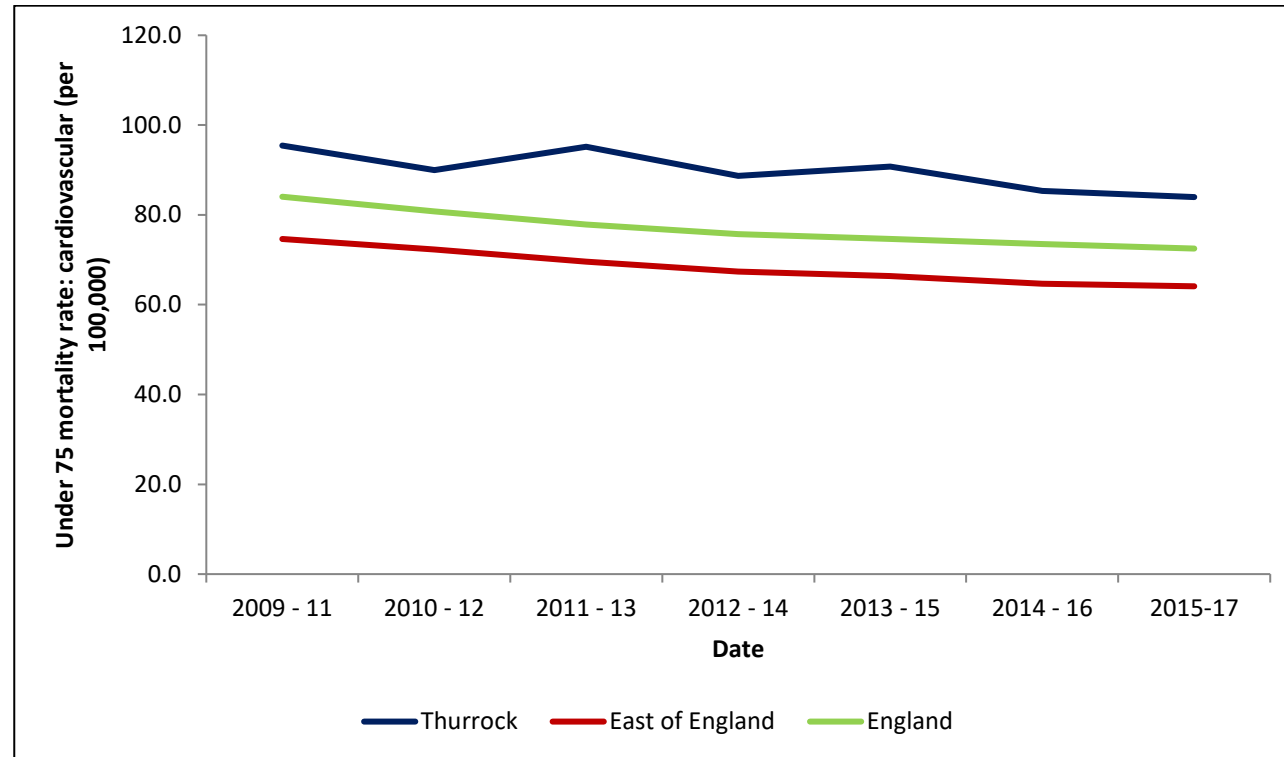


Figure 13.10: Cardiovascular mortality

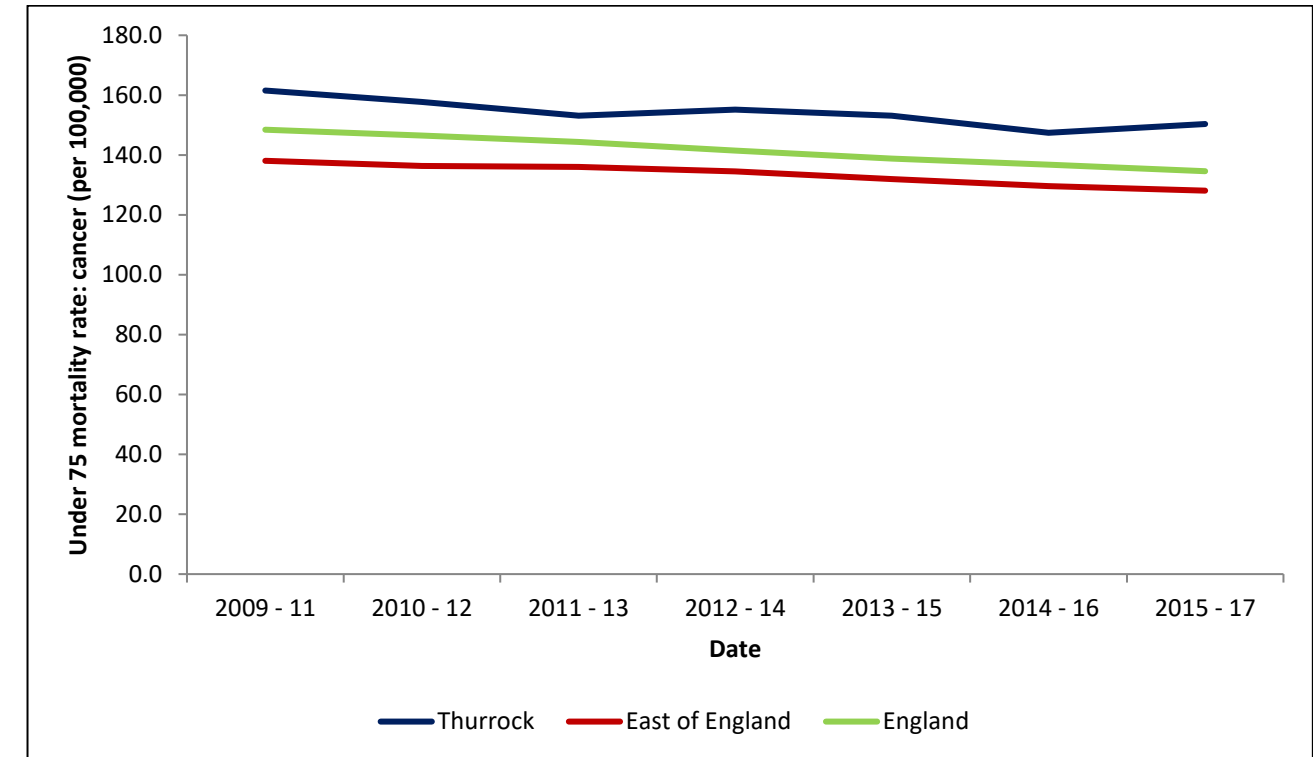


Figure 13.12: Cancer mortality

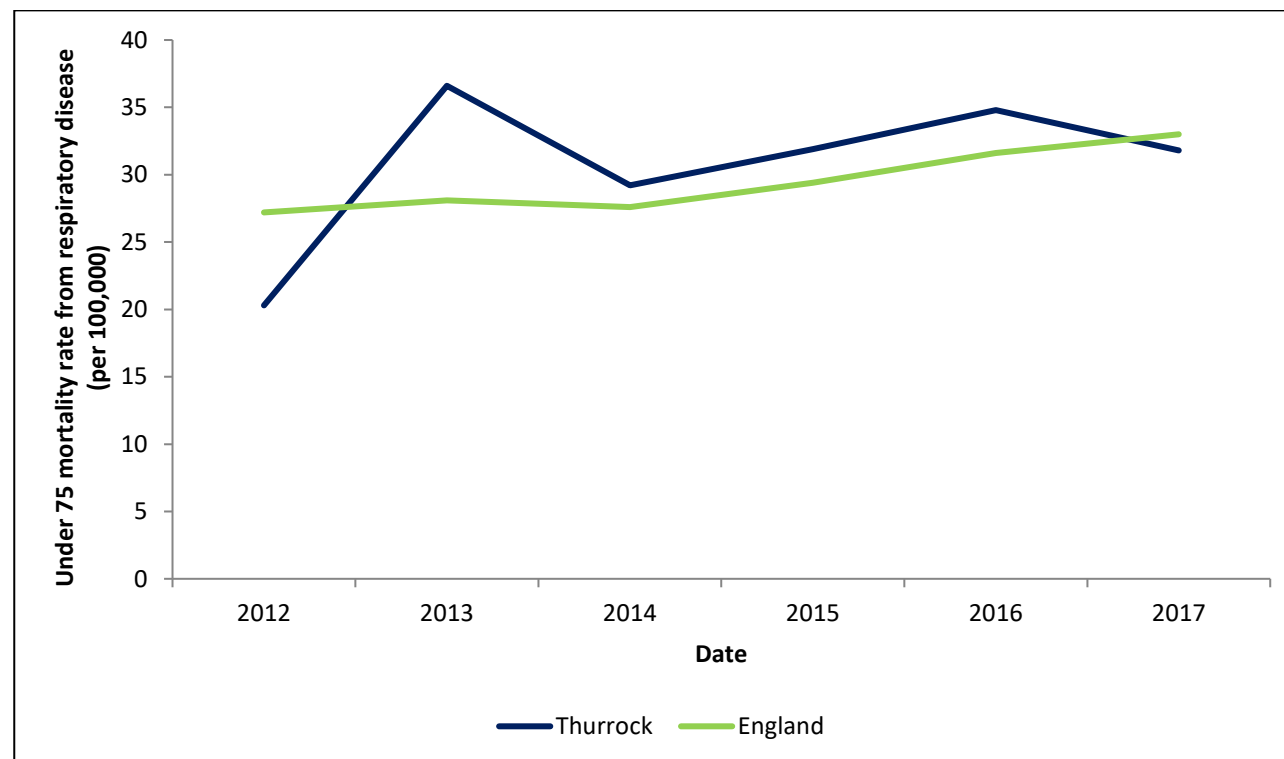


Figure 13.11: Respiratory mortality

## 13.5 Lifestyle

- 13.5.1 The proportion of obese children and excess weight in adults in Thurrock are higher than the regional and national averages and have shown a general increase. Mirroring this, the proportion of adults meeting the recommended weekly duration of physical activity in Thurrock is below the regional and national averages.
- 13.5.2 Between the years of 2013 and 2015, there was an increase in smoking prevalence in Thurrock which is contrary to the regional and national decreasing trends. Since 2015, there has been an overall decrease in smoking prevalence in Thurrock. In all years, smoking prevalence in Thurrock is consistently higher than the regional and national averages.
- 13.5.3 Hospital stays for alcohol-related harm in Thurrock are consistently below the regional and national averages and since 2014/15 but have shown a gradual increase, contrary to regional and national trends which have remained relatively static.



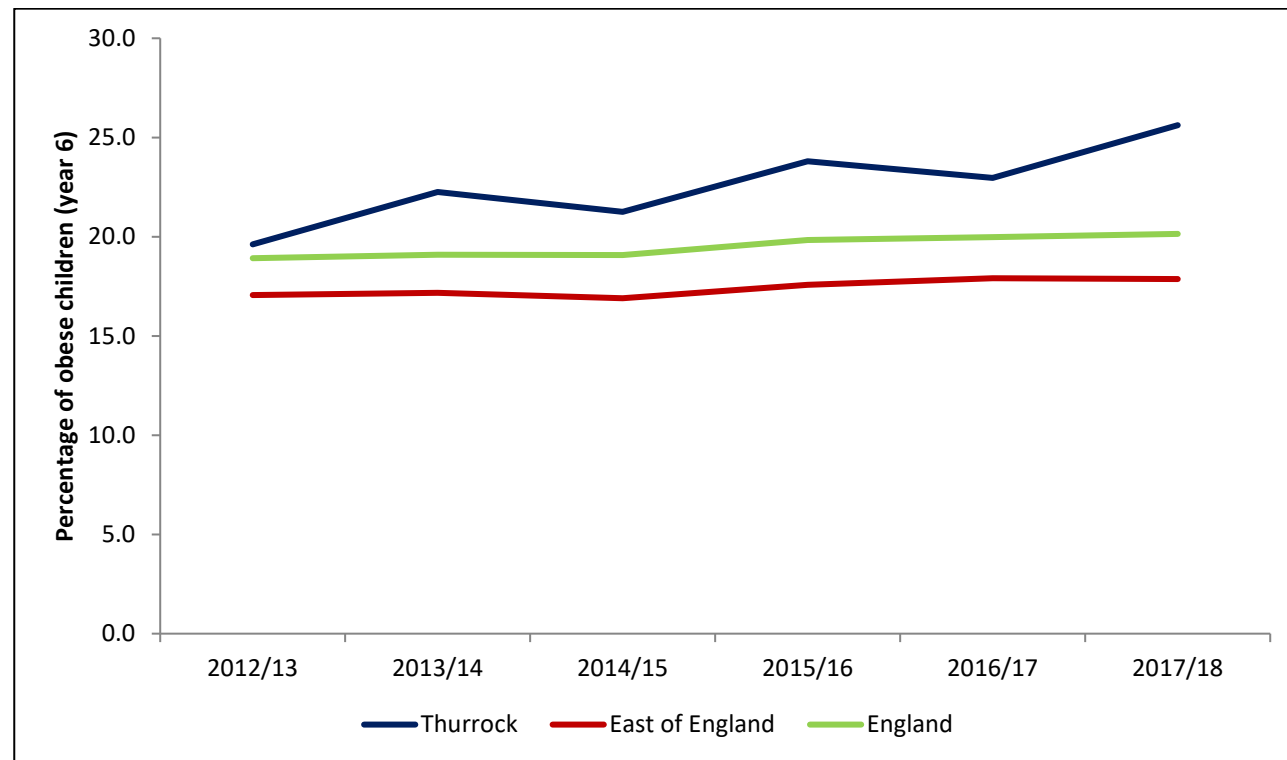


Figure 13.13: Childhood obesity

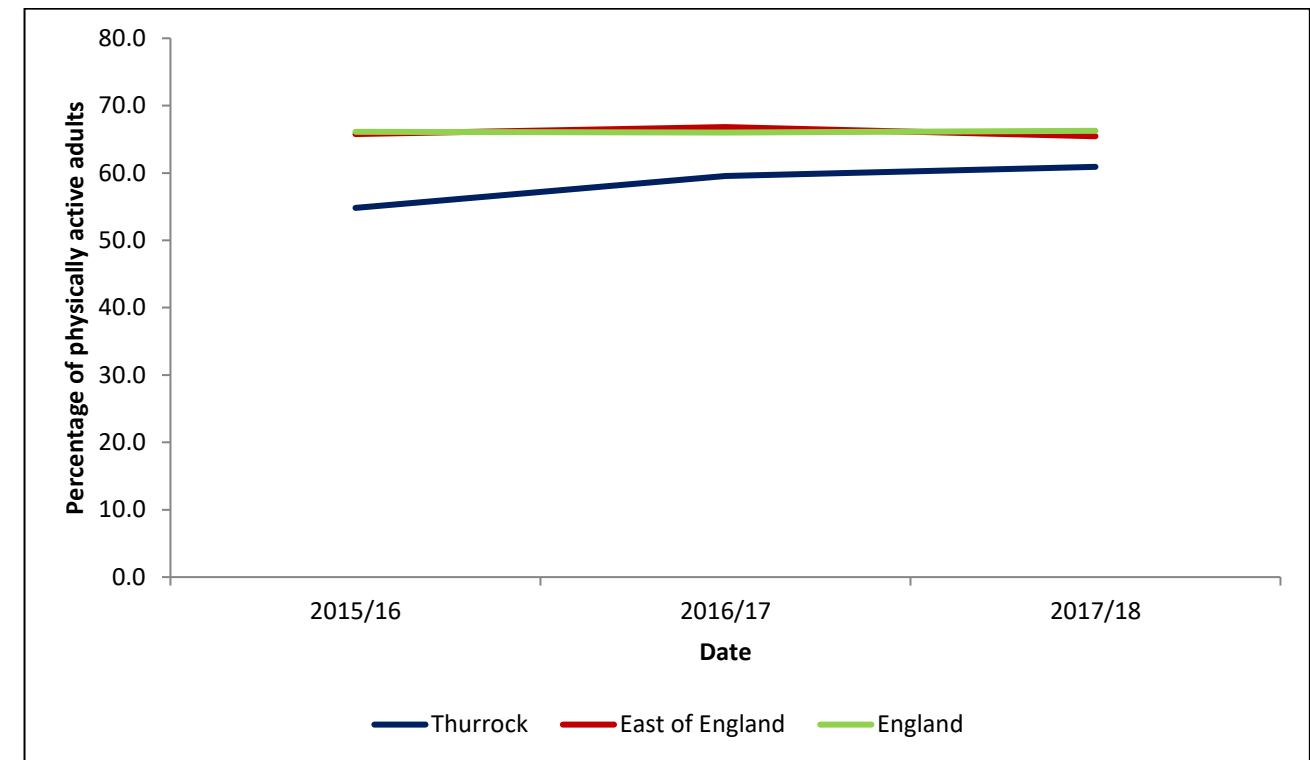


Figure 13.15: Physical activity participation

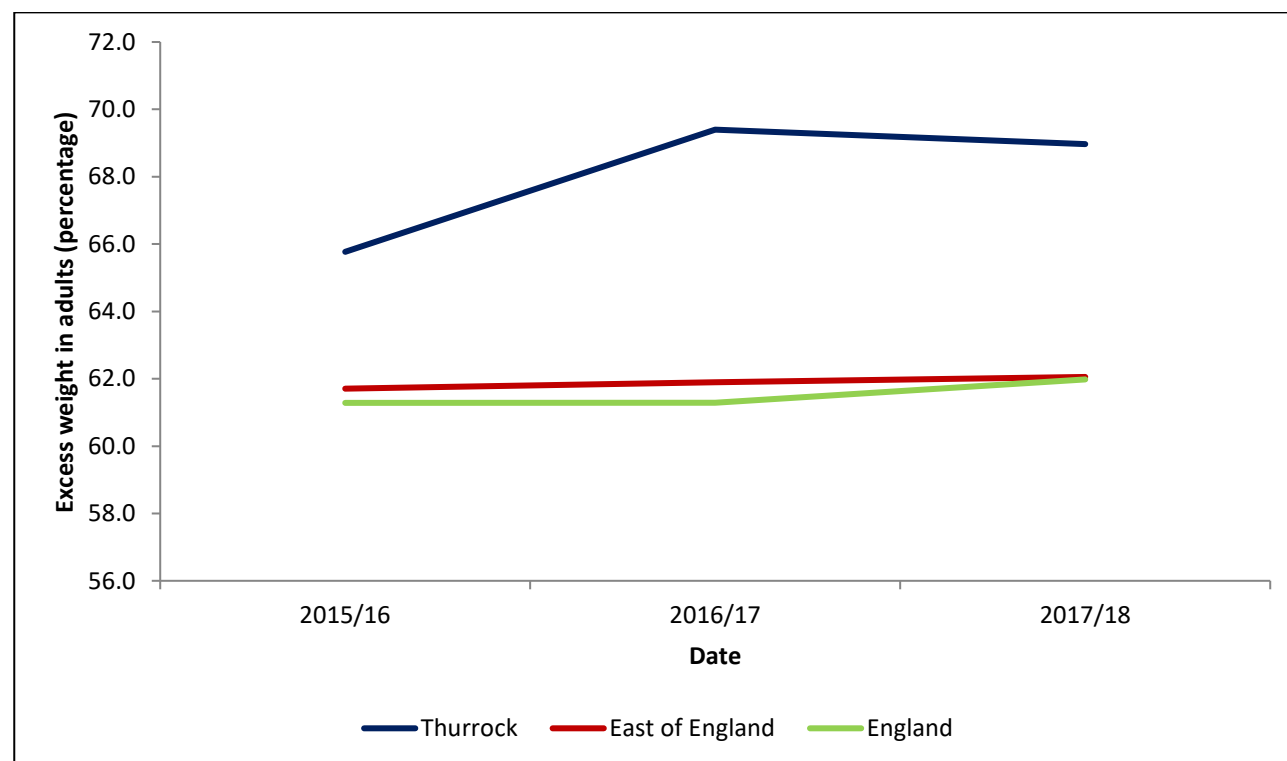


Figure 13.14: Excess weight in adults

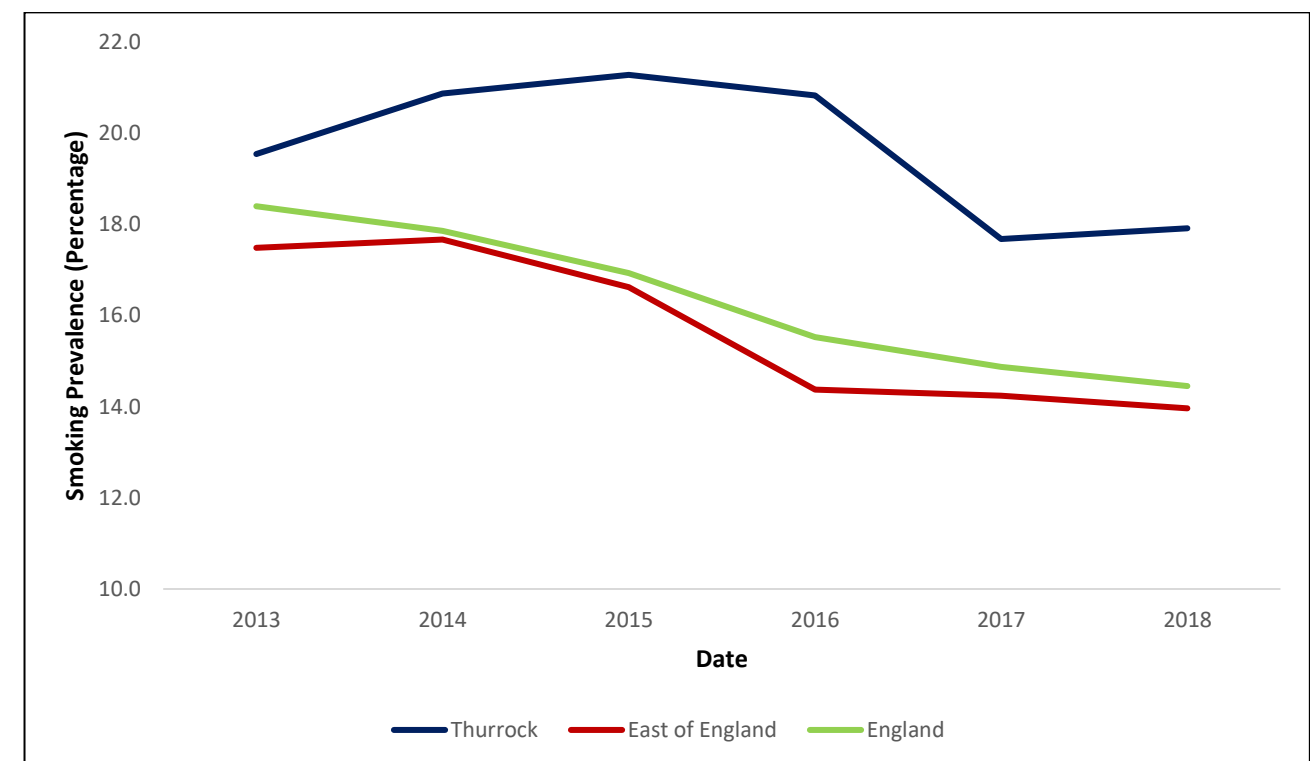


Figure 13.16: Smoking prevalence

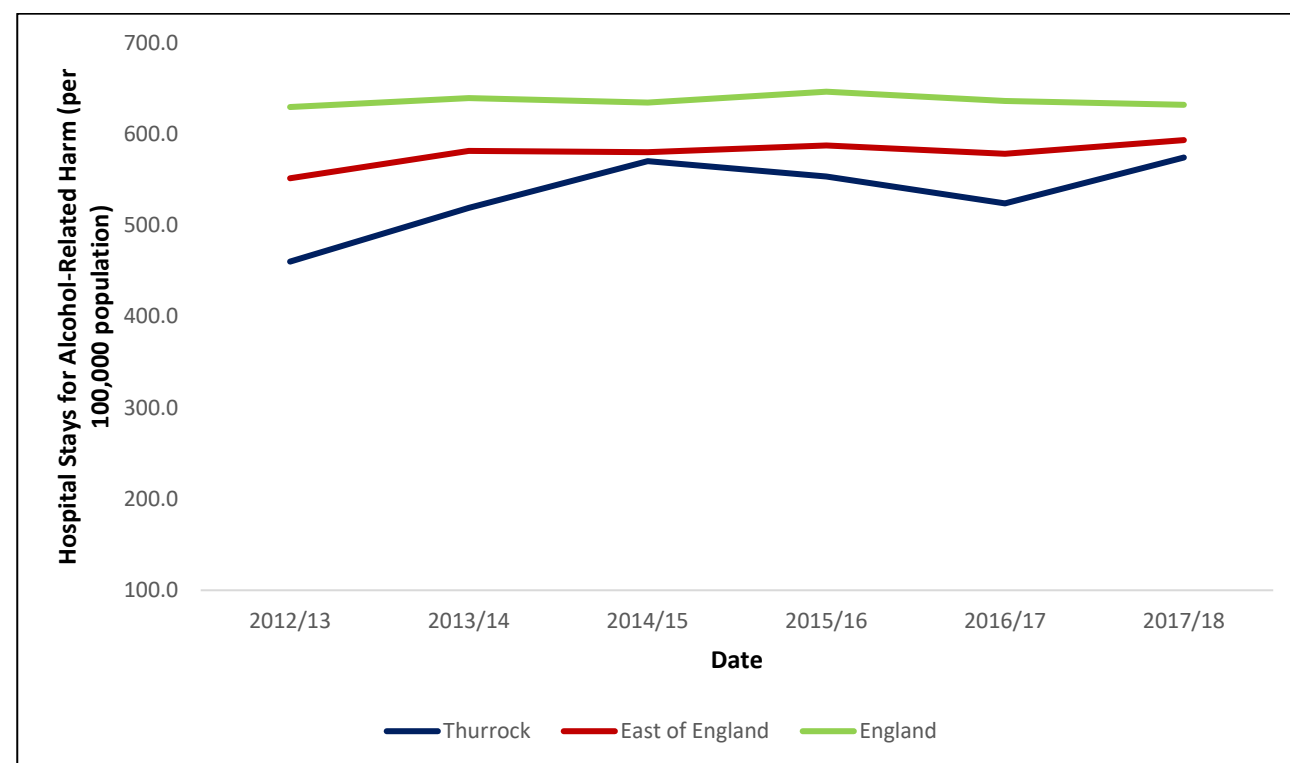


Figure 13.17: Hospital stays for alcohol-related harm

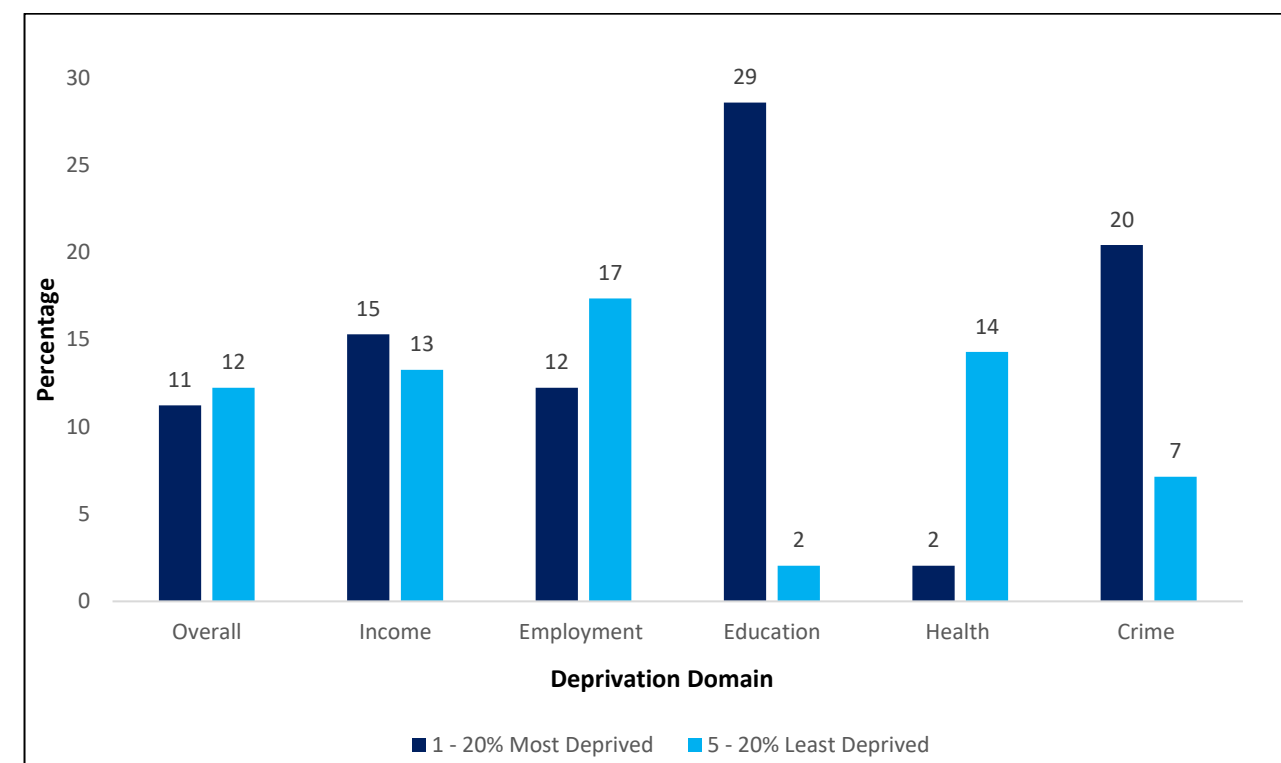


Figure 13.18: Deprivation summary

## 13.6 Deprivation

- 13.6.1 The Index of Multiple Deprivation is produced at Lower Super Output Area (LSOA) level, of which there are 32,844 in the country, and the LSOAs are ranked dependent on their relative level of deprivation. Deprivation scores are produced for seven separate domains comprising employment, income, education, proximity to services, living environment, crime and disorder, and the existing burden of poor health. While each domain can be represented individually, they can also be combined to produce an overall score. In this case, the 'barriers to housing and services' and 'living environment deprivation' domains are not analysed individually but are still incorporated into the overall deprivation score.
- 13.6.2 Analysis shows that overall, there is a slightly lower proportion of LSOAs categorised within the 20% most deprived nationally compared to the 20% least deprived nationally. The education and crime domains are the most deprived within Thurrock on the basis that there are substantially more LSOAs categorised within the most deprived 20% nationally compared to the least deprived 20% nationally. The health domain is the least deprived within Thurrock on the basis that there are substantially less LSOAs categorised within the most deprived 20% nationally compared to the least deprived 20% nationally.

## 13.7 Socio-economic indicators

- 13.7.1 Employment and unemployment figures in Thurrock are all relatively similar to the county, regional and national averages. However, the proportion of the population in Thurrock who are claiming jobseeker's allowance is increasing and remains consistently higher than the county, regional and national averages.
- 13.7.2 Median income levels in Thurrock for full time employees has shown a general increase since 2014 (with a noticeable decrease in 2017) but remains consistently below the county average, and in recent years (2017 and 2018), the regional average but more comparable to the national average.
- 13.7.3 Qualification attainment in Thurrock is lower for NVQ1+ to NVQ4+ level of qualification compared to the county, regional and national averages. However, the proportion of the population achieving "other" qualifications is higher than the county, regional and national averages. The proportion of the population with no qualifications is 5% higher than the national average, and 4% higher than the county and regional averages.

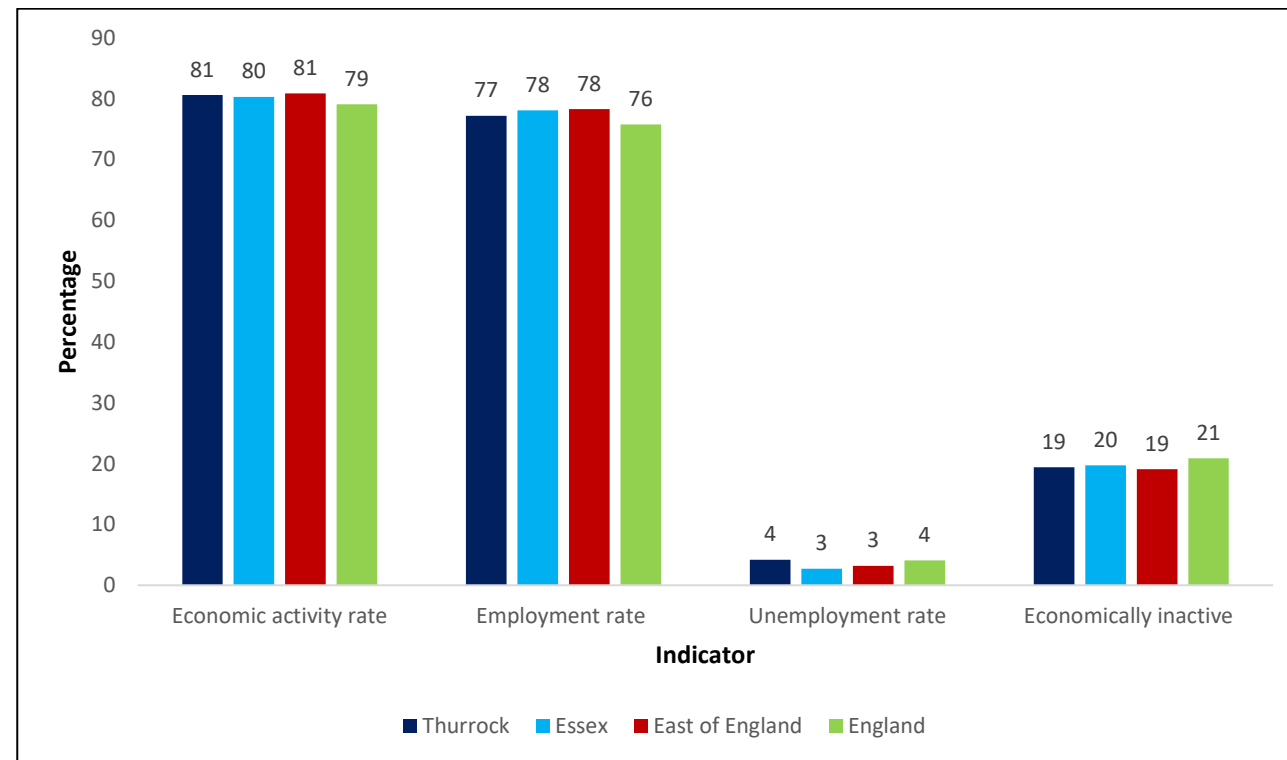


Figure 13.19: Employment statistics

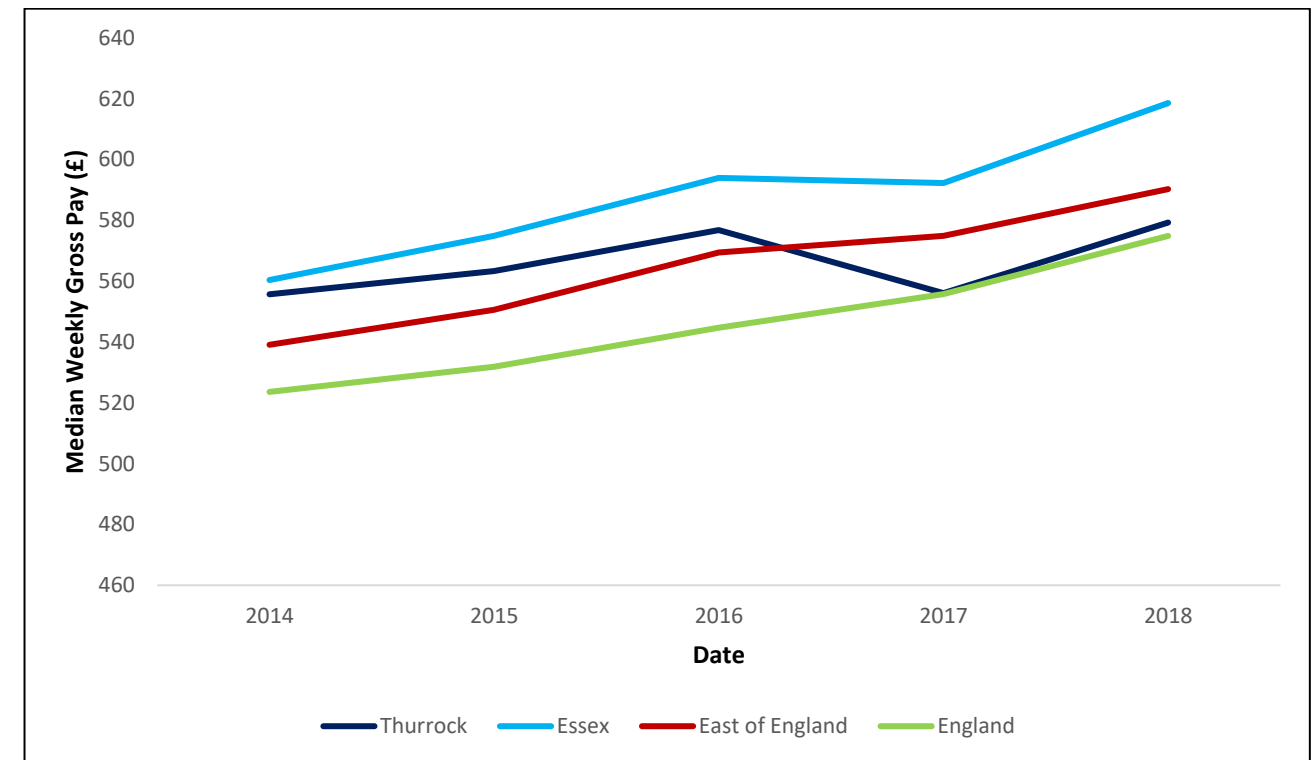


Figure 13.21: Income

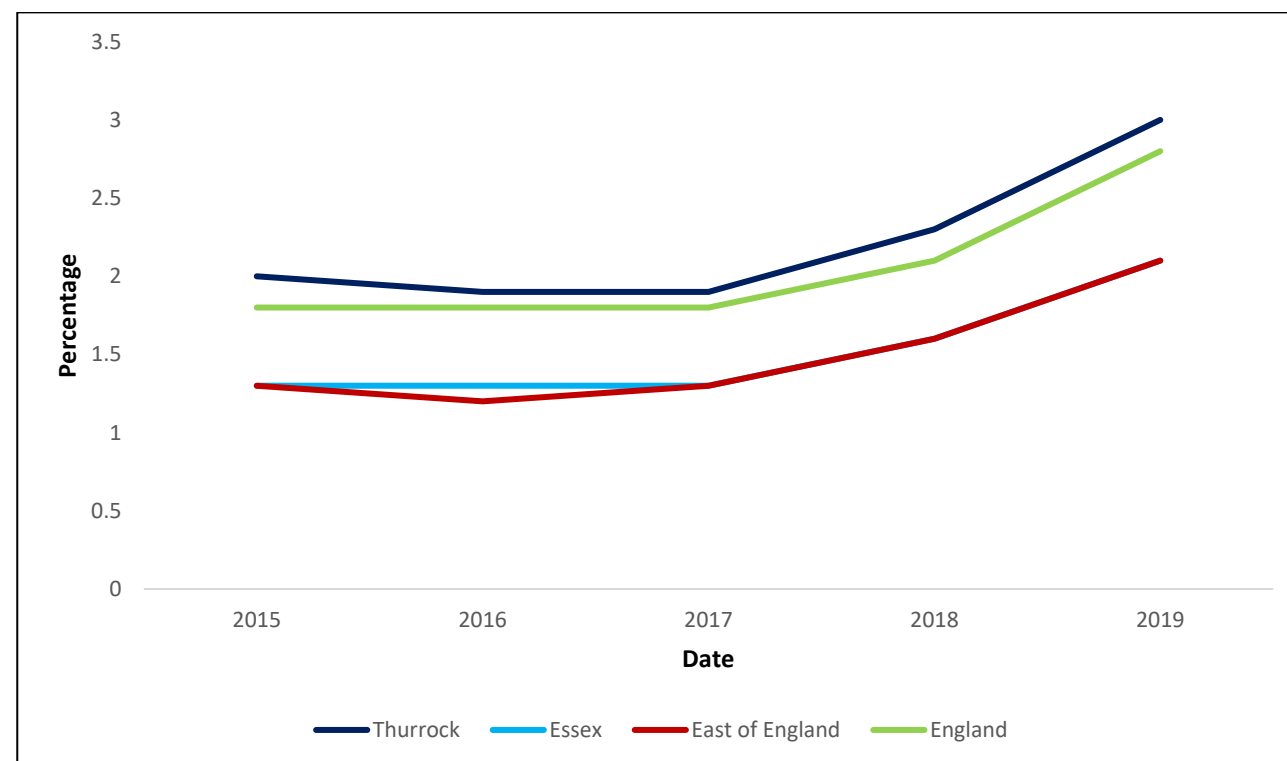


Figure 13.20: Job seekers allowance claimants

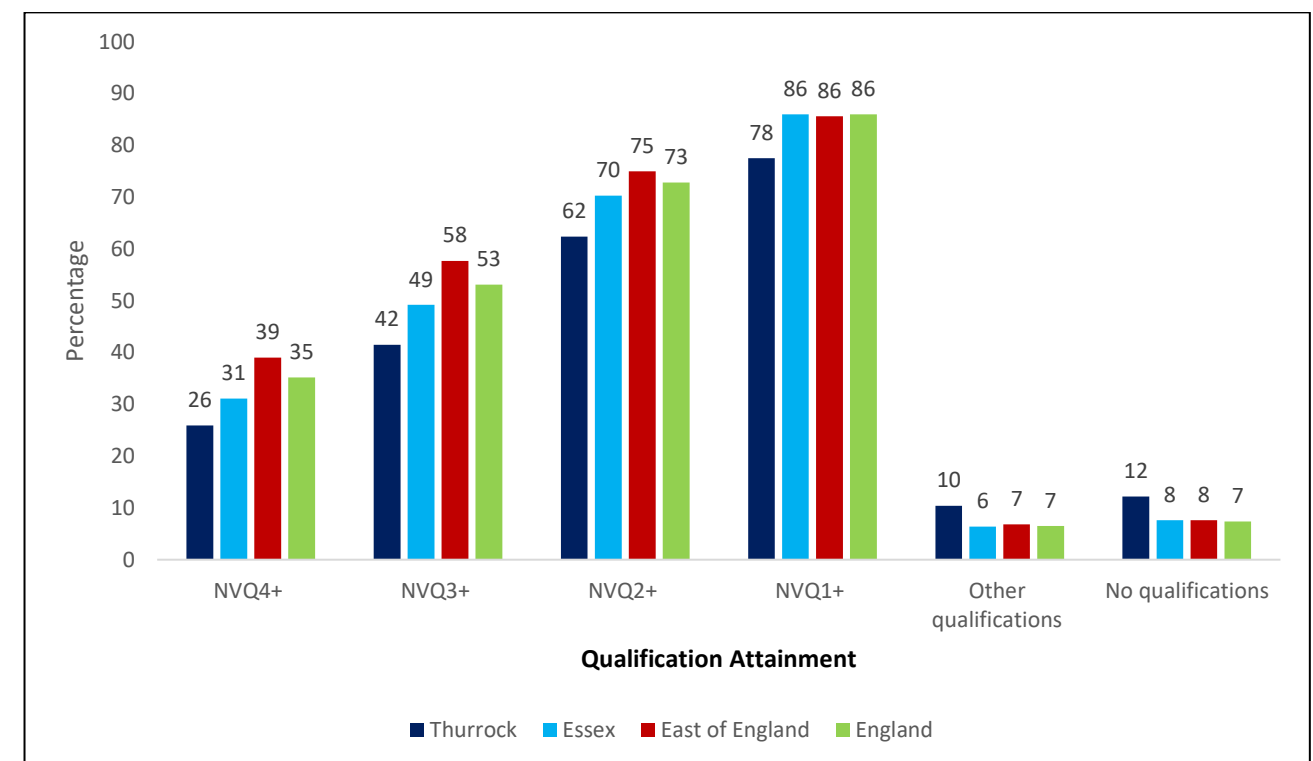


Figure 13.22: Qualification attainment

### 13.8 Ward level baseline

- 13.8.1 The proposed development would be located in: Tilbury East; Tilbury St. Chads; and Tilbury Riverside and Thurrock Park wards. Together these wards make up the ward-level baseline study area.
- 13.8.2 Of the relevant wards which surround the proposed development, East Tilbury is the only ward which has a higher male HLE (for the years between 2009 to 2013) when compared to the national average. The average male HLE within the ward study area remains below the national average. All wards which surround the proposed development have a lower female HLE when compared to the national average.
- 13.8.3 East Tilbury is the only ward within the ward study area where there is a lower mortality rate compared to the national average SAR (Standardised Admissions Ratio) (for all-cause mortality, mortality from circulatory disease, mortality from coronary heart disease (CHD) and mortality from stroke). All other wards have a higher mortality rate for all diseases and conditions data has been collected for; in particular, Tilbury Riverside and Thurrock Park ward has nearly twice the mortality rate SAR in comparison to the national average. The study area average shows a higher mortality rate SAR for all diseases and conditions data has been collected for, when compared to the national average.

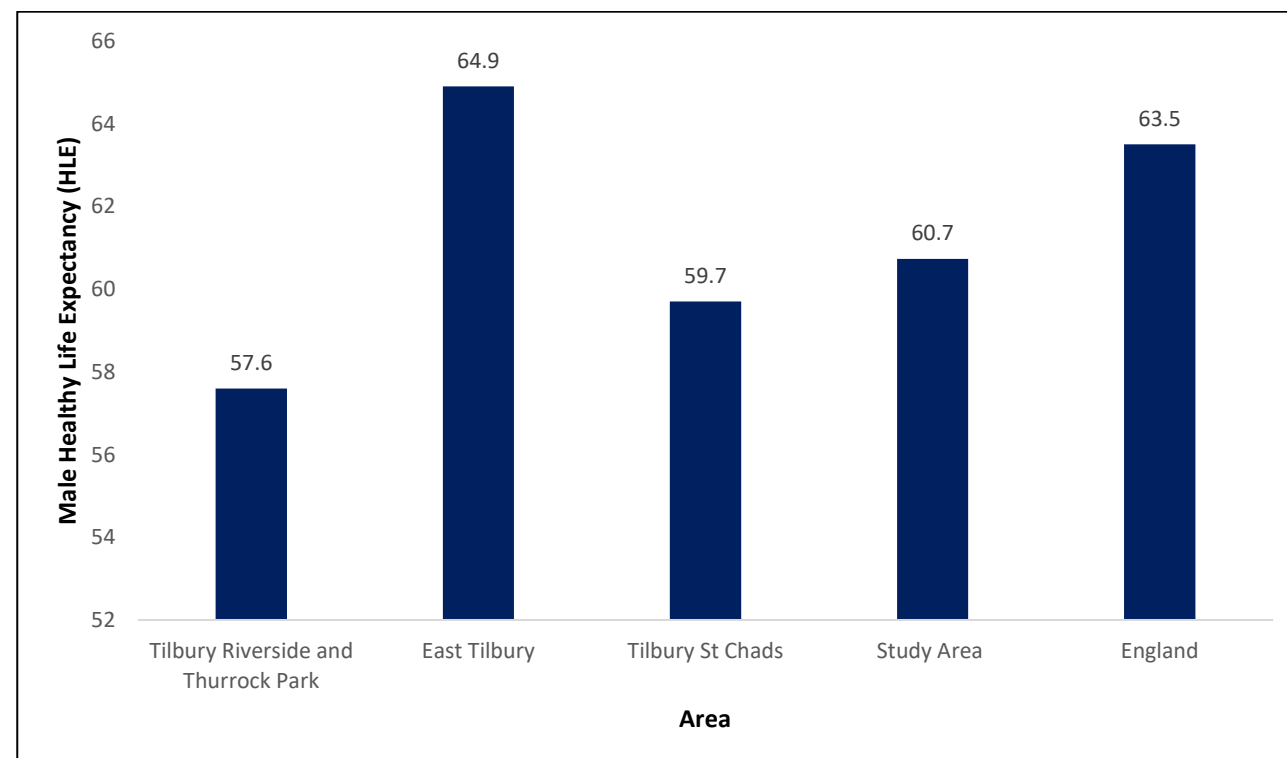


Figure 13.23: Male HLE

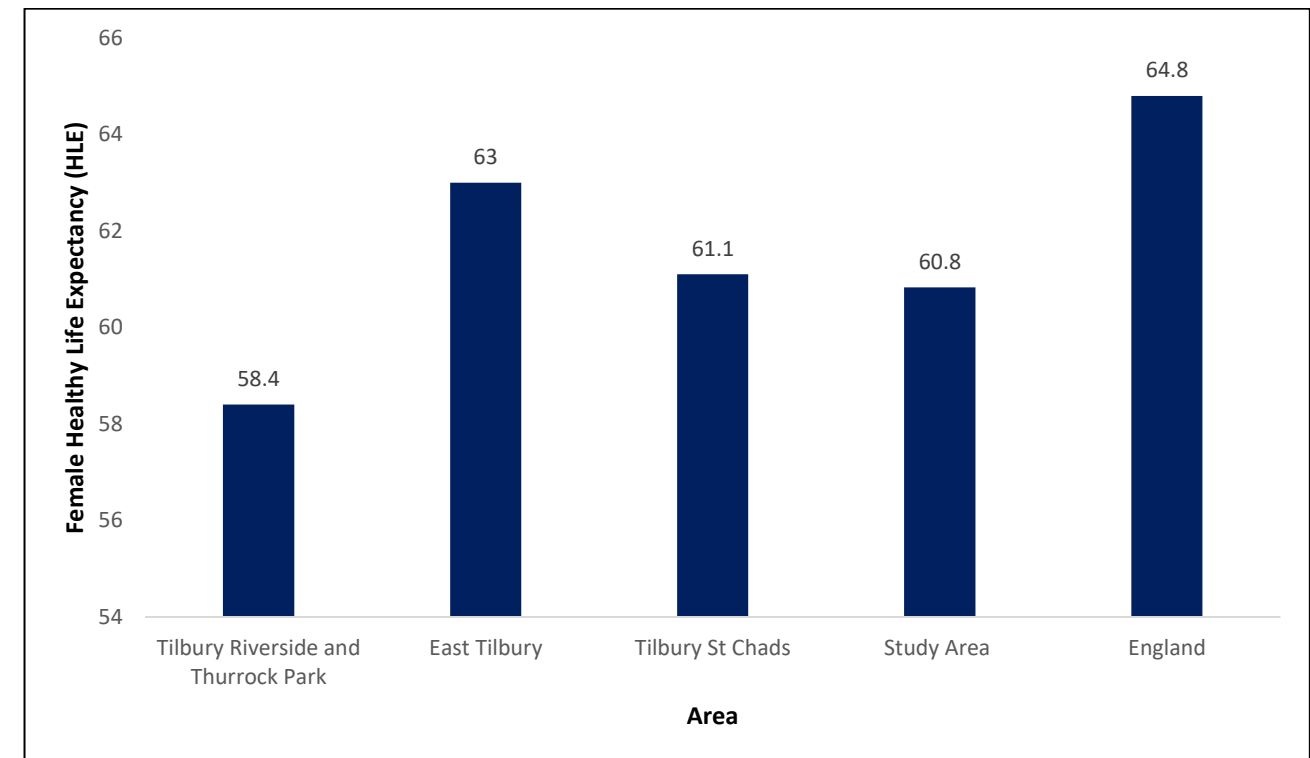


Figure 13.24: Female HLE

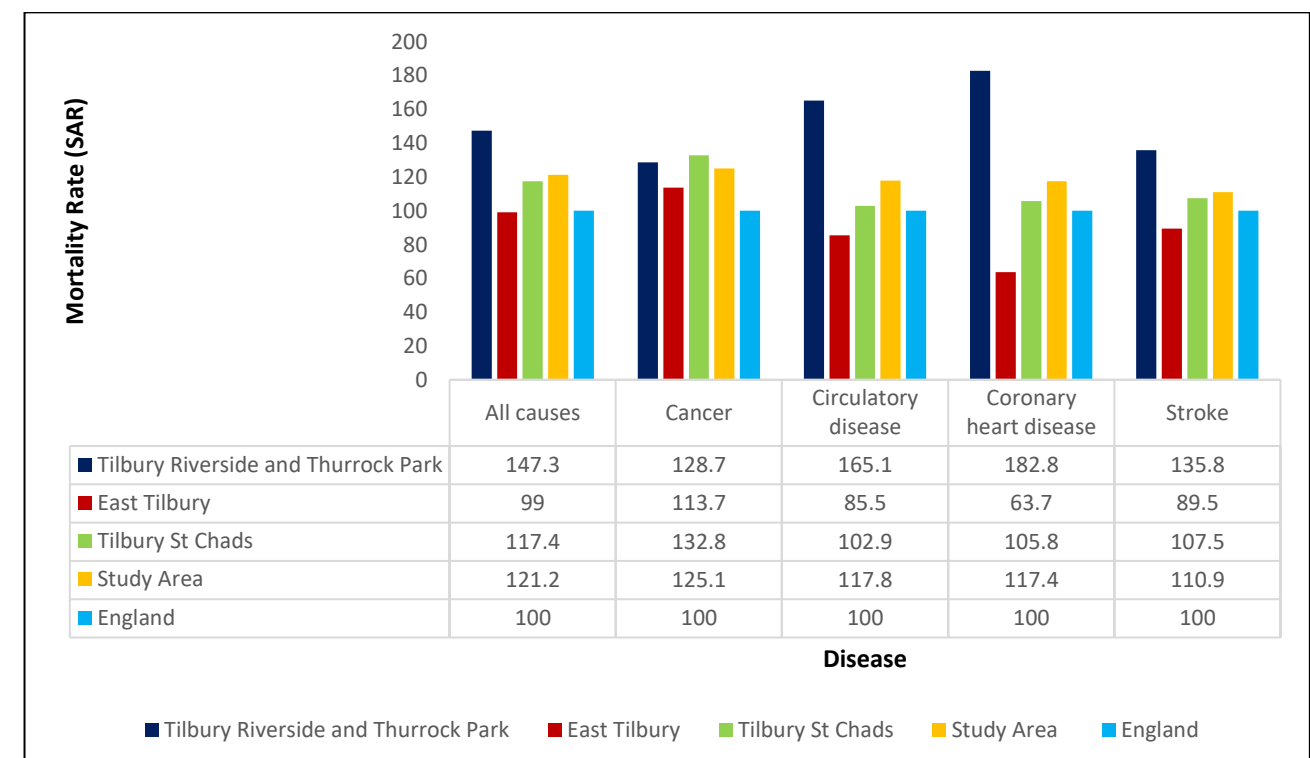


Figure 13.25: Mortality rate (SAR) for various diseases and conditions

- 13.8.4 Emergency hospital admissions SAR for all-causes within all relevant wards is lower than the national average. However, all disease specific emergency hospital admissions SAR across the relevant wards (excluding emergency hospital admissions for CHD within East Tilbury) are higher than the national average. In particular, emergency hospital admissions SAR is over twice the national average for chronic obstructive pulmonary disease (COPD) within Tilbury Riverside and Thurrock Park.
- 13.8.5 The Standardized Incidence Ratio (SIR) for cancer indicator shows that Tilbury Riverside and Thurrock Park ward is the only ward within the study area to have a lower incidence of cancer (SIR) when compare to the national average. All other relevant wards have a higher incidence of cancer (SIR) when compared to the national average.
- 13.8.6 Hospital stays for self-harm (used as a proxy indicator for mental health) and alcohol related harm (used as a proxy indicator for mental health and lifestyle) are below the national average within all relevant wards.

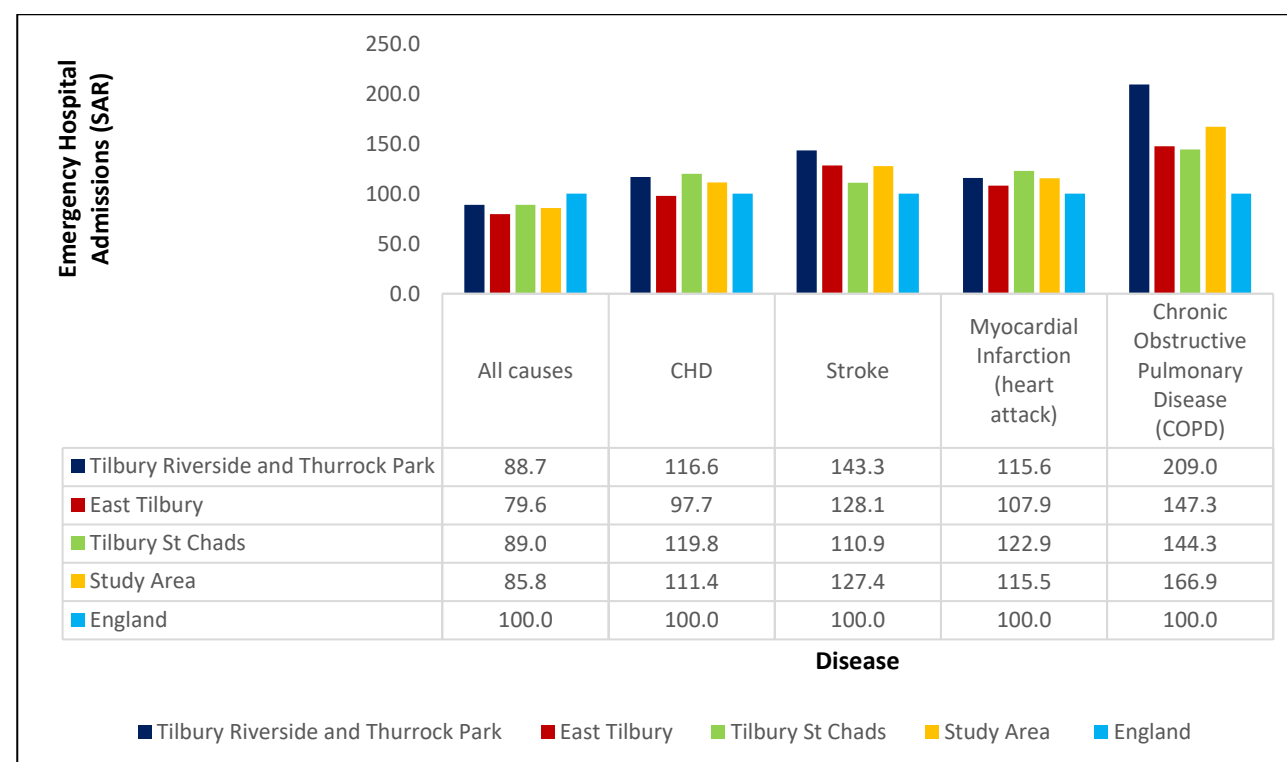


Figure 13.26: Emergency hospital admissions (SAR)

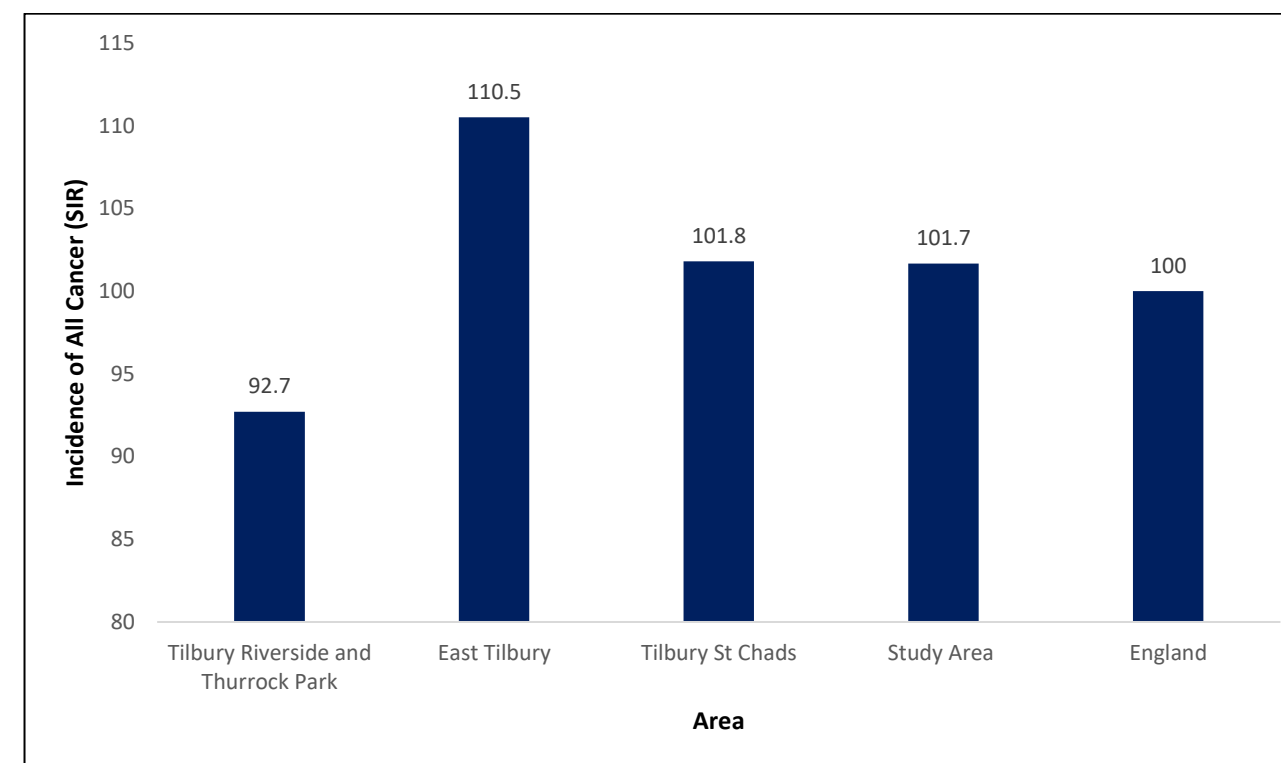


Figure 13.27: Incidence of cancer (SIR)

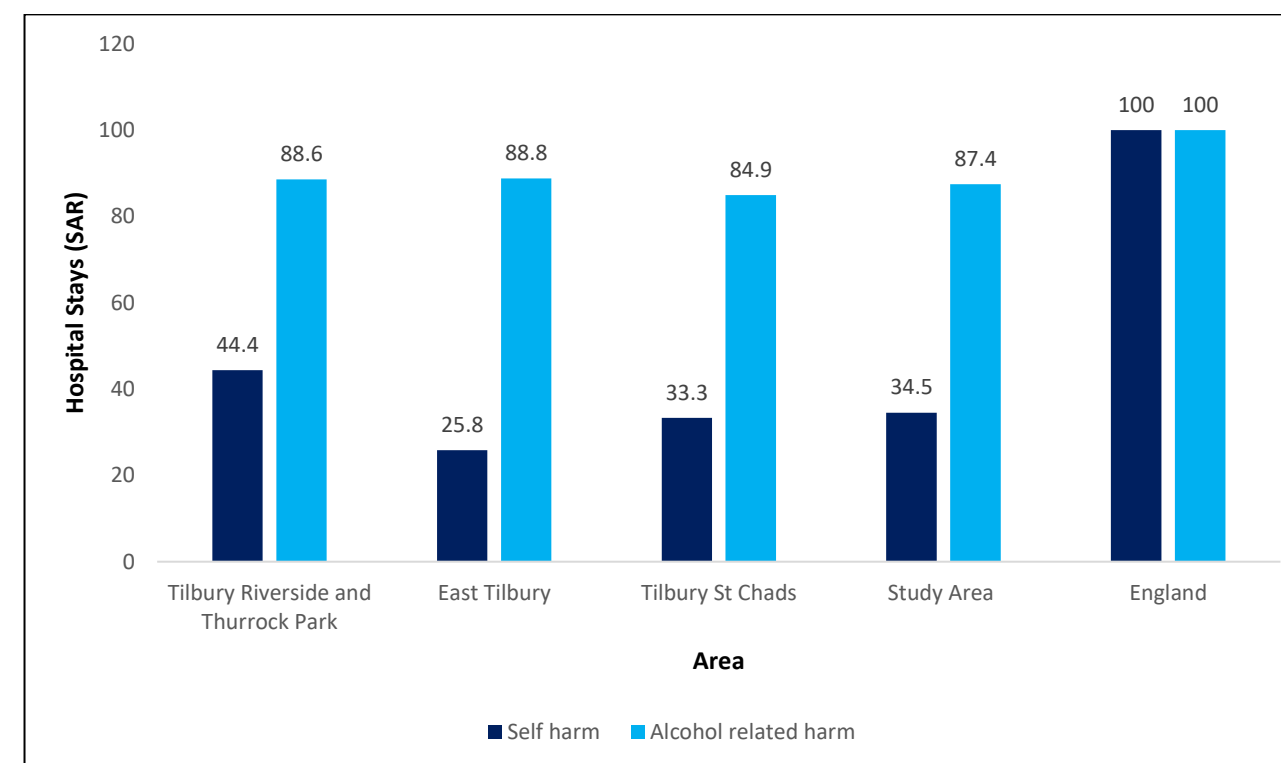


Figure 13.28: Hospital stays for self harm and alcohol related harm

13.8.7 The percentage of obese adults and obese children (used as proxy indicators for lifestyle) is higher across all wards within the relevant study area when compared to the national average.

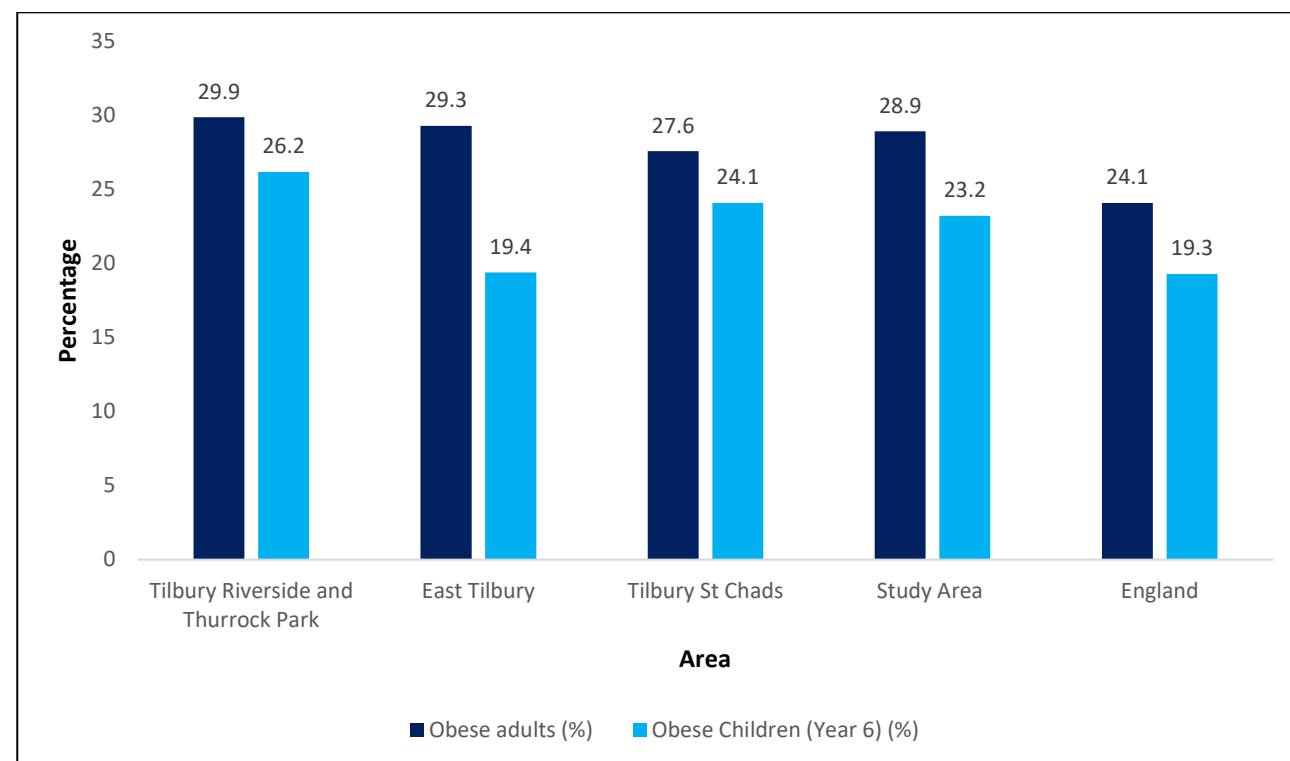


Figure 13.29: Percentage of obese adults and obese children

13.8.8 Regarding socio-economic indicators, there is a range of unemployed and long-term unemployed residents across the relevant wards within the study area.

13.8.9 The percentage of unemployed residents within East Tilbury ward is equal to the national average, while Tilbury St Chads and Tilbury Riverside and Thurrock Park wards have higher levels of unemployment when compared to the national average. In particular, unemployment rate within Tilbury Riverside and Thurrock Park ward is more than double the national average.

13.8.10 Long-term unemployment (per 1,000 population) is higher in all the relevant wards compared to the national average. Similarly to unemployment rate, Tilbury Riverside and Thurrock Park ward is over double the national average.

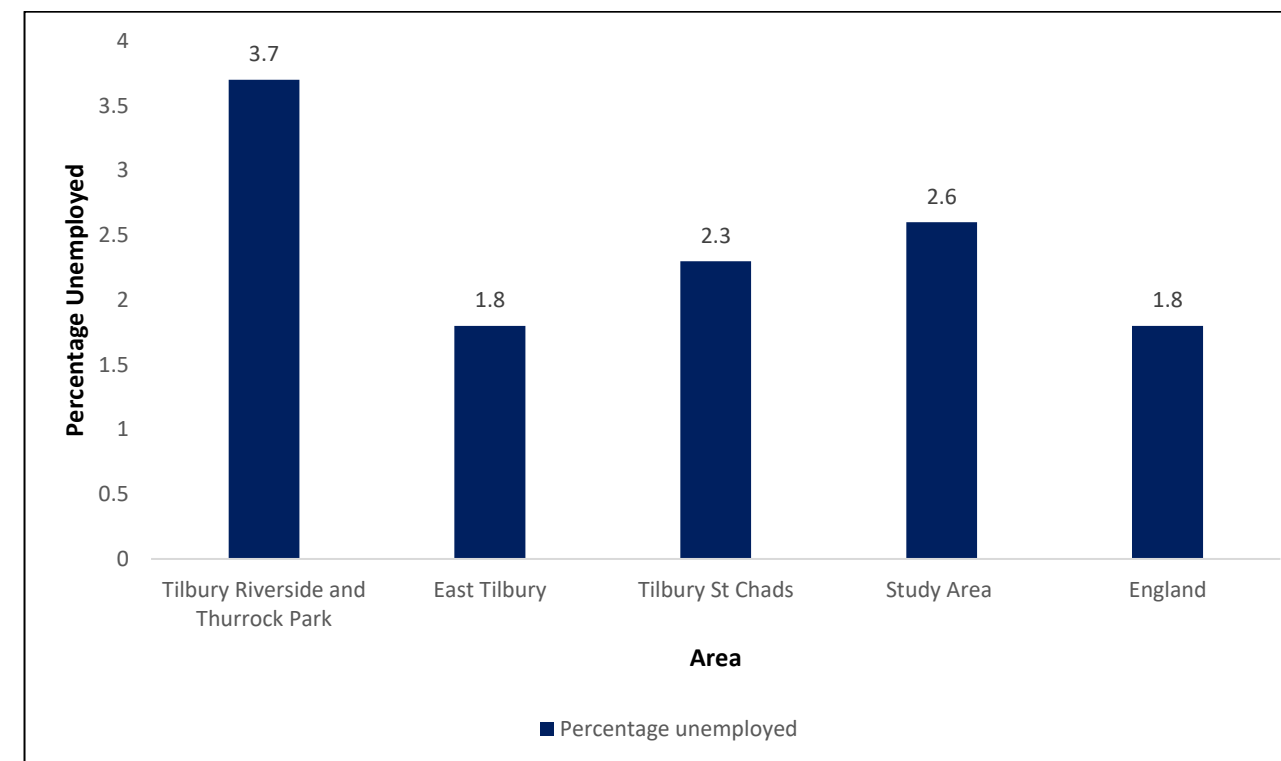


Figure 13.30: Percentage of unemployed residents

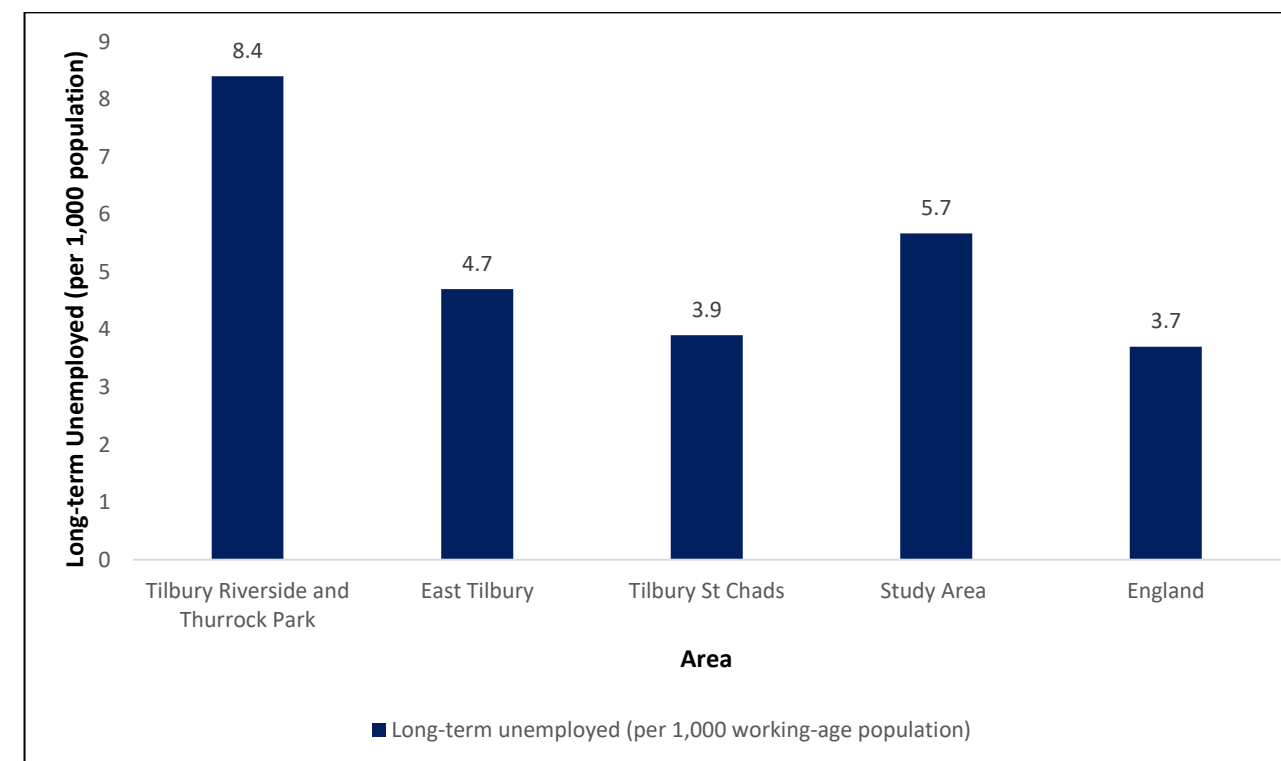


Figure 13.31: Percentage of long-term unemployed residents (per 1,000 population)

## 13.9 Conclusion

- 13.9.1 On the above basis, population health throughout Thurrock is mixed depending on which indicators are being analysed.
- 13.9.2 When analysing physical health indicators, there is generally a higher burden of poor health in Thurrock, albeit higher male HLE and lower mortality from respiratory disease within Thurrock in recent years when compared to the regional or national average. Regarding mental health indicators, most recent statistics show a lower burden of poor mental health compared to the regional and national average; however, particularly for suicide rate there has been some fluctuation against comparators.
- 13.9.3 The majority of lifestyle indicators show a high proportion of children and adults who are overweight which is generally associated with negative behaviours such lack of exercise and smoking. The exception to this is excessive alcohol intake where it is evident that a lower proportion of people within Thurrock are admitted to hospital for alcohol related harm.
- 13.9.4 Overall, while health circumstance is improving for some indicators (particularly for mental health), the trend is not uniform, with high burdens of poor physical health and negative lifestyle-related indicators in particular.

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