



Office for Health
Improvement
& Disparities

Atlas of health variation in head and neck cancer in England

Head and neck cancer mortality

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5. Head and neck cancer mortality

Analyses for this atlas shows in England in 2020 there were just under 3,500 deaths from head and neck cancer. This has risen steadily from just over 2,800 annual deaths in 2013. The mortality rate for head and neck cancer continued to increase in 2020 while for all cancers the mortality rate decreased.⁶⁶

There was significant geographic variation in mortality rates with the integrated care boards (ICBs) with the highest rates having double the rates of those with the lowest. There is socio-economic difference with people living in the most deprived quintile having mortality rates more than 2.5 times the rate of those in the least deprived quintile.

In England the mortality rate from head and neck cancer between 2013 and 2020 for males was 9.4 per 100,000, almost three times the mortality rate for females at 3.4 per 100,000. Across the UK for males, head and neck cancer is the 10th most common cause of cancer death, for females it is the 17th most common.⁷

Mortality from head and neck cancer in the UK had decreased from the 1970s, however, it has been gradually increasing since 2006, reflecting rising incidence and no improvement in survival rates.^{9 12} Head and neck cancer mortality is projected to rise by 12% between 2023 to 2025 and 2038 to 2040.⁷ By 2038 to 2040 there could be 6,700 deaths from head and neck cancer per year in the UK.⁷

Head and Neck 5000, a prospective cohort study of people with head and neck cancer, found that current smokers had approximately 70% higher all-cause mortality compared with non-smokers and previous smokers were 40% more likely to die during follow up.⁶⁷ For alcohol there was no difference in mortality risk between active drinkers and non-drinkers.⁶⁷ Inequality in head and neck cancer mortality has been reported for several area-based and individual measures of socio-economic status including the index of multiple deprivation (IMD), educational attainment, household income, proportion of income from benefits and financial concerns. Inequalities by IMD and educational attainment were explained by age, sex, health and behavioural factors, however these factors did not fully explain inequalities by household income and proportion of income from benefits.⁶⁸

5.1: Variation in mortality of head and neck cancer in England

Box plot time series 5.1: Trend in variation in mortality rate of head and neck cancer across ICBs in England (2013 to 2020)

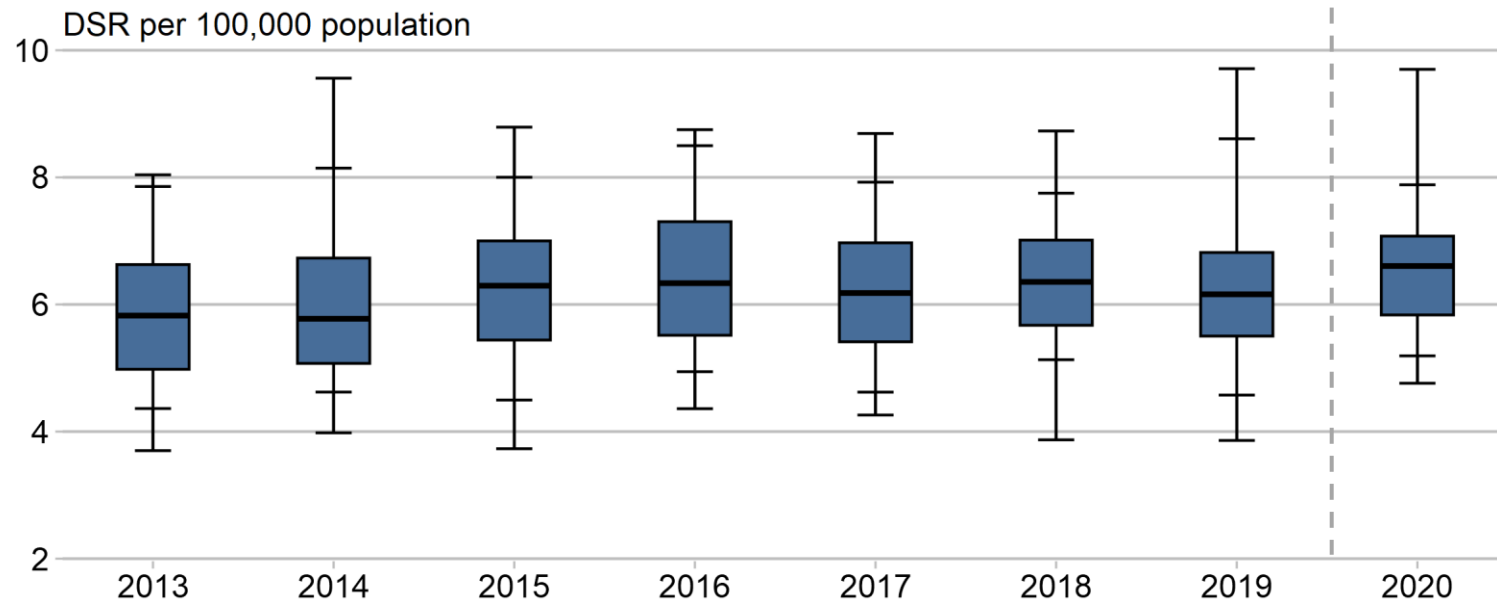


Table time series 5.1: Trend in variation in mortality rate of head and neck cancer across ICBs in England (2013 to 2020)

DSR per 100,000 population

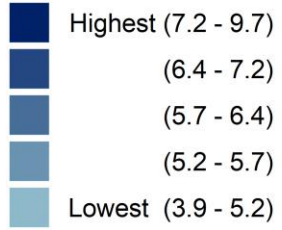
Year	2013	2014	2015	2016	2017	2018	2019	Significance 2013 to 2019	2020
Maximum to minimum	4.3	5.6	5.1	4.4	4.4	4.9	5.9	No significant change	4.9
75th to 25th percentile	1.6	1.7	1.6	1.8	1.6	1.3	1.3	No significant change	1.2
95th to 5th percentile	3.5	3.5	3.5	3.6	3.3	2.6	4.0	No significant change	2.7
Median	5.8	5.8	6.3	6.3	6.2	6.4	6.2	No significant change	6.6

The box plot and data table show the distribution of ICB mortality rates of head and neck cancer for the period 2013 to 2020. There was no significant change in the median from 2013 to 2019.

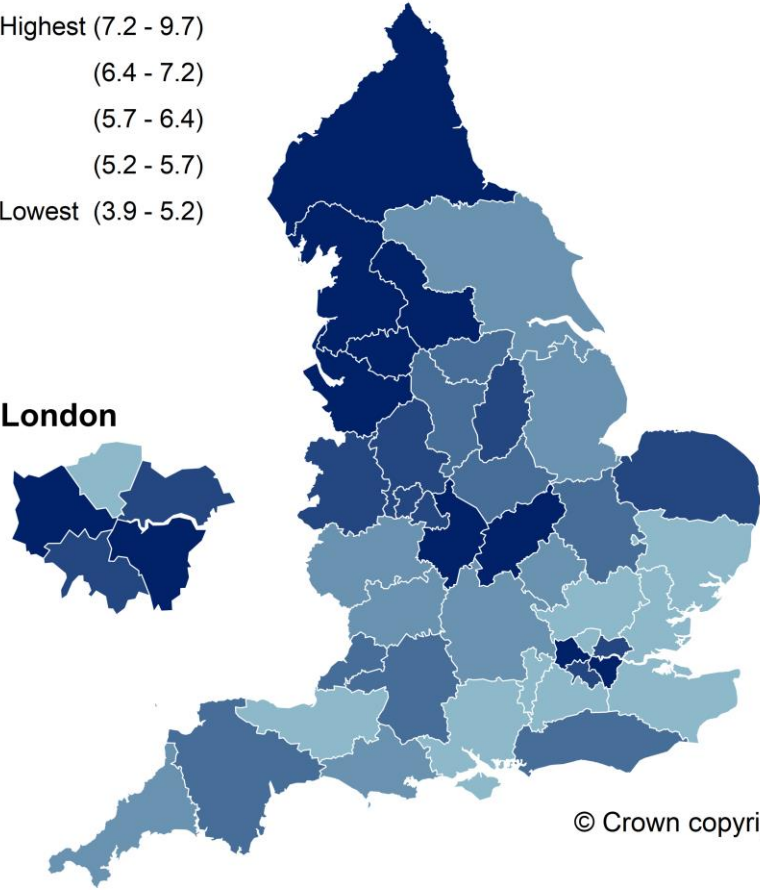
Map 5.1: Variation in mortality rate of head and neck cancer by ICB (2019)

DSR per 100,000 population (optimum value: low)

Equal-sized quintiles of geographies

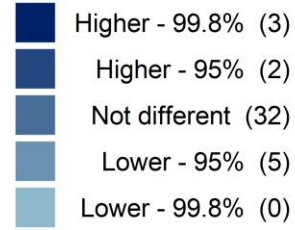


London

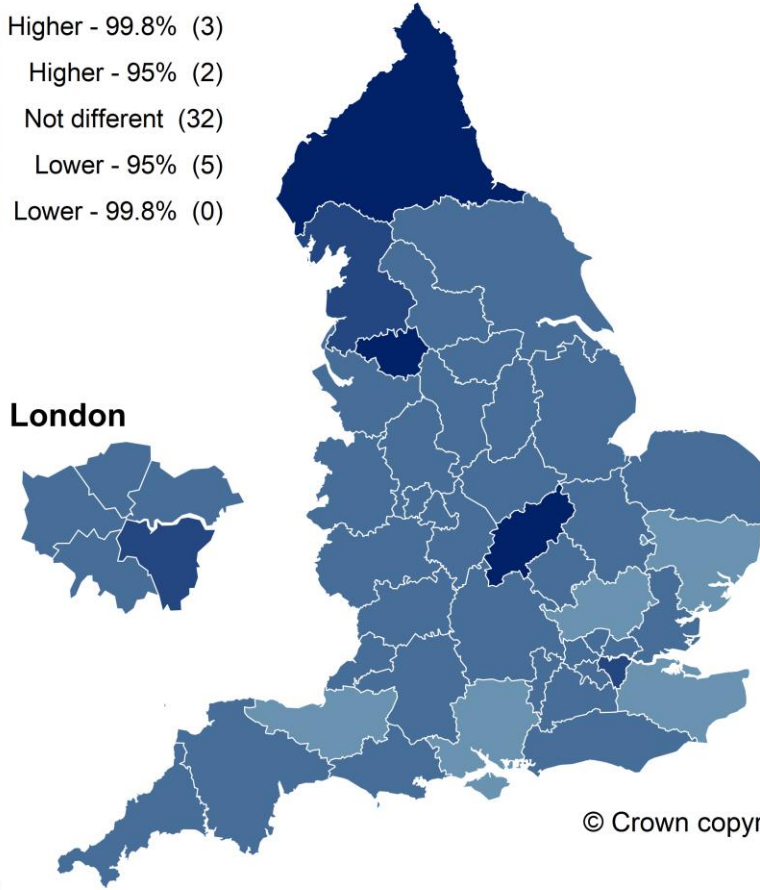


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Significance level compared with England

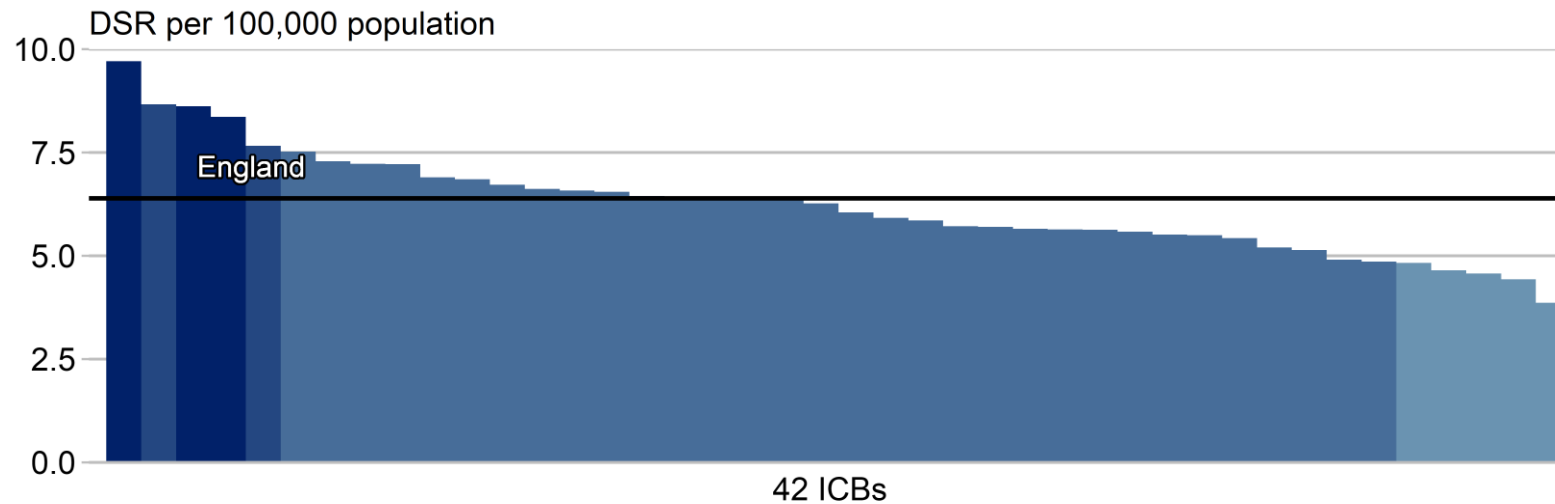


London



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Bar chart 5.1: Variation in mortality rate of head and neck cancer by ICB (2019)



The maps and column chart display data for 2019, during which ICB values ranged from 3.9 per 100,000 population to 9.7 per 100,000 population, which is a 2.5-fold difference between ICBs. The England value for 2019 was 6.4 per 100,000 population.

Of the 42 ICBs, 5 were statistically significantly higher than the England value (2 at the 95% confidence level and 3 at the 99.8% confidence level) and 5 were statistically significantly lower than the England value (5 at the 95% confidence level and 0 at the 99.8% confidence level).

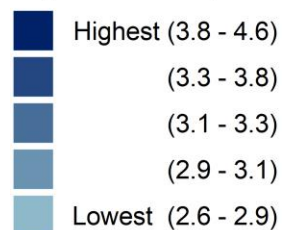
The data showing the values for all ICBs is available in the [head and neck cancer atlas data file](#).

5.2: Variation in mortality of head and neck cancer in people aged 0 to 69 years

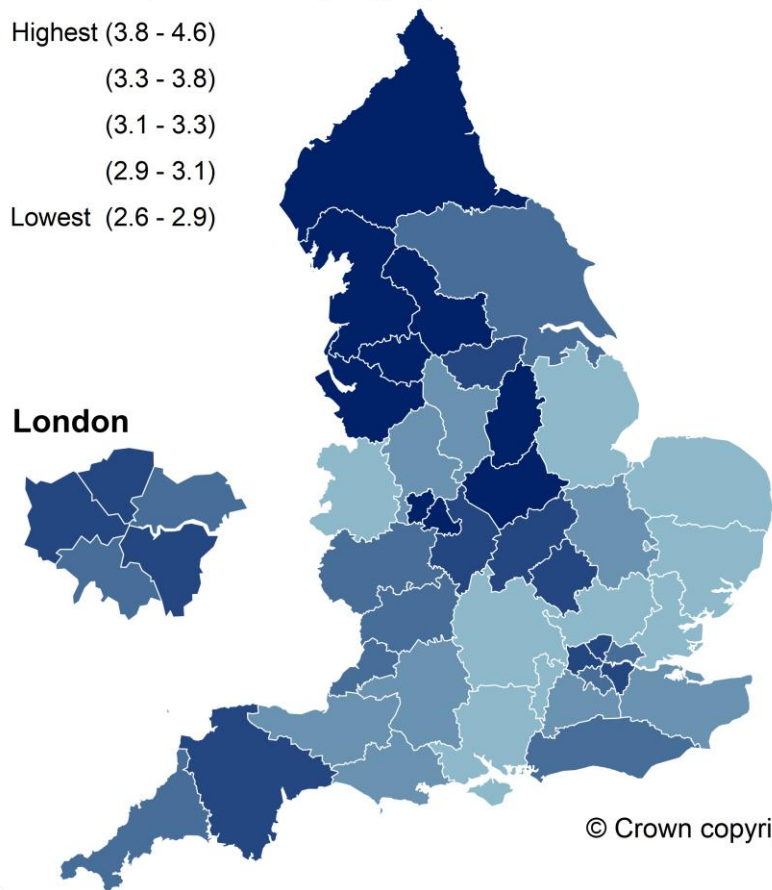
Map 5.2: Variation in mortality rate of head and neck cancer in people aged 0 to 69 years by ICB (2013 to 2020 pooled)

DSR per 100,000 population (optimum value: low)

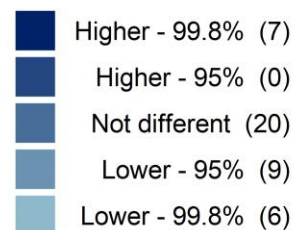
Equal-sized quintiles of geographies



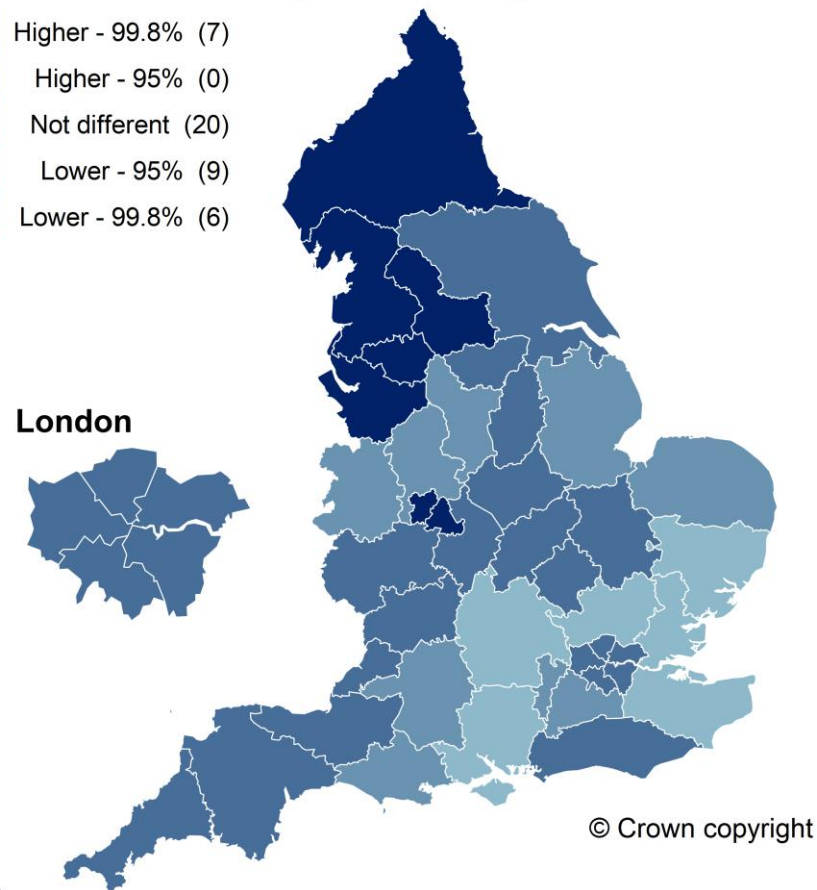
London



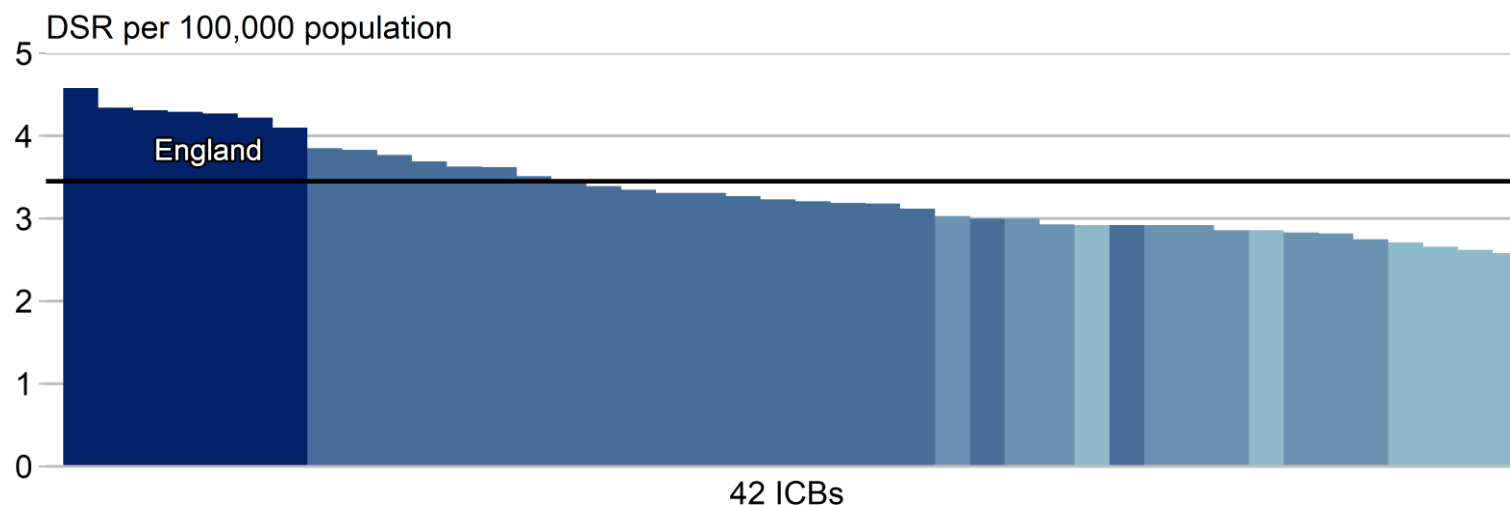
Significance level compared with England



London



Bar chart 5.2: Variation in mortality rate of head and neck cancer in people aged 0 to 69 years by ICB (2013 to 2020 pooled)



The maps and column chart display data for 2013 to 2020 pooled, during which ICB values ranged from 2.6 per 100,000 population to 4.6 per 100,000 population, which is a 1.8-fold difference between ICBs. The England value for 2013 to 2020 pooled was 3.5 per 100,000 population.

Of the 42 ICBs, 7 were statistically significantly higher than the England value (0 at the 95% confidence level and 7 at the 99.8% confidence level) and 15 were statistically significantly lower than the England value (9 at the 95% confidence level and 6 at the 99.8% confidence level).

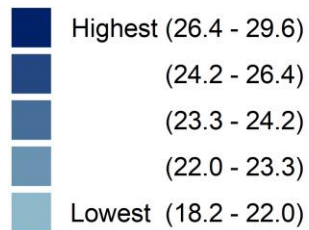
The data showing the values for all ICBs is available in the [head and neck cancer atlas data file](#).

5.3: Variation in mortality of head and neck cancer in people aged 70 years and over

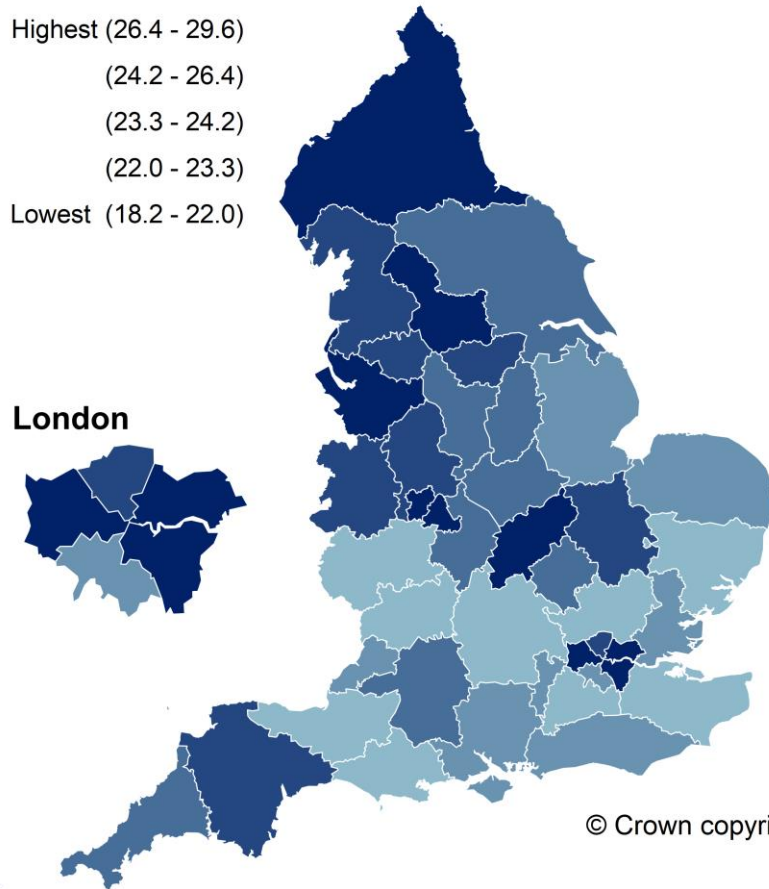
Map 5.3: Variation in mortality rate of head and neck cancer in people aged 70 years and over by ICB (2013 to 2020 pooled)

DSR per 100,000 population (optimum value: low)

Equal-sized quintiles of geographies

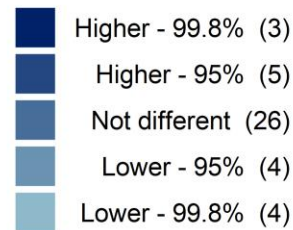


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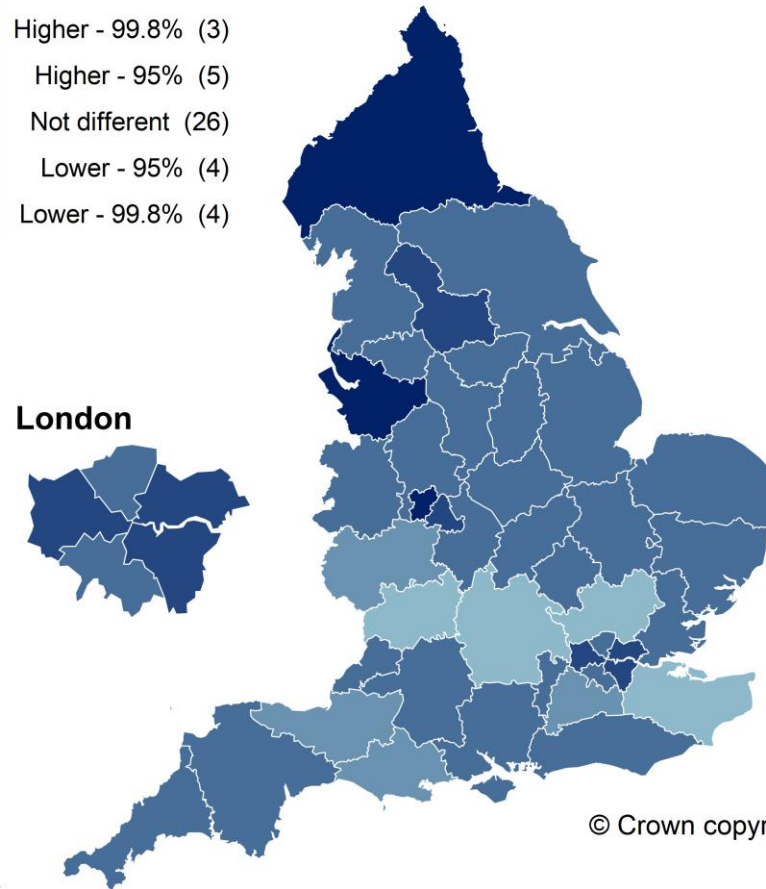


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Significance level compared with England

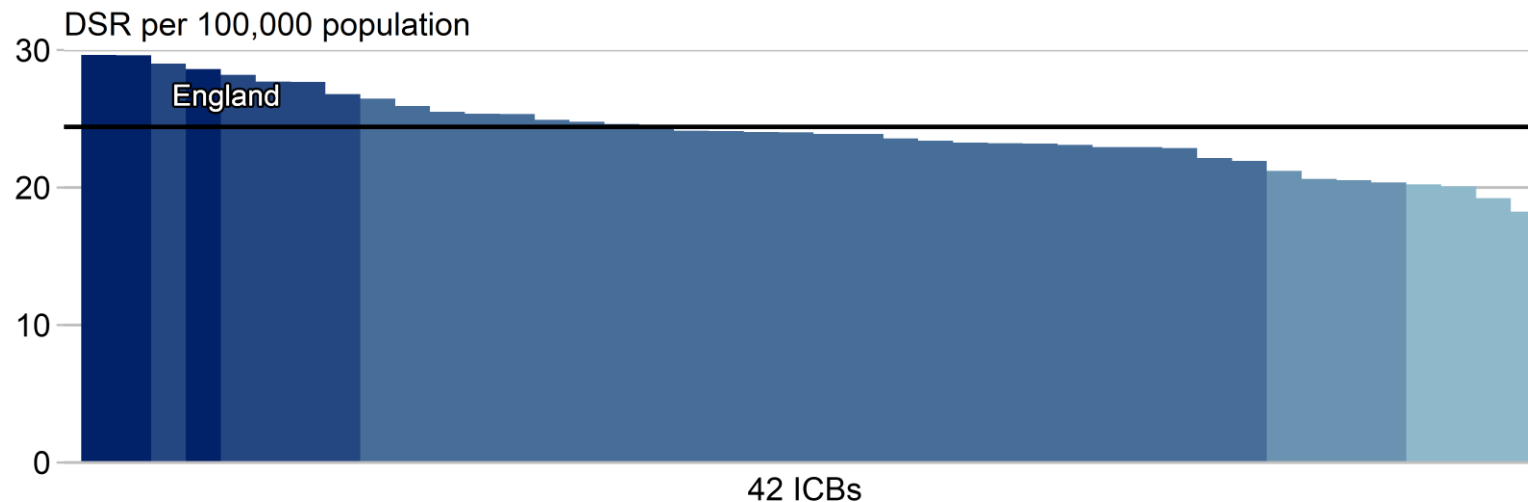


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Bar chart 5.3: Variation in mortality rate of head and neck cancer in people aged 70 years and over by ICB (2013 to 2020 pooled)



The maps and column chart display data for 2013 to 2020 pooled, during which ICB values ranged from 18.2 per 100,000 population to 29.6 per 100,000 population, which is a 1.6-fold difference between ICBs. The England value for 2013 to 2020 pooled was 24.4 per 100,000 population.

Of the 42 ICBs, 8 were statistically significantly higher than the England value (5 at the 95% confidence level and 3 at the 99.8% confidence level) and 8 were statistically significantly lower than the England value (4 at the 95% confidence level and 4 at the 99.8% confidence level).

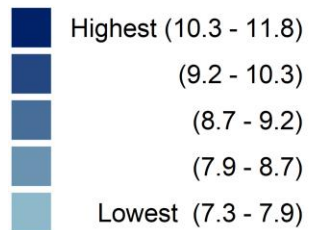
The data showing the values for all ICBs is available in the [head and neck cancer atlas data file](#).

5.4: Variation in mortality of head and neck cancer in males

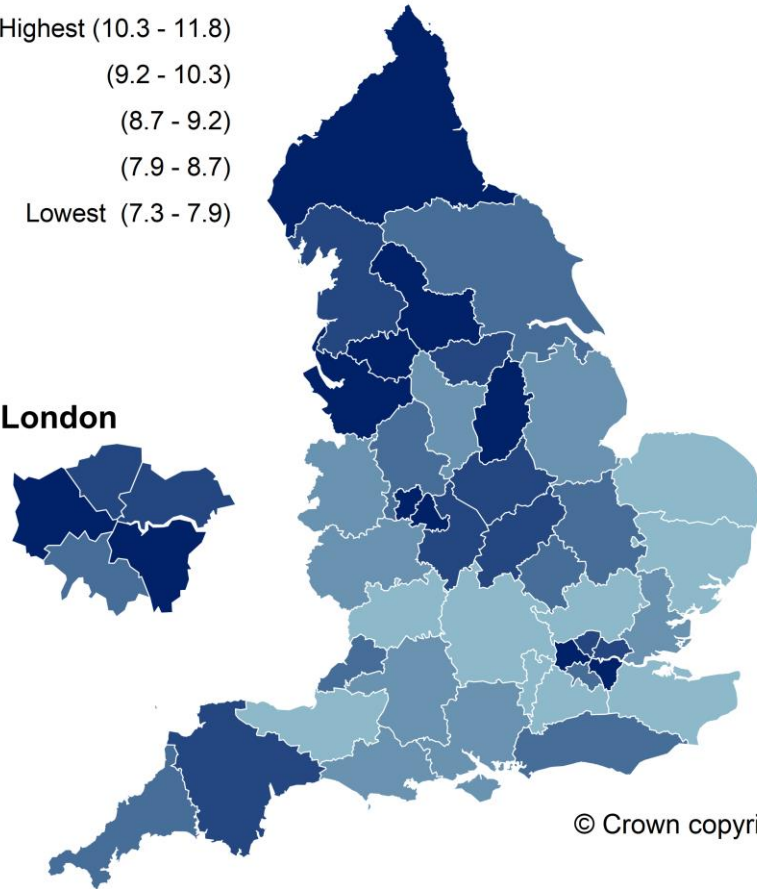
Map 5.4: Variation in mortality rate of head and neck cancer in males by ICB (2013 to 2020 pooled)

DSR per 100,000 population (optimum value: low)

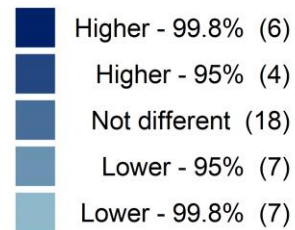
Equal-sized quintiles of geographies



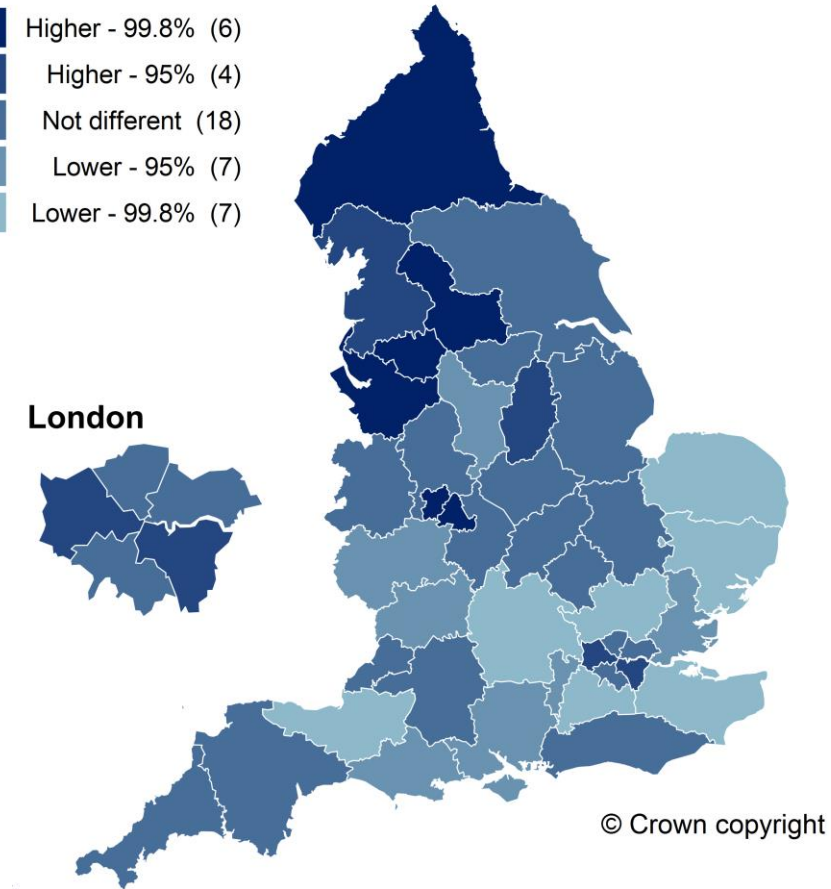
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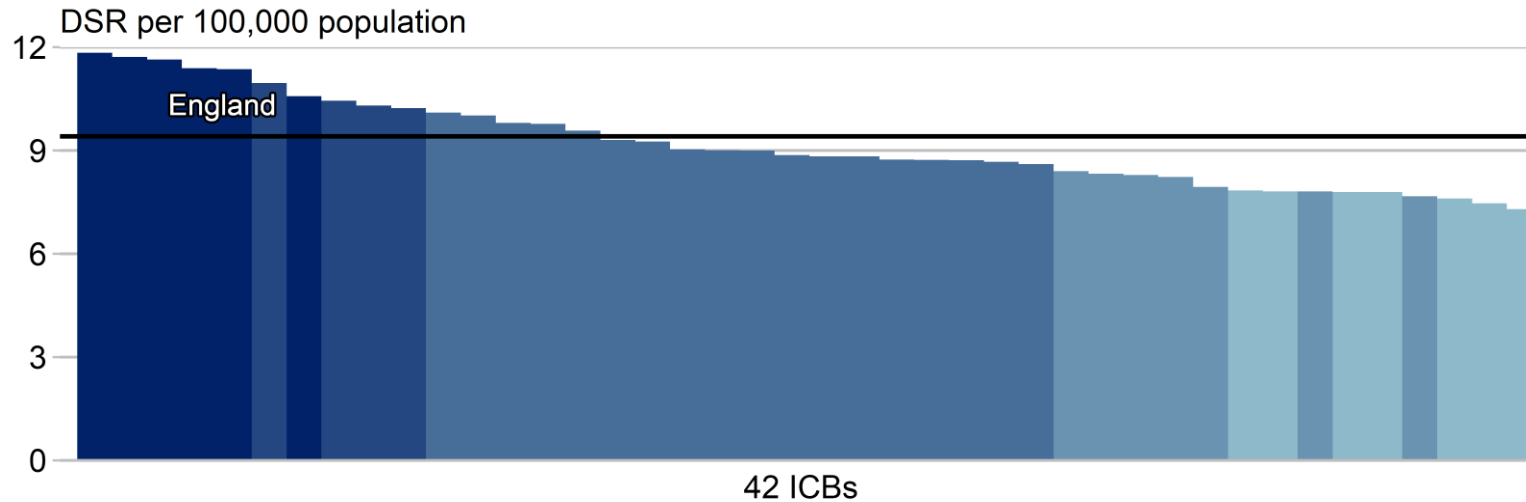
Significance level compared with England



London



Bar chart 5.4: Variation in mortality rate of head and neck cancer in males by ICB (2013 to 2020 pooled)



The maps and column chart display data for 2013 to 2020 pooled, during which ICB values ranged from 7.3 per 100,000 population to 11.8 per 100,000 population, which is a 1.6-fold difference between ICBs. The England value for 2013 to 2020 pooled was 9.4 per 100,000 population.

Of the 42 ICBs, 10 were statistically significantly higher than the England value (4 at the 95% confidence level and 6 at the 99.8% confidence level) and 14 were statistically significantly lower than the England value (7 at the 95% confidence level and 7 at the 99.8% confidence level).

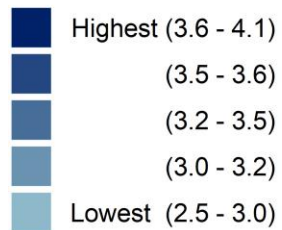
The data showing the values for all ICBs is available in the [head and neck cancer atlas data file](#).

5.5: Variation in mortality of head and neck cancer in females

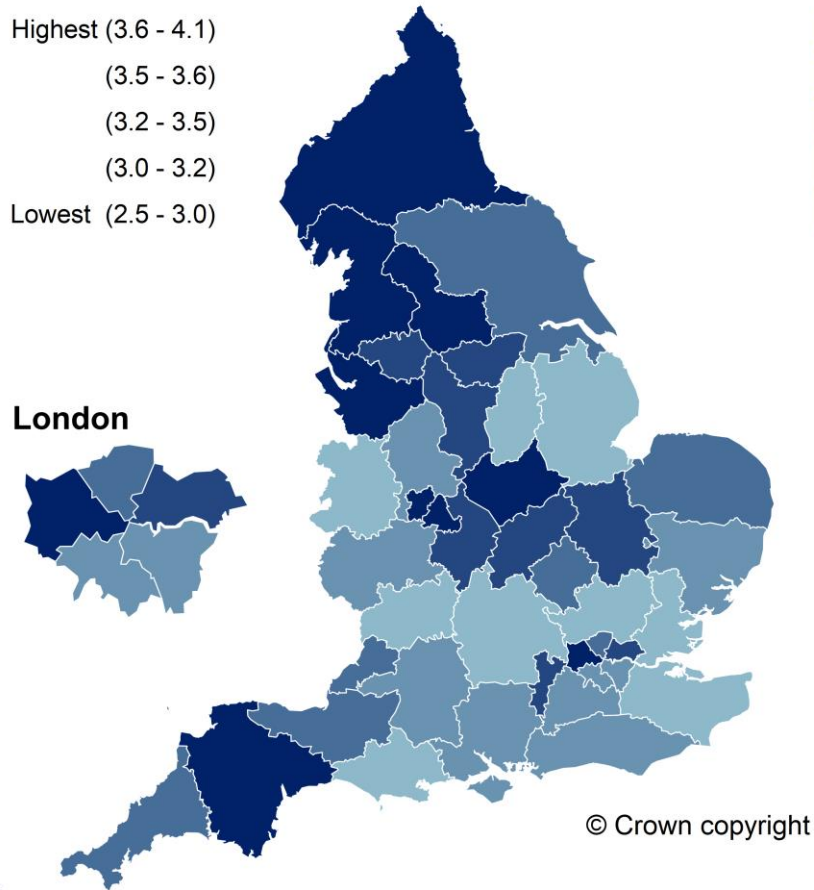
Map 5.5: Variation in mortality rate of head and neck cancer in females by ICB (2013 to 2020 pooled)

DSR per 100,000 population (optimum value: low)

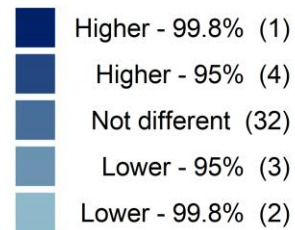
Equal-sized quintiles of geographies



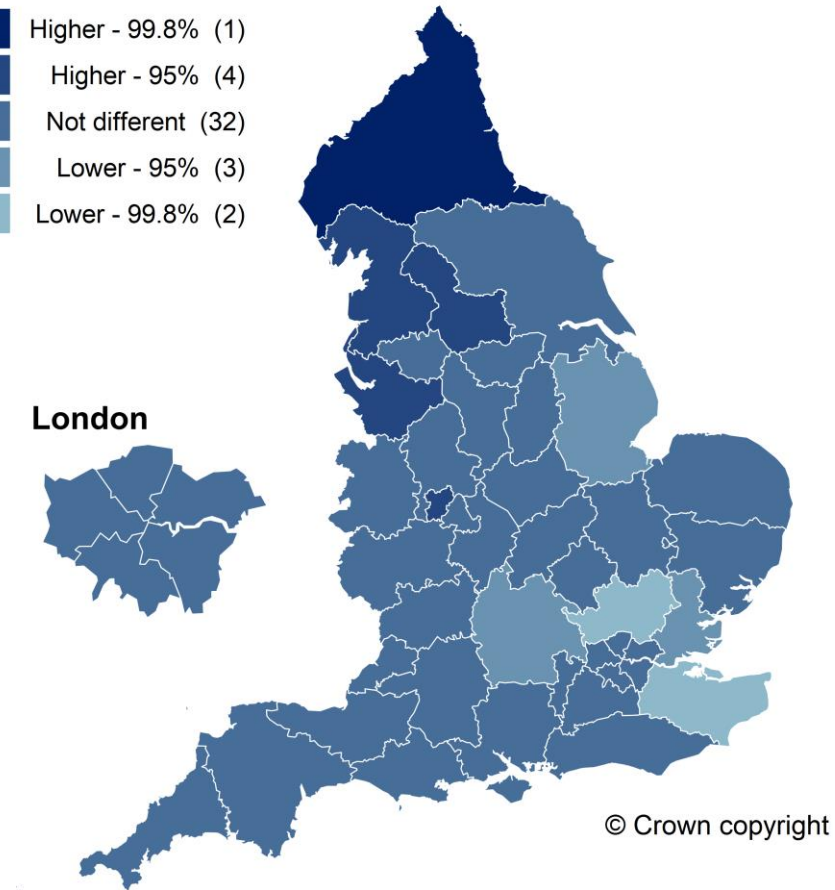
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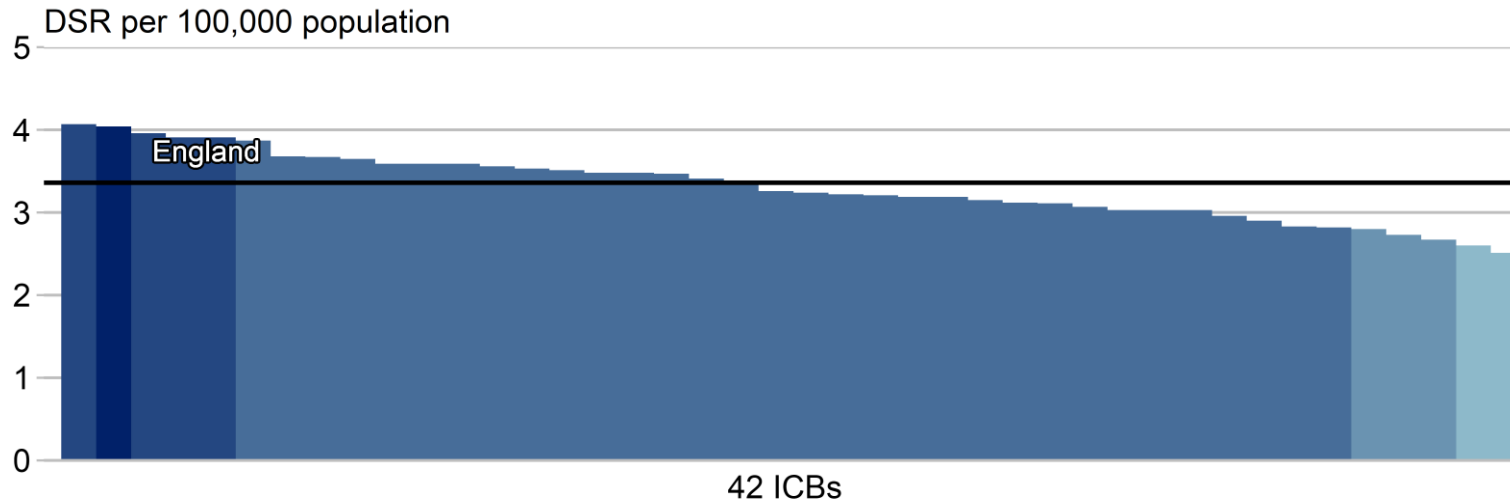
Significance level compared with England



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Bar chart 5.5: Variation in mortality rate of head and neck cancer in females by ICB (2013 to 2020 pooled)



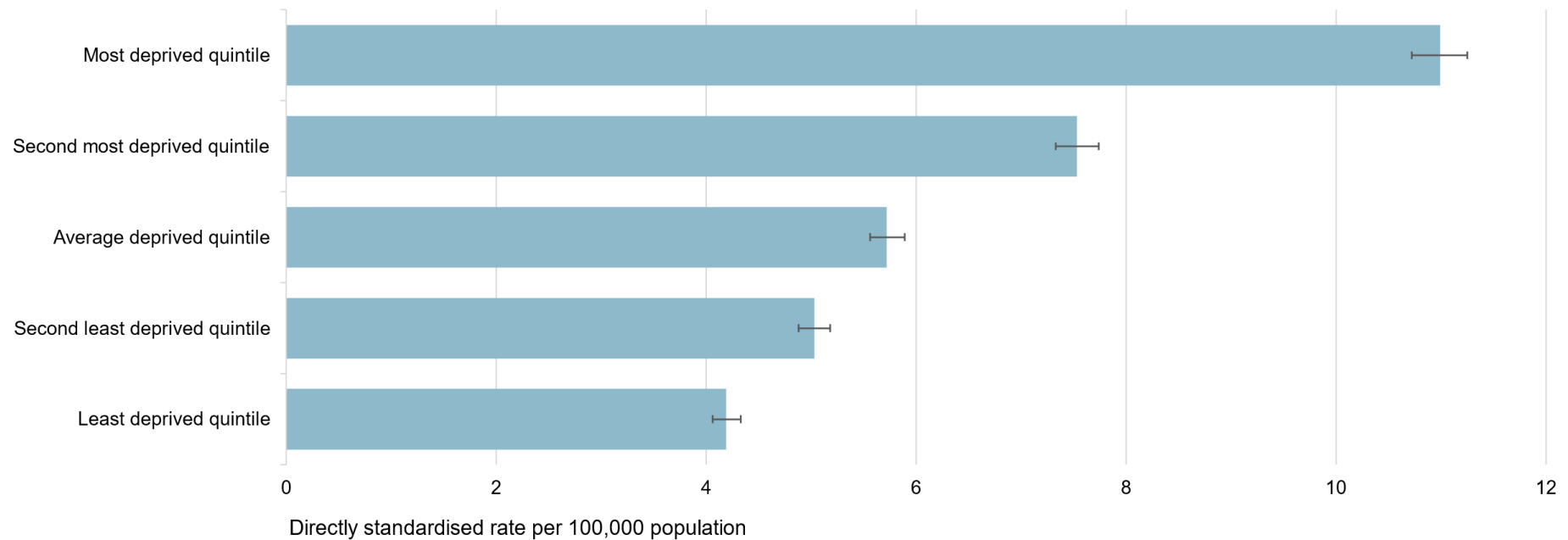
The maps and column chart display data for 2013 to 2020 pooled, during which ICB values ranged from 2.5 per 100,000 population to 4.1 per 100,000 population, which is a 1.6-fold difference between ICBs. The England value for 2013 to 2020 pooled was 3.4 per 100,000 population.

Of the 42 ICBs, 5 were statistically significantly higher than the England value (4 at the 95% confidence level and 1 at the 99.8% confidence level) and 5 were statistically significantly lower than the England value (3 at the 95% confidence level and 2 at the 99.8% confidence level).

The data showing the values for all ICBs is available in the [head and neck cancer atlas data file](#).

5.6 Variation in mortality rate of head and neck cancer by deprivation quintile

Bar chart 5.6: Variation in mortality rate of head and neck cancer by lower super output area (LSOA) deprivation quintile in England (2013 to 2020 pooled)



The bar chart displays the latest data for which the rate in the most deprived quintile was 11.0 per 100,000 population. The least deprived quintile value was 4.2 per 100,000 population. There is a 2.6-fold difference between the most and least deprived quintiles.

The data showing the values for all deprivation quintiles is available in the [head and neck cancer atlas data file](#).

Reasons for variation in mortality rates of head and neck cancer

Analyses for this atlas shows variation in head and neck cancer mortality rates by age, sex, geography by ICB and socioeconomic deprivation between 2013 to 2020.

The mortality rate for head and neck cancer increased in 2020 compared with previous years. This increase occurred when 2020 was the first year of the COVID-19 pandemic and health services were significantly disrupted.

Possible reasons for variation in mortality rates of head and neck cancer include:

- stage of diagnosis
- population factors such as:
 - socio-demographic characteristics
 - proportion of the local population who use tobacco
 - health literacy and awareness of signs and symptoms
 - co-morbidity
- health system factors such as:
 - referral pathways and routes to diagnosis
 - access to primary care medical and dental services
 - treatment success of centres and subsequent survival
 - smoking cessation following head and neck cancer diagnosis and treatment⁶⁹

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