

Methods: We used publicly available data to estimate HLE in 2011 and 2021 at birth and age 65 for males and females for 128 Middle layer Super Output Areas (MSOA) in Norfolk and Waveney, described the distribution using geospatial mapping, and analysed associations with risk factors using linear regression.

Results: Mean HLE at birth was 66.5 years (standard deviation 4.3; range 52.0 to 73.0) for men and 67.5 (3.9; 56.0 to 74.0) for women, and at age 65 was 10.9 years (1.8; 6.0 to 16.0) and 12.2 (1.9; 5.0 to 15.0) respectively in 2021. The range in HLE increased between 2011 and 2021 by 2.8 years for men and 1.6 years for women. HLE was usually lower and risks higher in urban and coastal areas. Lower HLE at area level was associated with lower weekly income, physical inactivity, air pollution, alcohol admissions, living alone as an older person and diet not meeting '5 a Day'. HLE at age 65 in 2021 increased by: 0.2 (95% CI 0.1,0.2) years for men and 0.2 (0.2,0.3) for women for each £10 rise in weekly net income after housing expenditure; 0.1 (0.1,0.2) years for men for each 10 fewer alcohol attributable hospital admissions per 100,000 admissions; 0.66 (0.31,1.00) years for men and 0.53 (0.15,0.91) years for women per 1 µg/m³ less 2.5 mm particulate matter concentration in air pollution; 0.6 (0.2,1.0) years for men and 0.6 (0.1,1.0) years for women for each 10% fewer people being physically inactive (multiple regression).

Conclusions: This innovative approach can be used to monitor risks and inform targeted public health interventions at a local level more relevant to local policy makers. Stronger public health surveillance systems are needed to accurately monitor a wider variety of local data on risks.

Key messages:

- Healthy life expectancy at age 65 varies by over 10 years for men and women between different small geographic areas in an English county, alongside local variation in risk factors for poor health.
- Lower HLE at area level was associated with lower weekly income, physical inactivity, air pollution, alcohol admissions, living alone as an older person and diet not meeting '5 a Day'.

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Inequalities in healthy life expectancy and risk factors for poor health in small geographic areas

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Background: Reducing inequality in healthy life expectancy (HLE) is a UK government ambition and requires more detailed knowledge of interrelated morbidity and mortality risks at smaller areas than is routinely available. We assessed HLE and risk factors in small areas.