

Supplementary File 3: Validation points

Projected health and economic impacts of improving attendance to the NHS Health Check in England: A sex-disaggregated analysis with implications for men's health

Within the baseline scenario, the model projected that the disease with the highest incidence from 2024 and 2040 was COPD, with 3.78 million new disease cases, and females were projected to be affected significantly more than males. These results are in line with previous findings that COPD was responsible for the highest number of emergency admissions in England in 2018–2019 [26] and was the biggest contributor to the difference in life expectancy for females in England in 2017–2019 (1). However, comparing a previous study that estimated that the number of new COPD cases was 115,000 in 2012 (2), our study projects a higher COPD incidence over the duration of our study, with our initial incidence in 2024 being 219,300. This discrepancy is likely due to this study using more recent data on COPD incidence, prevalence, and its RRs with regards to smoking. According to Cancer Research UK, there are around 49,200 incident cases of lung cancer, and 44,100 incident cases of colorectal cancer each year, based on 2017–2019 data (3,4). In the start year of 2024, our model projected 45,700 incident cases of lung cancer, and 44,200 incident cases of colorectal cancer, suggesting we may be underestimating the incidence of lung cancer slightly. Comparatively, there are an estimated 100,000 incident cases of stroke per year, according to NICE (5). In 2024, the model projected 59,000 incident cases of stroke.

References

1. Robbins AJ, Fowler AJ, Haines RW, et al. Emergency hospital admissions associated with non-communicable diseases 1998-2018 in England, Wales and Scotland: an ecological study. *Clin Med (Lond)*. 2021;21(2):e179-e85.
2. Snell N, Strachan D, Hubbard R, et al. Epidemiology of chronic obstructive pulmonary disease (COPD) in the UK: findings from the british lung foundation's 'respiratory health of the nation' project. *Thorax*. 2016;71(Suppl 3):A20-A.
3. Cancer Research UK. Lung cancer statistics 2024 [Available from: <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/lung-cancer#heading-Zero>].
4. Cancer Research UK. Bowel Cancer statistics 2024 [Available from: <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/bowel-cancer#heading-Zero>].
5. National Institute for Health and Care Excellence (NICE). What is the prevalence of stroke and TIA in the UK? 2023 [updated December 2023. Available from: <https://cks.nice.org.uk/topics/stroke-tia/background-information/prevalence/#:~:text=In%20the%20UK%20there%20are,9900%20in%20Scotland>].