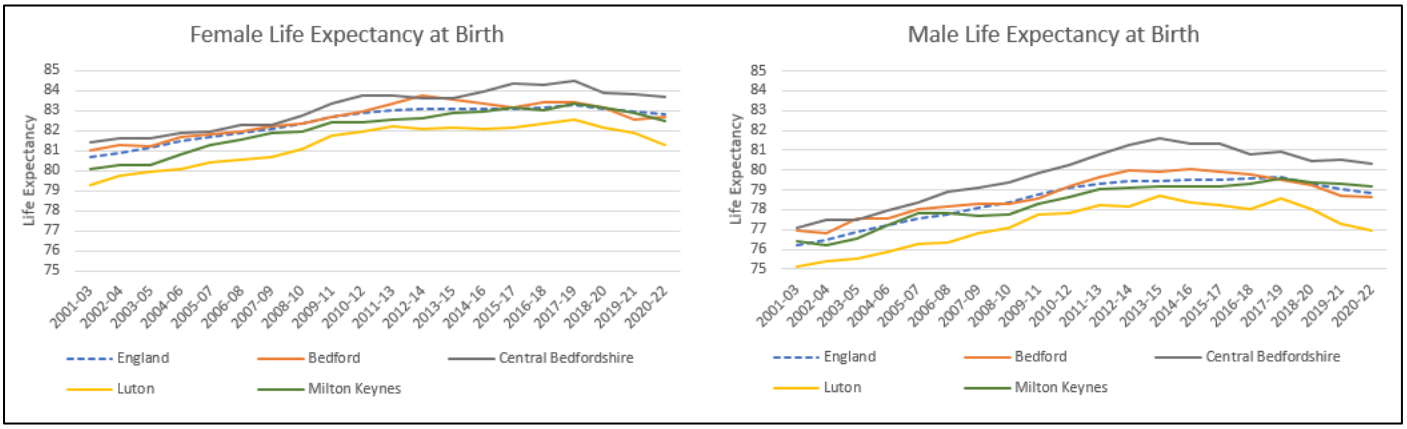
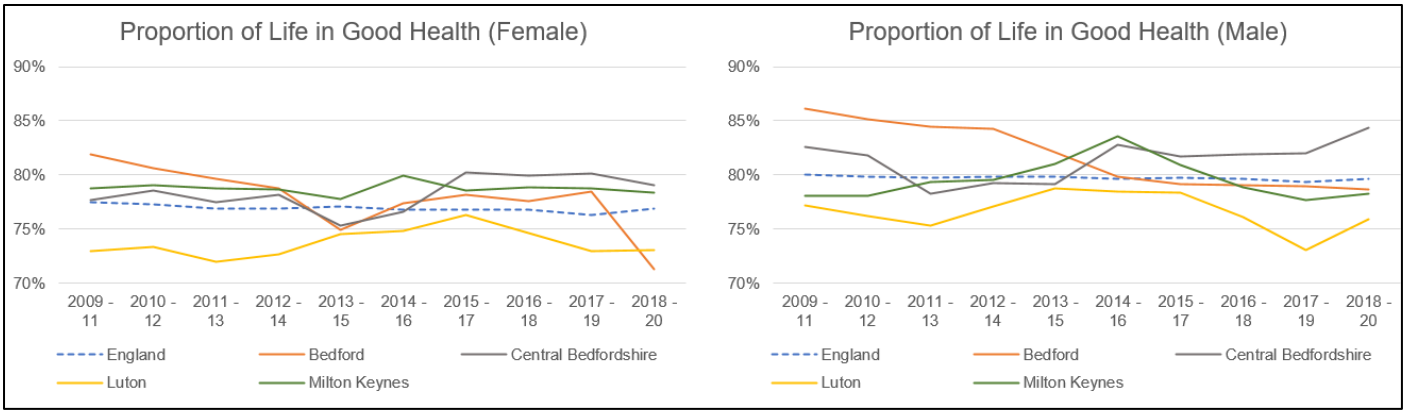
Life Expectancy in BLMK – A report by Public Health for ICS Population Health Intelligence

Life Expectancy by sex (2001-2022)



After following a steadily increasing trend, **life expectancy at birth[1] has plateaued in the last decade, with a notable recent downturn largely coinciding with the COVID-19 pandemic**. Female life expectancy is higher than male's and has seen a recent decrease after peaking around 2017-19. Male life expectancy peaked earlier in 2013-15 before also declining. There are minimal statistical differences between England and Bedford Borough's life expectancies for both sexes at a 95% confidence level. In Milton Keynes, females had notably lower life expectancies than England's average from 2001-03 to 2004-06 but aligned afterward. The figures for males remained comparable throughout all periods. **Both sexes consistently recorded significantly lower figures in Luton compared to England, while Central Bedfordshire males had significantly higher rates** – a trend also in females post-2008-10. The drivers of life expectancy include biological, behavioural, social, and environmental components, so can be impacted by action across the ICS, although positive effects will take time to appear in the metrics.

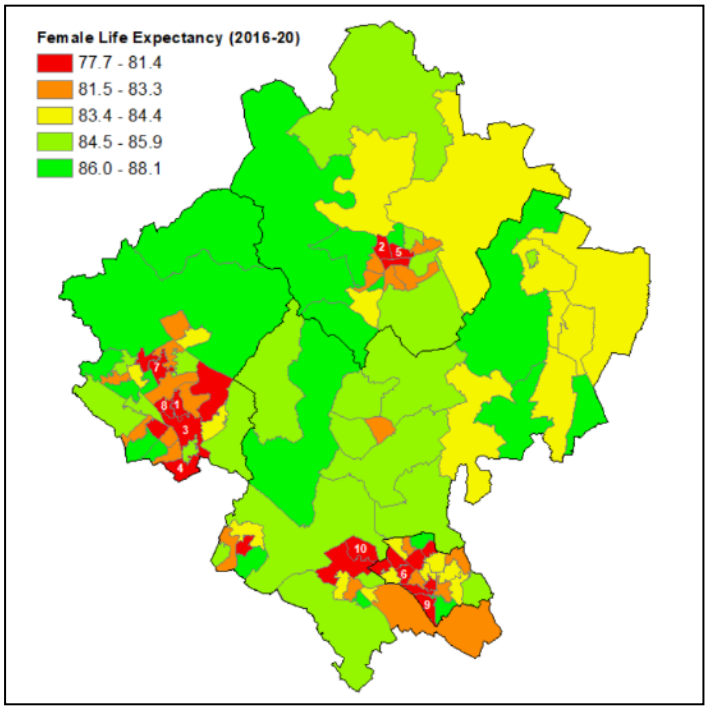
Proportion of Life in Good Health by Sex (2009-2020)

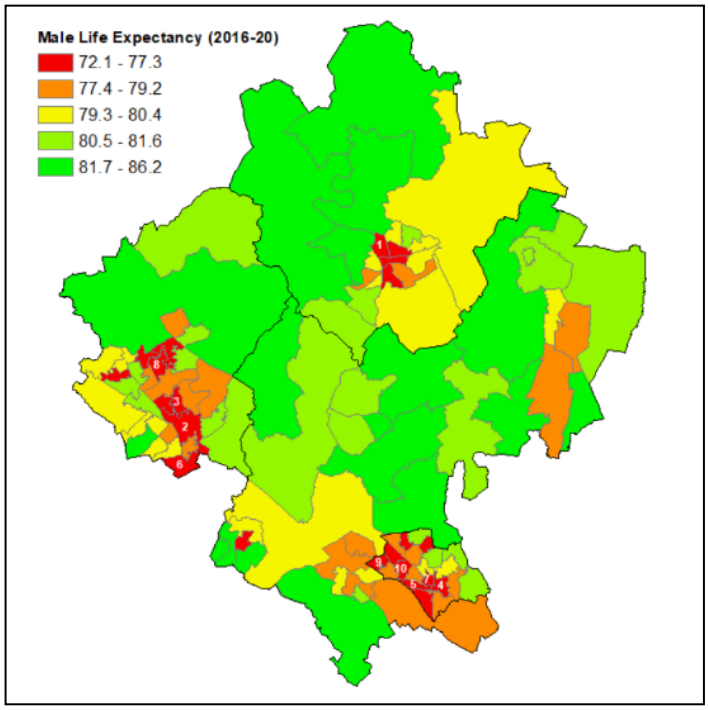


Not only do males and females in Luton have shorter life expectancy at birth than elsewhere in BLMK, but the proportion of their lives expected to be spent in ill-health is also higher. By contrast, since 2015-17 **the opposite has been true for Central Bedfordshire residents.** Compared to England, females in Milton Keynes have a higher proportion of their lives in good health despite overall life expectancy being similar. Male life expectancy has improved from 2016-18 but the proportion of male lives in good health has decreased compared to England. **In Bedford borough, the proportion of life in good health for females has fallen, including a sharp drop in 2018-20 (the largest percentage point drop in the country, though the difference is not statistically significant) – an anomaly that is being investigated locally.**

[1] *Period life expectancy* at a given age for an area is the average number of years a person would live, if he or she experienced the particular area's age-specific mortality rates for that time period throughout his or her life.

Life Expectancy at birth by MSOA (2016-20)



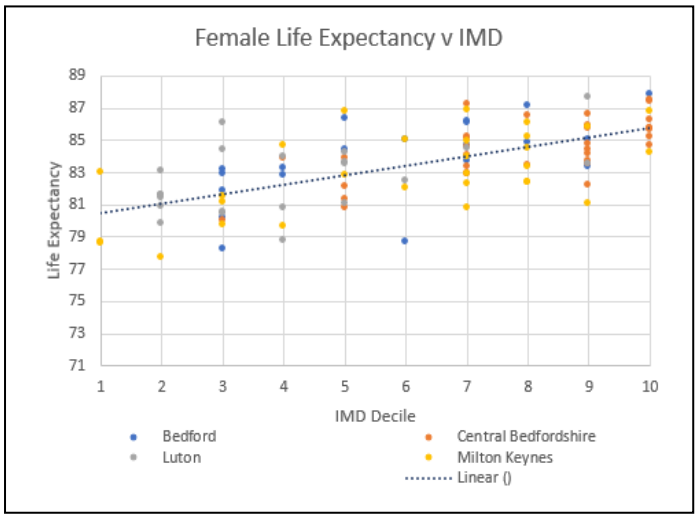


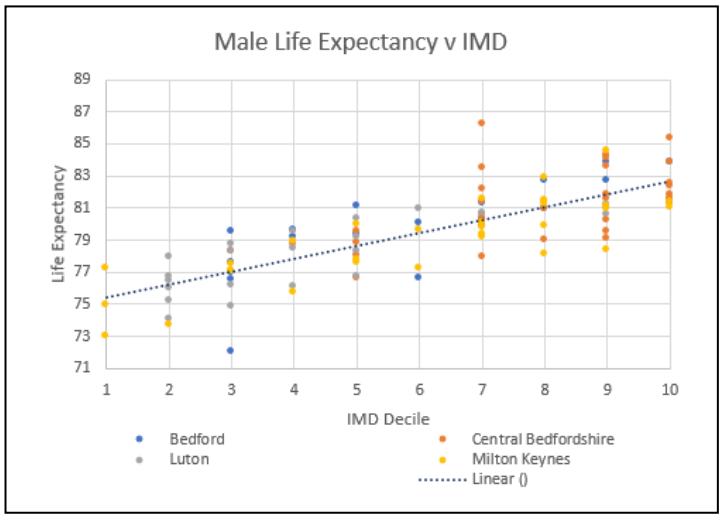
Red shaded areas are the lowest 20% for BLMK. White numbered labels rank the lowest 10% for BLMK.

The difference between the lowest and highest life expectancy is 10.4 years for females and 14.1 years for males. **The small areas (MSOAs)[2] with the lowest life expectancy are concentrated in urban areas with greater population density**.

Areas with low life expectancy for females is well correlated to male low life expectancy. Bedford has 3 MSOAs where female life expectancy is in the lowest 20% and 4 MSOAs for males. **Harpur has the lowest life expectancy in BLMK for males (72.1 years) and the second lowest for females (78.2)**. In Milton Keynes, there are 8 MSOAs where female life expectancy is in the lowest quintile and 8 for males. Eagleston and Fishermead has the lowest female life expectancy in BLMK (77.7) and the third lowest for males (73.8). Denbeigh is also notable for having the second lowest male life expectancy for males (73.0) and third lowest for females (78.6). Luton has 9 MSOAs where female life expectancy is in the lowest quintile and 8 MSOAs for males. There are no areas in Luton where male life expectancy is in the highest quintile for BLMK and **15 of the 21 Luton MSOAs are in the lowest 40%**. Houghton in Leighton Buzzard is the only MSOA in Central Bedfordshire where both female and male life expectancy are in the lowest quintile.

Life expectancy and deprivation (2016-20)



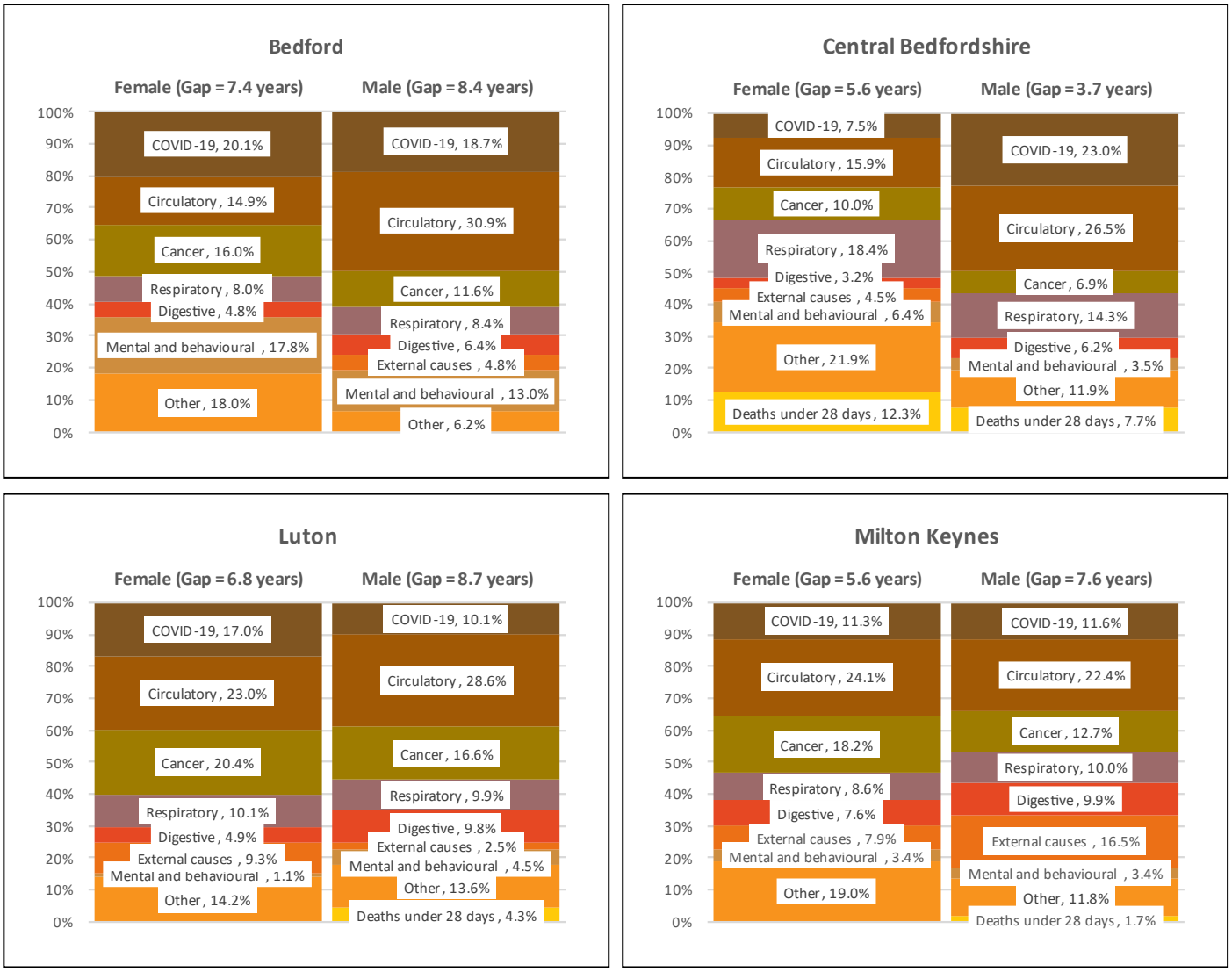


Life expectancy at birth in BLMK shows a moderate inverse correlation with deprivation. The correlation is stronger (r^2=0.62 vs 0.43 for females) and **the trend steeper for males, which suggests that deprivation level may be a more influential factor on life expectancy in males. This emphasises the potential benefits of targeting deprived areas in BLMK for enhanced support.**

[2] Middle Layer Super Output Areas (MSOAs), which are small areas of similar population sizes (around 7000 people).

81% of Luton's MSOAs are in the most deprived deciles (IMD 1-5). Conversely, 81% of Central Bedfordshire's MSOAs in are in the least deprived deciles (IMD 6-10). Milton Keynes has the widest spread with MSOAs in every decile but the distribution is slightly skewed towards less deprived levels. Bedford's MSOAs are slightly skewed towards more deprived levels.

Breakdown of the life expectancy gap between the most and least deprived quintiles of each local authority by cause of death, 2020 to 2021.



These charts show the contribution of causes of death to the difference in life expectancy between the most and least deprived quintiles in each Local Authority. It should be borne in mind that there are considerable differences in the highest and lowest levels of deprivation between local authorities in BLMK.

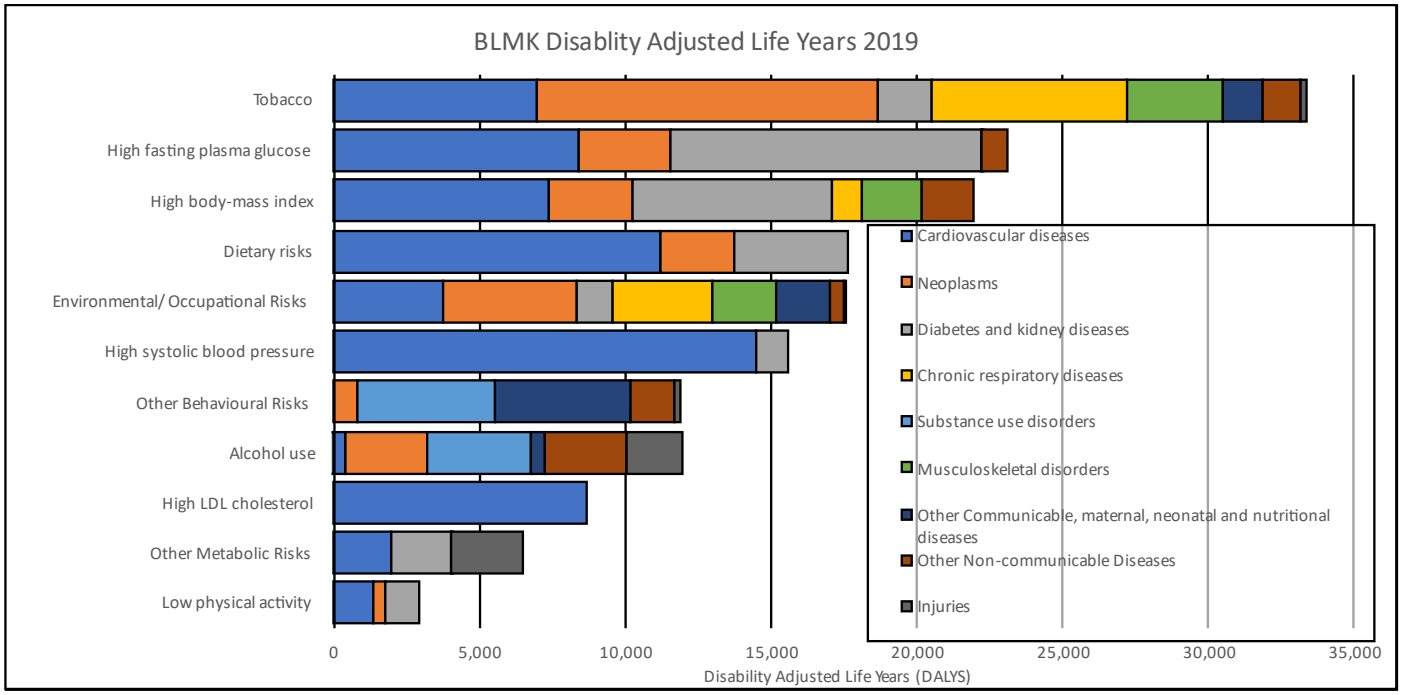
The gap in life expectancy between the most and least deprived quintiles in females is highest in Luton (8.7 years) and lowest in Central Bedfordshire and Milton Keynes (5.6). In males, the largest gap was in Bedford (8.4 years) and smallest in Central Bedfordshire (3.7). Central Bedfordshire is the only area where the female gap was greater than the male gap.

2021-22 was an unusual year because of Covid. It contributed to at least 7.5% of the life expectancy gap in the charts which would not be expected in other years. Also, **it is unknown whether individuals who died from COVID-19 might have otherwise died at different times from different illnesses, thereby affecting overall life expectancy.**

Circulatory diseases made up the largest proportion of the gap for males in all areas (between 22.4% and 30.9%). In females, it accounted for the largest difference in all areas except Bedford. Deaths from cancer contributed to a larger percentage of the gap than respiratory diseases in all areas except Central Bedfordshire and the proportion of the gap from cancer deaths was higher in females than males in all areas. Respiratory illnesses accounted for 18.4% of the gap between the most and least deprived quintiles in Central Bedfordshire females and 14.3% in males. In other local authorities, it ranged between 8.0% and 10.1%. **Deaths under 28 days account for a larger proportion of the life expectancy gap in Central Bedfordshire compared to other BLMK local authorities.**

This provides an indication of the diseases that, if addressed, would potentially have the biggest impact on reducing inequalities in life expectancy.

Risk factors affecting low healthy life expectancy (2019)



DALYs (disability-adjusted life years) are a measure of the burden of a disease, which reflects the impact of a disease on both length of life and disability. One DALY equals one lost year of healthy life. The Global Burden of Disease study estimates what proportion of DALYs are caused by different diseases and risk factors. There is little variation between the proportions of risk factors and the conditions they affect across BLMK local authorities but the rates per 100,000 are different. Bedford had a rate of 21,400 per 100,000. Central Bedfordshire had 18,000, Luton 17,600 and Milton Keynes 16,800. The chart above shows the actual numbers of DALYs and not the rate per 100,000.

Of all health conditions, cardiovascular diseases account for the largest burden of disease in BLMK (37.8% of the 171,000 DALYs). **Neoplasms (cancers) make up 16.9%** (28,900 DALYs) **and diabetes and kidney diseases explain 16.6%.** Each other condition accounted for no more than 6.6% of DALYs in BLMK in 2019.

Whilst smoking has decreased in recent years, tobacco was by far the largest risk factor and contributed to 19.5% of DALYs. The greatest affects were on Neoplasms (11,800 DALYs), cardiovascular diseases (7,000) and chronic respiratory diseases (6,700).

High fasting plasma glucose was the second largest risk factor contributing to 13.5% of all DALYs in BLMK. This affected diabetes and kidney diseases (10,700 DALYs) and cardiovascular diseases (8,400). A high body-mass index was the next highest factor accounting for 12.8% of all DALYs. The greatest affect was on cardiovascular diseases (7,400 DALYs) and diabetes and kidney diseases (6,800).

Dietary risks explained 10.3% of all DALYS in BLMK. It affected cardiovascular diseases (11,200 DALYs), diabetes and kidney diseases (3,900) and neoplasms (2,500).

Environmental and occupational risks also contributed to 10.3% of all DALYs but affected a broader range of causes of DALYs, including neoplasms (4,600), cardiovascular diseases (3,800) and chronic respiratory diseases (3,500).

This emphasises the potential impact of preventing disease through modifying behavioural risk factors and the continued value of ICS wide efforts to support people to quit smoking, increase physical activity, and improve diets – through individual, social and environmental interventions.