Addendum to *Health in 2040*

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Health in 2040 results updated for new population projections

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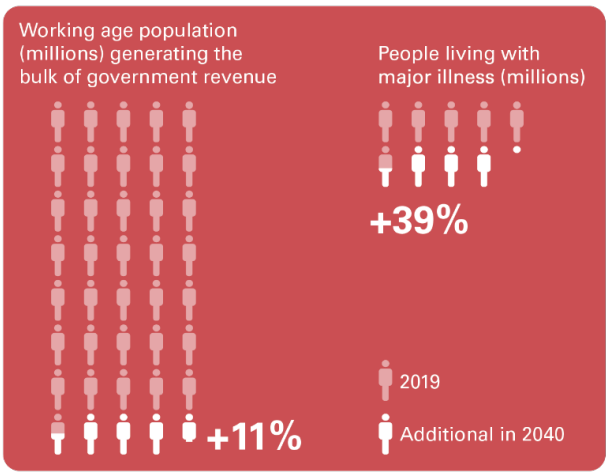
In July 2023, we published *Health in 2040*, our projections of long-term illness in England between 2019 and 2040 as part of a collaboration with the University of Liverpool. In January 2024, the Office for National Statistics (ONS) published updated national population projections by age and sex. The projections rely on assumptions of birth rates, mortality rates and international migration that are developed using analysis of past trends. In the years of 2022 and 2023 there has been an increase in immigration into the United Kingdom which has led the ONS to update their assumptions about migration in the coming years.

This addendum shows how these updated population projections affect our projections from Health in 2040. These changes only affect a small number of our results. These pertain largely to the numbers of people with illness or the numbers of people with specific conditions. The full list of changes (including graphs) is listed below.

Key messages from Health in 2040

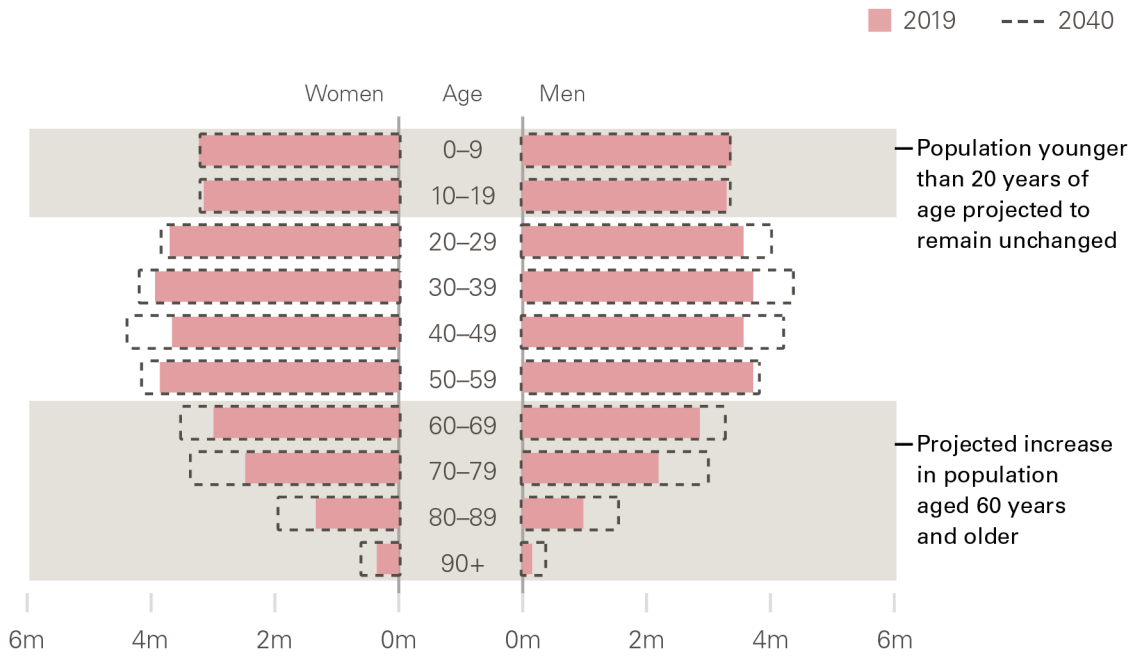
Original projections	**Updated projections**
The number of people living with major illness is projected to increase by 2.5 million by 2040, more than a third. This implies a shift in the share of the adult population living with major illness, from almost 1 in 6 in 2019 (6.7 million) to almost 1 in 5 in 2040 (9.1 million). Most of the increase in people living with major illness is among those aged 70 years and older.	The number of people living with major illness is projected to increase by 2.6 million by 2040, more than a third. This implies a shift in the share of the adult population living with major illness, from almost 1 in 6 in 2019 (6.6 million) to almost 1 in 5 in 2040 (9.3 million). Most of the increase in people living with major illness is among those aged 70 years and older.
The number of people living with major illness is projected to increase by 37% – over a third – by 2040, nine times the rate at which the working age population (20–69-year-olds) is expected to grow (4%).	The number of people living with major illness is projected to increase by 39% – over a third – by 2040, 3.5 times the rate at which the working age population (20–69-year-olds) is expected to grow (11%).



Projected changes to the overall population of England

The ONS projects that England's population will grow from 56.2 million in 2019 to 63.6 million in 2040. This is potentially 7.3 million more people who may need health care. The population will also become older, with the population aged 70 years and older projected to rise in 2040 from 7.5 million to 10.8 million, one sixth of the population.

Figure 1 Projected changes to the population structure by 10-year age band, women and men, England, 2019 and projected for 2040

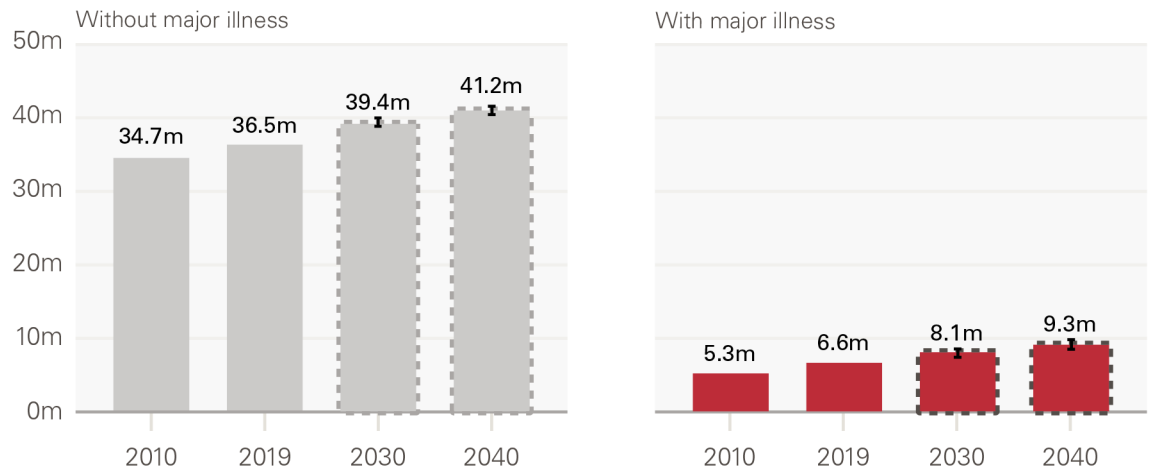


Source: Mid-year population estimates for England and Wales (mid-2011 to mid-2022) and 2021-based ONS principal population projections for England

Projected changes to the population with major illness

Figure 2 (formerly Figure 5) shows the effect of more illness (the expansion of morbidity) at the population level. The next two decades are now expected to see similar changes in the overall population to the recent past; increasing by around 8% between 2019 and 2030 and 5% between 2030 and 2040, compared to 7% from 2010 to 2019. However, the increase in the size of the population aged 70 years and older, combined with the trend in the years spent with major illness, means that the number of people living with major illness is projected to increase from 15% of the population aged 20 years and older in 2019 to 18% in 2040. This means that by 2040, almost 1 in 5 people are projected to be living with major illness, increasing from almost 1 in 6 in 2019.

Figure 2: Population living with and without major illness, England, past and projected

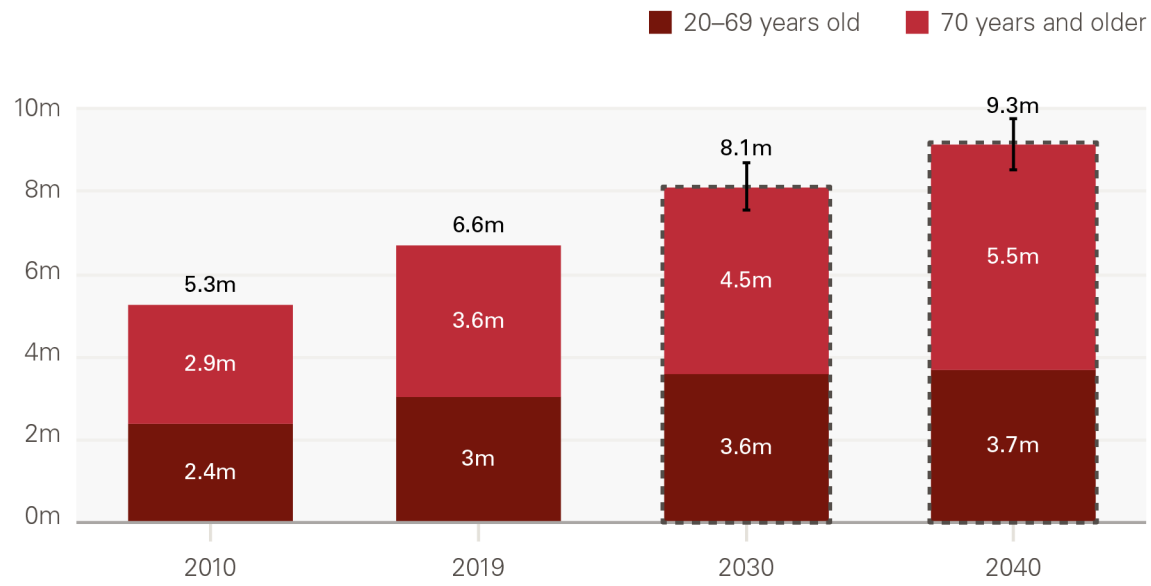


Source: Analysis of linked health care records and mortality data conducted by the REAL Centre and the University of Liverpool
Note: The black capped bars represent uncertainty intervals. To better represent the working age population, for Figures 2 and 3 we present the estimated and projected number of people living with and without major illness aged 20 years and older. The model is designed to project the population aged 30 years and older. We therefore assume that the proportion of people living with major illness aged 20–29 years is the same in 2040 as in 2019. For more detail see our modelling working paper.

These projections are the extension of a trend we saw in the decade before the pandemic. Between 2010 and 2019, the population grew by 3.6 million with 1.4 million[1] more people living with major illness: a 26% increase. There have also been important changes in the number of people aged 20–69 years living with major illness. In the decade before the pandemic this number increased by over a quarter, from 2.4 to 3.0 million people. That means almost 10% of the population aged 20–69 years (the bulk of the working-age population) were living with major illness, impacting not just their own quality of life but economic productivity. Figure 3 (formerly Figure 6) shows that on current trends, we project this number will rise to 3.6 million people by 2030 before further increasing slightly to 3.7 million people by 2040.

[1] Numbers do not match the chart exactly (6.6m – 5.3m) due to rounding.

Figure 3: The estimated number of people living with major illness in England, past and projected



Source: Analysis of linked health care records and mortality data conducted by the REAL Centre and the University of Liverpool
Note: The black capped bars represent uncertainty intervals. To better represent the working age population, for Figures 2 and 3 we present the estimated and projected number of people living with and without major illness aged 20 years and older. The model is designed to project the population aged 30 years and older. We therefore assume that the proportion of people living with major illness aged 20–29 years is the same in 2040 as in 2019. For more detail see our modelling working paper.

The increase in people with diagnosed illness, in combination with falling fertility rates and longer life expectancy creates a stark picture. The number of people living with major illness in England is projected to increase by over a third (39%). But the number of 20–69-year-olds – the group that generates the bulk of government tax revenues – is projected to grow by just 11%. These revenues are used across all areas of government spending including the NHS. The combined impact of these trends is projected to reduce the ratio of the working-age population to the older population with major illness between 2019 and 2040 from 10:1 to 7:1 (almost a third) [2]

Projected changes to the number of people with specific conditions

The population is projected to grow, as well as change in age structure. This will lead to an increase in the projected total number of people living with specific conditions, and the demand for health care. Figure 4 (formerly Figure 10) shows the projected rise in the numbers of people diagnosed with the conditions that have the greatest effect on mortality and health care demand. Of these, the greatest increase is for diabetes (2.0 million), chronic

[2] In 2019 there were 35.7 million people aged 20–69 years and 3.6 million people aged 70 years and older with major illness. In 2040 we project these population groups to grow to 39.7 million and 5.5 million respectively. The projections continue the trends of the recent past: in 2010 the ratio was 12:1.

pain (1.9 million) and heart failure (1.1 million). We also project over a 30% increase in the number of people living with cancer, chronic obstructive pulmonary disease (COPD) or chronic kidney disease.

Figure 4: Projected total number of diagnosed cases for the 10 conditions with the highest impact on health care use and mortality among those aged 30 years and older, including demographic changes, England, 2019 and projected for 2040

Note: Red shaded bars represent uncertainty intervals. COPD is chronic obstructive pulmonary disease
Source: Analysis of linked health care records and mortality data conducted by the REAL Centre and University of Liverpool