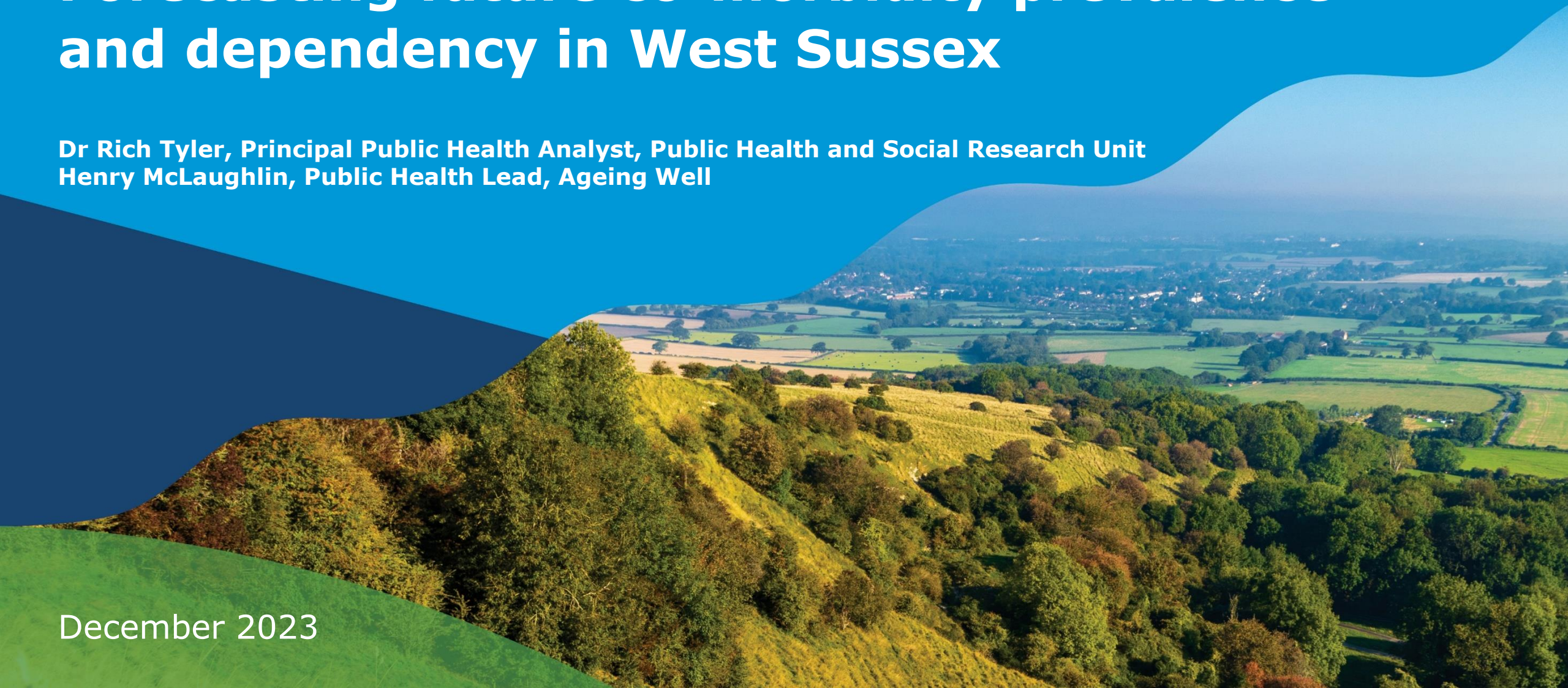
westsussex.gov.uk

west sussex county council

Forecasting future co-morbidity prevalence and dependency in West Sussex

Dr Rich Tyler, Principal Public Health Analyst, Public Health and Social Research Unit
Henry McLaughlin, Public Health Lead, Ageing Well



December 2023

Summary

This report models future co-morbidity prevalence and dependency of older people to 2035 by applying findings from a UK study (the Population Ageing and Care Simulation study [1]) to the local population. Some caution is needed when applying findings from a study undertaken elsewhere in the UK to the local population as there will be differences in health status and local context; the projections should be considered as indicative of general trends, rather than precise predictions.

Key findings:

- In 2035 most residents between the ages of 65-85 are expected to remain independent with 28% projected to have dependency needs.
- Growth in the number of people with dependency could be greatest among women and the oldest age groups. Four out of five residents aged 85 and above could have at least some dependency needs. As an increasingly ageing local authority, a larger population in these groups will increase total numbers in each category of dependency even if the proportion of those with dependency remains stable.
- The number of people with low dependency needs will increase by 16,700 by 2035, an increase of 31% on 2022.
- Number with medium or high dependency (substantial) needs will increase by 3,700 by 2035, up 14% from 2022.
- By 2035 there could be an increase of 5,700 people living with dementia and at least two other long-term health conditions, an increase of 71% on 2022. It will be less common than now for dementia to be the only condition that residents have. This will increase the complexity of care required. There will be an increase of 2,200 residents with substantial dependency and 3+ long-term health conditions, excluding dementia.

[1] Forecasting the care needs of the older population in England over the next 20 year PACSim, 2018, The Lancet Public Health

Key points for strategic planning and commissioning

1. Changes in the population structure imply that there will be fewer working-age friends and family members to provide unpaid care to older relatives, and challenges in health and care workforce recruitment.

2. These changes will in part need to be filled by a greater number of ageing carers who will in many cases also have long-term conditions. Support for unpaid carers will need to adapt further to support people to co-care with chronic conditions.

3. This change in the availability of unpaid carers and the health and care workforce may be most acute in Chichester and Arun which have the highest proportions of older residents as a ratio of working-age adults.

4. There will be an increase in residents with low and high dependency needs, but not in those with medium dependency.

5. Consideration will need to be given as to how combinations of long-term conditions can be managed by individuals, their carers, and professionals. Dementia care will have to increasingly incorporate care of long-term conditions. This will require greater coordination between the NHS and social care, and different specialisms within the NHS.

6. Particular attention should be paid to supporting women to maintain their independence, given that there are projected to be more than double the number of women than men with dependency needs by 2035.

Contents

Population ageing

West Sussex has an older population structure compared to England overall.

Those aged 65 and over currently comprise 23% of the resident population (2022 estimate, 205,800). This is expected to increase to 28% of the total population by 2035 (267,200).

The working age population will decrease proportionally from 60.4% (539,000) of the resident population in 2022 to 57.4% (546,000) in 2035.

Using population estimates and subnational projections

Annual population estimates are best guesses of the demographics of the resident population of an area. They are most accurate at the time of a national Census and then get more and more uncertain until the next one.

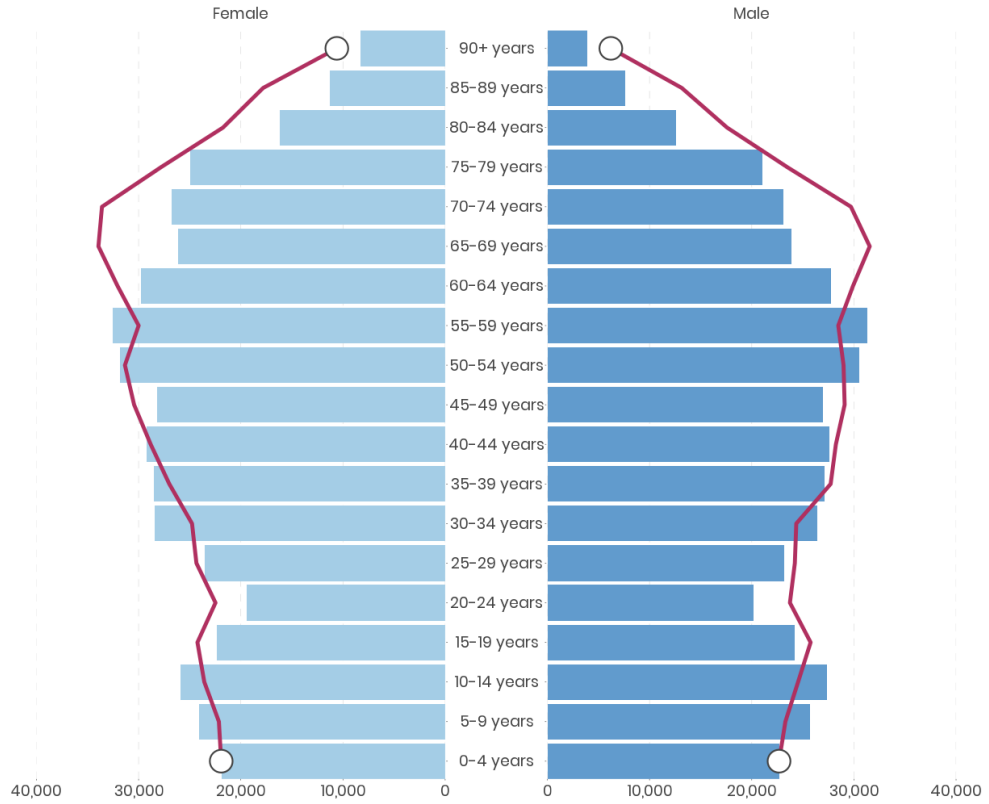
Sub national projections have historically been published every two years, although the most recently available projections are based on mid 2018 data; this does not consider the recent changes in population (migration, deaths, and births) due to the COVID-19 pandemic, nor does it take into account the most recent 2021 Census.

As such, we have adjusted the 2018-based population projections to account for what we now know about the demographics of residents in 2022. This means that projected estimates in this report may differ from those published elsewhere.

In this and following tables and charts 2022 population data is based on estimates, 2025 onwards are projections. Percentage change is calculated using unrounded values, However, totals in the text are rounded to the nearest 100 to emphasise the uncertainty inherent in these population estimates.

Population pyramid 2022 (bars) compared to 2035 (lines); West Sussex; number of residents

Mid 2022 population estimates compared with 2035 adjusted population projections



Where the lines are outside or higher than the bars, this shows an increase in the population in the future, whereas lines inside or lower than the bars represent a decrease in the population for that age group.

Changes in population structure across West Sussex districts and boroughs

This chart shows the ratio of people aged 16-64 (working age) to those aged 65+ (old age) over time.

Chichester and Arun have the highest proportion of older residents to working age adults. Currently there is around one older person for each two working age adults in these two districts. This is projected to rise to almost three older people for every four working age adults by 2043.

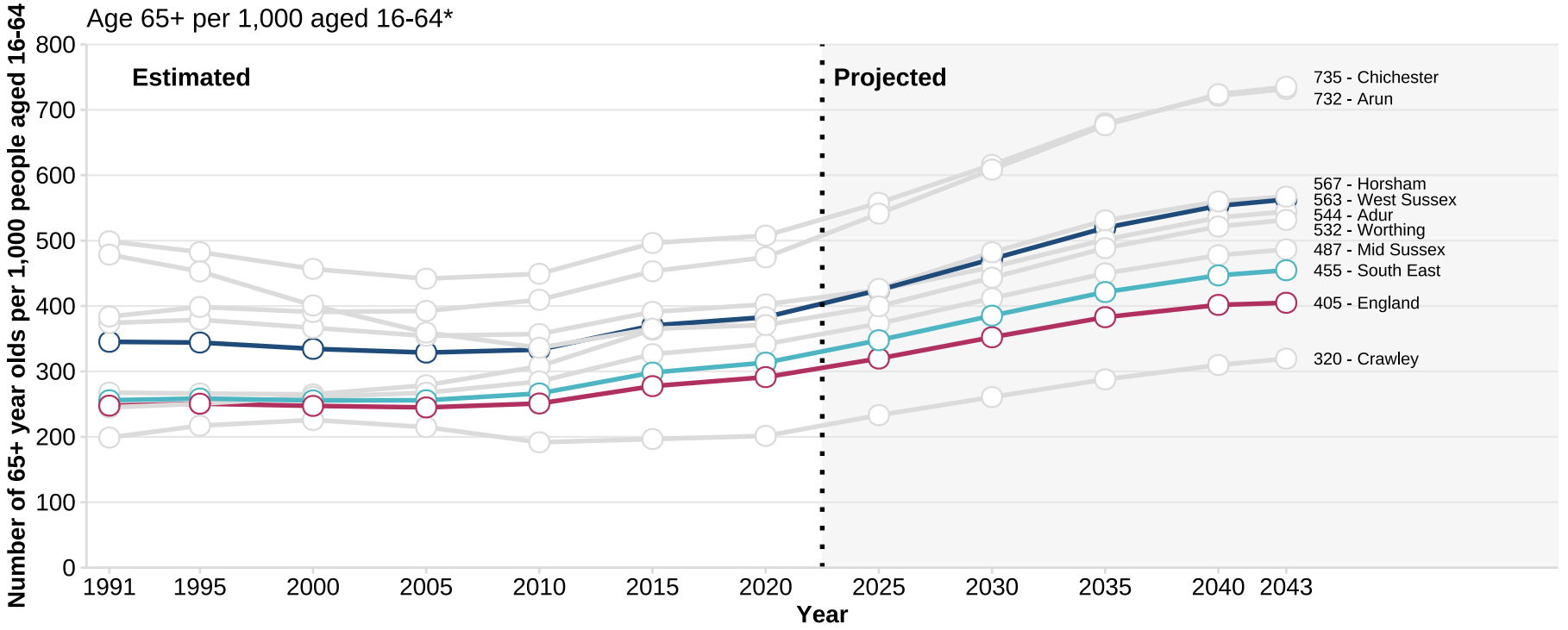
Horsham, Adur, Worthing and Mid Sussex also have higher proportions of older people than the South East average.

Crawley has a relatively low proportion of older residents, projected to rise to 320 per 1,000 older adults by 2043.

For unpaid carers, the burden will shift more onto those who are also aged 65 and over.

Old age dependency ratio: West Sussex areas; 1991-2043

Age 65+ per 1,000 aged 16-64*



*Note: This does not take into account changes in state pension age over time.

Population ageing

The largest percentage increase is in those aged 85-89. The largest numerical increase is in those aged 65-69.

Projected numbers of people aged 65 and over in West Sussex 2022-2035; change from 2022 shown in brackets

Age group	2022	2025	2030	2035
65-69 years	50,000	54,100 (+8.2%)	63,700 (+27.3%)	65,500 (+30.9%)
70-74 years	49,800	48,000 (-3.6%)	53,700 (+7.7%)	63,300 (+27%)
75-79 years	46,000	49,800 (+8.2%)	45,600 (-0.9%)	51,300 (+11.4%)
80-84 years	28,800	33,100 (+15%)	42,400 (+47.4%)	39,300 (+36.5%)
85-89 years	18,900	20,300 (+7.4%)	24,000 (+26.8%)	31,000 (+63.7%)
90+ years	12,200	12,500 (+2.8%)	14,000 (+15%)	16,800 (+38%)
65+ years	205,800	217,900 (+5.9%)	243,400 (+18.3%)	267,200 (+29.8%)

[1] ONS sub-national population projections for England: 2018 based, 2020, ONS

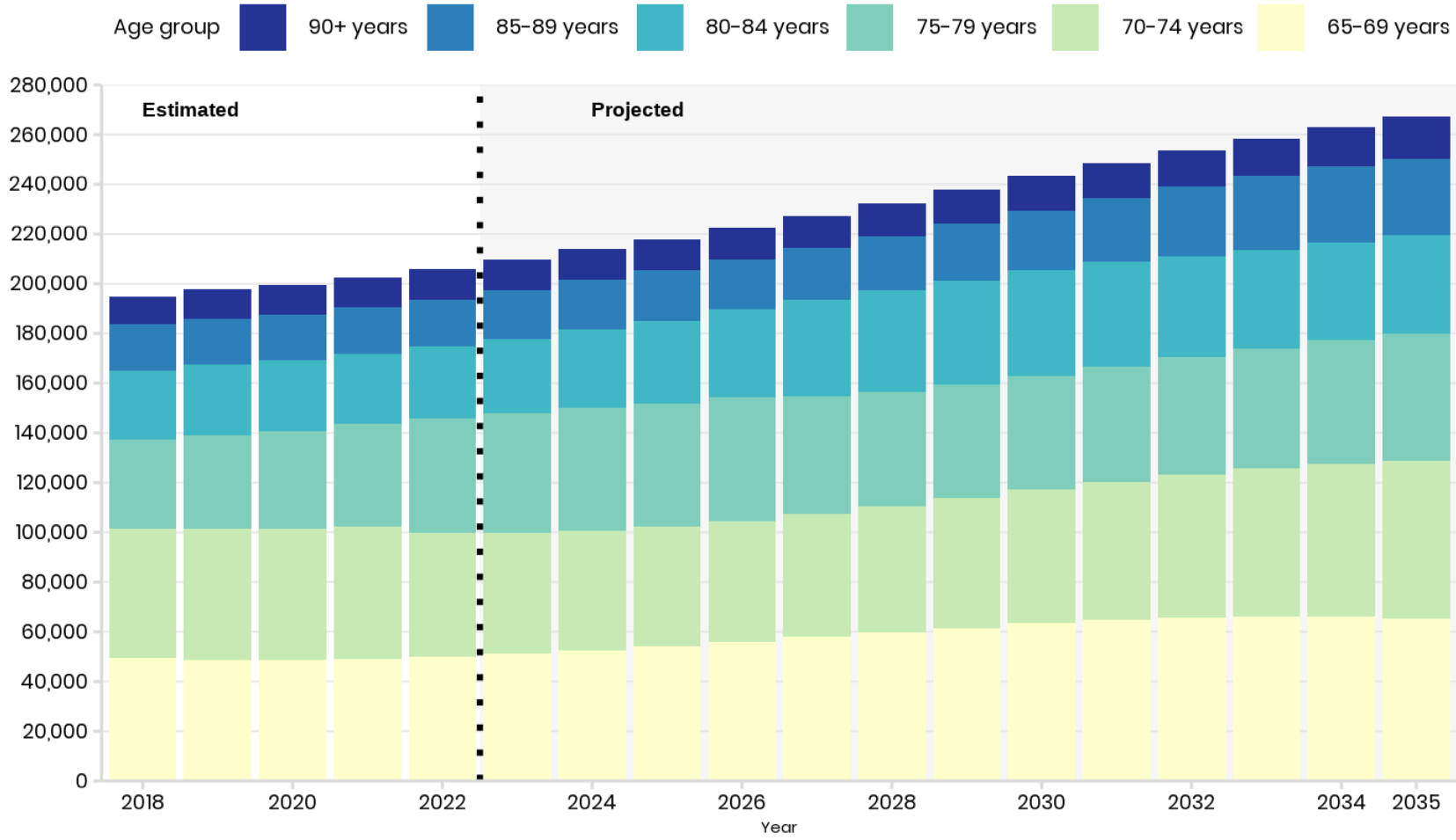
Population ageing

The number of people aged 65+ in West Sussex is projected to increase from 205,800 in 2022 to 267,200 in 2035, an increase of 29%.

The largest percentage growth will be in those aged 85-89.

Projected numbers of people aged 65 and over in West Sussex; 2018-2035

Figures from 2018 adjusted subnational projections



Data for 2018-2022 is derived from the ONS Mid Year Estimates.
Data for 2023 onwards is derived from the 2018 based subnational population projections rebased to 2022 Mid Year Estimates.

Multi-morbidity

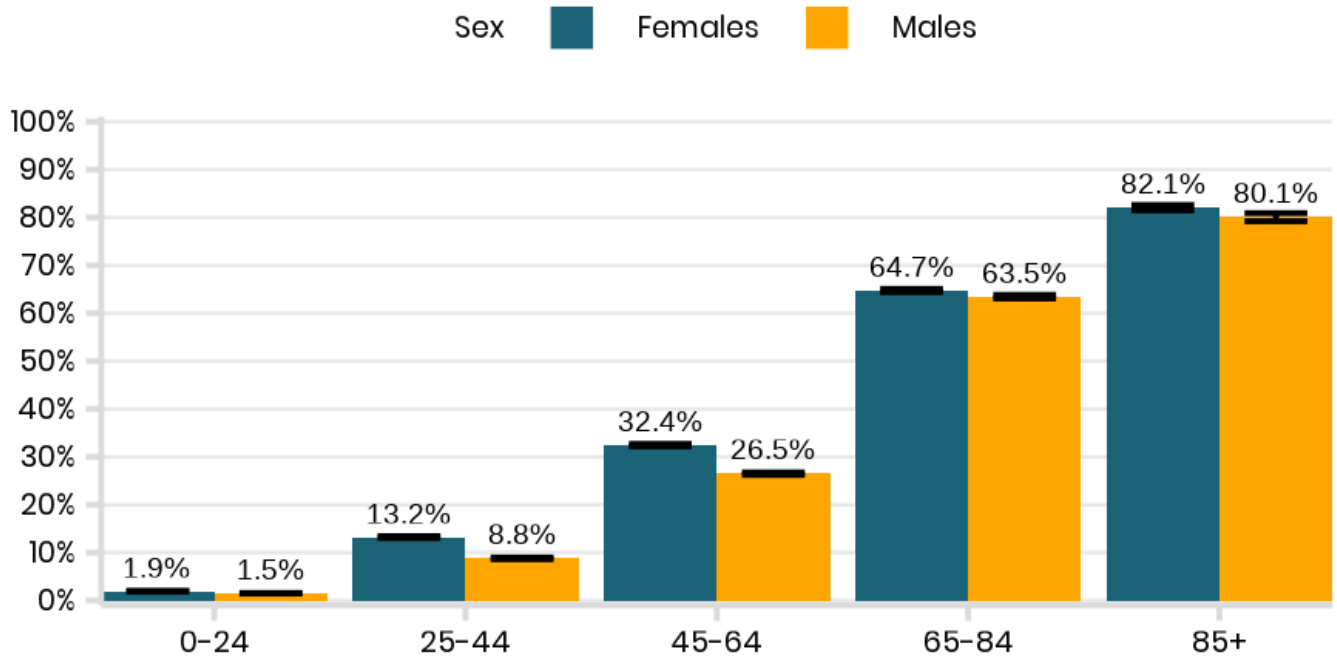
As we age, we are likely to have or develop one or more long term health condition. This is called co-morbidity. Whilst multi-morbidity is not solely a phenomenon for older age, the number of long-term conditions increases with age. The prevalence of multimorbidity is statistically significantly higher among females in every age group.

Public Health England published estimates of the number of people with multi-morbidities in each local authority using data from Barnett et al 2012 [1].

It is important to note that these figures represent the prevalence estimates we would expect if the estimates observed in the study were also observed in the local area. It is not counts of diagnoses in West Sussex.

Estimated prevalence of at least two long term conditions by age and sex;

West Sussex



Source: Public Health England 2018, based on Barnett et al 2012 estimates.

[1] Barnett, et al (2012) Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study

Population and Care Simulation Study

Andrew Kingston, Adelina Comas-Herrera, Carol Jagger, Lancet Public Health 2018

PACSim is the first dynamic microsimulation model forecasting dependency profiles of future older populations for England. It is based on longitudinal data from three nationally representative large scale cohort studies of adults aged 35 years or older.

The variables included in the model were: [1]

Sociodemographic
Age, sex, education, marital status, occupation (socioeconomic status) and retirement status.

Lifestyle behaviours
Smoking, physical activity and BMI.

Diseases and impairments
Twelve chronic diseases and geriatric conditions listed in the table.

Most diseases were considered chronic. The exceptions were depression, vision and hearing impairments, and mild cognitive impairment where the probability of recovery was also estimated. To note – multi-morbidity is not equivalent to frailty

We took these interval time-period values and interpolated the incremental changes between years allowing us to create an annual dependency prevalence estimate for 2015-2035 for those aged 65 and over. This could then be applied to our adjusted population projections for West Sussex local authorities.

Disease / impairment
Cognitive impairment
Coronary Heart Disease
Stroke
Hypertension
Diabetes
Arthritis
Incontinence
Depression
Respiratory disease
Cancer
Visual impairment
Hearing impairment

[1] Population Ageing and Care Simulation model (PACSim) baseline dataset and model construction

Defining dependency

The four categories of dependency used in the model are defined here [1].

↑ Has become a more common dependency

↓ Has become a less common dependency

Dependency level

Independent	**Low**	**Medium**	**High**
Supervision or help for any activity is not essential.	**Care less than daily**	**Care at regular times each day**	**24-hour care**
	needs help with at least one of	needs help	at least one of:
	to wash all over or bath ↓	preparing a meal ↓	unable to get to or use the toilet ↑
	cut toenails ↑	putting on socks and shoes ↑	bed bound or chair bound ↑
	shop ↑		needs help feeding ↑
	do housework ↑		often incontinent ↑
			need help dressing ↑
			severe cognitive impairment ↑

[1] Is late-life dependency increasing or not? A comparison of the Cognitive Function and Ageing Studies (CFAS), 2019, The Lancet.

Changes in level of dependency over time

PACSim forecasts the total number in each dependency category will broadly increase in proportion to the increase in the old-age population with the exception of Medium dependency. The number of people with high dependency needs are expected to grow by 20% over the next decade.

Projected numbers of people by dependency aged 65 and over 2022-2035; change from 2022 shown in brackets

Dependency	2022	2025	2030	2035
Independent	125,300	136,300 (+8.8%)	153,000 (+22.1%)	166,100 (+32.6%)
Low dependency	54,700	55,500 (+1.4%)	62,900 (+14.9%)	71,400 (+30.4%)
Medium dependency	9,800	9,600 (-2.2%)	9,700 (-0.9%)	10,100 (+3.4%)
High dependency	16,000	16,500 (+3.5%)	17,800 (+11.6%)	19,500 (+22.4%)

Change in dependency by age bracket

Projected numbers of people by dependency aged 65 and over 2022-2035; change from 2022 in brackets

Age group	Dependency type	2022	2025	2030	2035
65-74 years	Independent	76,100	80,600 (+6%)	93,900 (+23.5%)	104,200 (+37%)
65-74 years	Low dependency	16,400	14,700 (-10.8%)	16,700 (+1.6%)	18,200 (+10.5%)
65-74 years	Medium dependency	2,700	2,300 (-12.8%)	2,100 (-20.3%)	1,800 (-31.2%)
65-74 years	High dependency	4,700	4,500 (-3.7%)	4,600 (-1.6%)	4,500 (-3.3%)
75-84 years	Independent	42,800	49,100 (+14.6%)	51,700 (+20.8%)	52,800 (+23.5%)
75-84 years	Low dependency	22,500	23,800 (+5.6%)	25,800 (+14.8%)	27,100 (+20.4%)
75-84 years	Medium dependency	3,800	3,900 (+3.7%)	3,700 (-2.7%)	3,300 (-11.9%)
75-84 years	High dependency	5,800	6,200 (+7.4%)	6,900 (+19.2%)	7,300 (+27.2%)
85+ years	Independent	6,400	6,600 (+2.7%)	7,300 (+14.6%)	9,000 (+40.3%)
85+ years	Low dependency	15,800	17,100 (+8.1%)	20,400 (+28.9%)	26,100 (+65.3%)
85+ years	Medium dependency	3,400	3,400 (-0.5%)	3,900 (+16.6%)	5,000 (+47.9%)
85+ years	High dependency	5,500	5,800 (+5.5%)	6,300 (+14.9%)	7,700 (+39.3%)

Dependency by sex

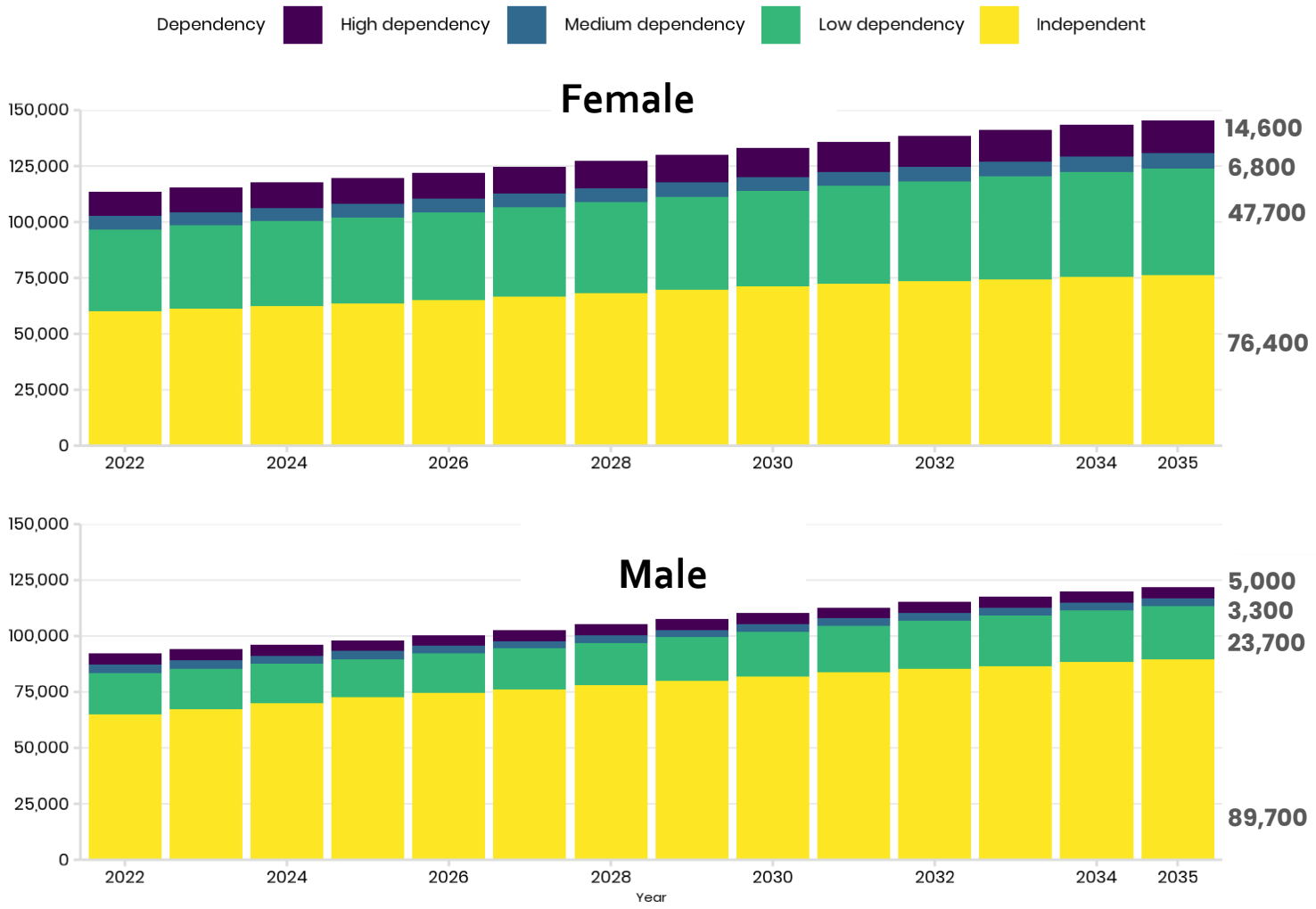
There is projected to be an additional 4,700 female residents with medium or high dependency by 2035.

The number of male residents with medium and high dependency needs is forecast to remain stable over the period.

	Male		Female	
Dependency	**2022**	**2035**	**2022**	**2035**
High	5,100	5,000	10,800	14,600
Medium	3,900	3,300	5,900	6,800
Low	18,100	23,700	36,600	47,700
Independent	65,100	89,700	60,100	76,400

Projected numbers of people aged 65 and over in West Sussex with dependency;

Figures from the PACSim modelling study applied to adjusted subnational projections

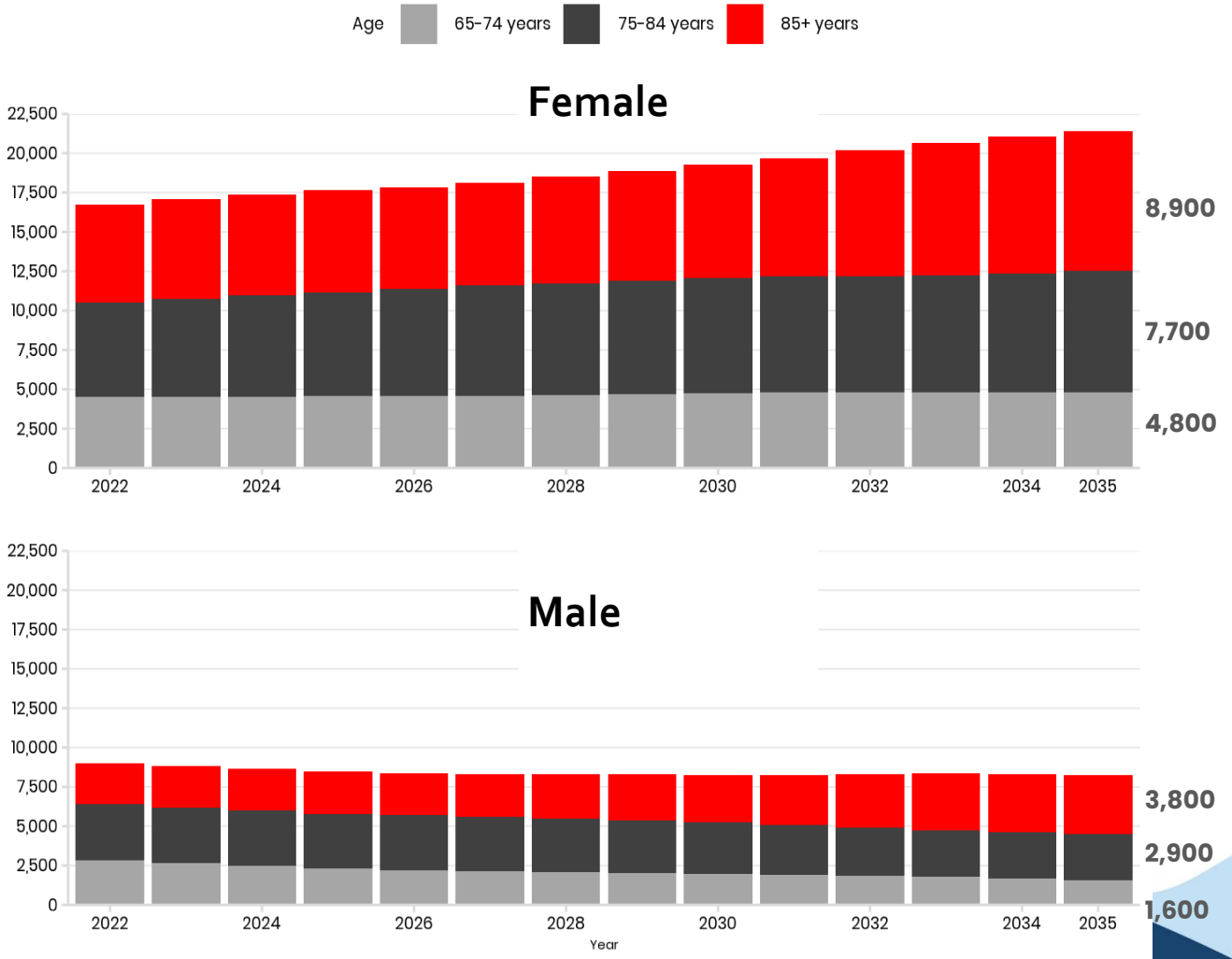


PACSim = Population Ageing and Care Simulation modelling study, Kingston et al 2018.

Substantial dependency by sex and age

Projected numbers of people aged 65 and over in West Sussex with substantial (medium or high) dependency;

Figures from the PACSim modelling study applied to adjusted subnational projections



PACSim = Population Ageing and Care Simulation modelling study, Kingston et al 2018.

Substantial dependency = medium + high dependency

Much of the growth in this category is due to women aged 85+. On average women live longer, but with fewer years without disability.

The model suggests men moving into old-age will do so with improving health - while there are greater numbers of men living to older ages, the number that are dependent may not increase proportionately.

Independent by lower-tier LA

Projected numbers of people who are independent aged 65 and over 2022-2035 by lower-tier LA; change from 2022 in brackets

Area	2022	2025	2030	2035
Adur	9,400	9,900 (+5.8%)	10,900 (+15.7%)	11,600 (+24%)
Arun	29,000	31,400 (+8.1%)	35,200 (+21.3%)	38,400 (+32.3%)
Chichester	20,900	22,900 (+9.4%)	25,700 (+22.8%)	27,800 (+32.9%)
Crawley	10,000	11,100 (+10.9%)	12,600 (+26.5%)	13,800 (+37.9%)
Horsham	21,100	23,300 (+10.3%)	26,600 (+26%)	29,100 (+37.8%)
Mid Sussex	19,600	21,300 (+8.3%)	23,500 (+19.8%)	25,300 (+28.9%)
Worthing	15,200	16,500 (+8.2%)	18,500 (+21.4%)	20,100 (+31.8%)

Low dependency by lower-tier LA

Projected numbers of people with low dependency aged 65 and over 2022-2035 by lower-tier LA; change from 2022 in brackets

Area	2022	2025	2030	2035
Adur	4,100	4,100 (-0.1%)	4,500 (+9.7%)	5,000 (+21.5%)
Arun	12,800	13,000 (+1.4%)	14,700 (+14.4%)	16,700 (+29.9%)
Chichester	9,200	9,400 (+1.9%)	10,700 (+16%)	12,100 (+31.4%)
Crawley	4,100	4,100 (0%)	4,600 (+12.7%)	5,300 (+28.8%)
Horsham	9,100	9,300 (+2.6%)	10,800 (+18.9%)	12,400 (+36.4%)
Mid Sussex	8,600	8,700 (+1.4%)	9,900 (+15.2%)	11,100 (+30%)
Worthing	6,900	6,900 (+0.8%)	7,800 (+13.4%)	8,800 (+28.9%)

Medium dependency by lower-tier LA

Projected numbers of people with medium dependency aged 65 and over 2022-2035 by lower-tier LA; change from 2022 in brackets

Area	2022	2025	2030	2035
Adur	700	700 (-3.5%)	700 (-5.2%)	700 (-3.6%)
Arun	2,300	2,300 (-2.3%)	2,300 (-1.3%)	2,400 (+3%)
Chichester	1,600	1,600 (-1.7%)	1,700 (+0.2%)	1,700 (+4.4%)
Crawley	700	700 (-3.8%)	700 (-4.5%)	700 (-0.9%)
Horsham	1,600	1,600 (-0.9%)	1,700 (+2.6%)	1,800 (+8%)
Mid Sussex	1,500	1,500 (-2.2%)	1,500 (-0.2%)	1,600 (+3.9%)
Worthing	1,200	1,200 (-3%)	1,200 (-2.2%)	1,300 (+2.6%)

High dependency by lower-tier LA

Projected numbers of people with high dependency aged 65 and over 2022-2035 by lower-tier LA; change from 2022 in brackets

Area	2022	2025	2030	2035
Adur	1,200	1,200 (+2.1%)	1,300 (+6.8%)	1,400 (+14.8%)
Arun	3,700	3,900 (+3.4%)	4,200 (+11.1%)	4,600 (+22%)
Chichester	2,700	2,800 (+4.2%)	3,000 (+12.8%)	3,300 (+23.6%)
Crawley	1,200	1,200 (+2%)	1,300 (+8.1%)	1,400 (+19.1%)
Horsham	2,600	2,800 (+5%)	3,100 (+15.6%)	3,400 (+27.9%)
Mid Sussex	2,500	2,600 (+3.6%)	2,800 (+12.3%)	3,100 (+22.6%)
Worthing	2,000	2,100 (+2.6%)	2,200 (+9.8%)	2,400 (+20.7%)

Substantial dependency and long-term conditions

The PACSim study suggests, that in 2022 5.4% of males and 8.6% of females aged 65+ will **three or more conditions** and substantial dependency needs**.** By 2035, this could reach 5.5% and 11% for males and females respectively.

Projected numbers of people with substantial dependency (medium or high) aged 65 and over by number of diseases 2022-2035; change from 2022 shown in brackets

Number of conditions	2022	2025	2030	2035
0-1 disease	4,600	3,400 (-27.9%)	2,800 (-39%)	2,300 (-50.5%)
Two diseases	6,100	5,700 (-7.1%)	5,600 (-8.1%)	5,500 (-9.6%)
Three or more diseases	14,700	16,900 (+14.8%)	19,800 (+34.3%)	22,500 (+52.9%)

Substantial dependency for those with dementia and other long-term conditions

We could expect the number of residents with dementia and at least two other long-term conditions to increase from 8,000 in 2022 to 13,700 in 2035.

For both those with substantial dependency as well as with and without dementia, there is a shift from having none or just one disease to having multiple long-term conditions.

Projected numbers of people with substantial dependency (medium or high) and with or without a dementia diagnosis aged 65 and over by number of diseases 2022-2035; change from 2022 shown in brackets

Dementia	Number of conditions	2022	2025	2030	2035
Yes	Only dementia	740	650 (-11%)	660 (-10.7%)	650 (-11.1%)
Yes	One other	2,100	2,100 (-0.7%)	2,300 (+9.5%)	2,500 (+19%)
Yes	Two or more others	8,000	9,600 (+19.7%)	11,700 (+45.6%)	13,700 (+70.2%)
No	0-1 disease	3,900	2,700 (-31%)	2,200 (-44.2%)	1,600 (-57.8%)
No	Two diseases	4,000	3,600 (-10.1%)	3,300 (-17.2%)	3,000 (-24.8%)
No	Three or more diseases	6,700	7,300 (+8.7%)	8,100 (+21.1%)	8,900 (+32.6%)

Limitations

PACSim is based on data which is now over a decade old. Prevalence of conditions and lifestyle behaviours may have changed in the intervening period. The 12 conditions and impairments included in the study are not exhaustive and do not include severe mental illness, drug and alcohol use or learning disabilities which may benefit from separate examination. Stalling increases in life expectancy since this model was produced and the effect of Covid-19 may have impacted dependency projections.

Contact details

To request breakdowns of this data at district and borough level or for any queries please contact:

Henry McLaughlin, Public Health Lead, Ageing Well – henry.mclaughlin@westsussex.gov.uk