What are long-term conditions? Why is the presence of multiple long term health conditions (multi-morbidity) important?

A long term condition is any medical condition that cannot currently be cured but can be managed with the use of medication and/or other therapies.[1,2]

Common long term conditions (LTCs) include diabetes, chronic obstructive pulmonary disease, chronic heart failure, osteoporosis and dementia.

Most LTCs are more prevalent in older age groups – for example, the prevalence of diabetes rises steadily with age in men and women peaking at 22% for men and 17% for women in their eighties. Similarly the prevalence of dementia is very low for men and women aged 60-64 at 0.9% but rises to nearly 15% for men and 20% women in their late eighties.

There is also a strong link between LTCs and social inequalities. Compared to the highest social class, people in the lowest social class have a 60% higher prevalence of LTCs and 30% higher *severity* of conditions.[3]

Multi-morbidity can be defined as where a person has two or more long term health conditions. This can include having a long term physical problem and a long term mental health problem such as severe depression.

An ageing population, impacts of changes in lifestyle, and advances in medical technology mean that more people are living with multiple long-term conditions. The number of very old people in the population, aged 85 years and over, is set to increase substantially over the next 20 years,[4] with multi-morbidity being the norm in this age group.[5]

Unfortunately disability free life expectancy is rising more slowly than total life expectancy which means that
people are living for more years with disabilities. These changes in life expectancy

pose major challenges to the health and social care system.

Multi-morbidity is associated with: premature mortality; functional impairment/disability; a negative impact on the ability to work; an increased risk of hospital admission with an increased length of stay; poor quality of life; and a greater risk of adverse drug events.[6]

Patients with severe mental health problems such as severe, recurrent depression and dementia are at a higher risk of developing long term physical problems. Furthermore, the risk of having mental health problems is increased in people with long term physical problems.

Patients with multi-morbidity have a high treatment burden in terms of understanding and self-managing their conditions, attending multiple appointments and managing complex drug regimes.[7]

Epidemiology of multi-morbidity

One widely quoted method for describing the epidemiology of multi-morbidity comes from a primary care study in Scotland.[8] This reported that 82% of those aged 85 years or older had two or more LTCs.

Health problems [morbidities] were defined as "having significant impact over at least the most recent year and with significant impact on patients in terms of need for chronic treatment, reduced function, reduced quality of life, and risk of future morbidity and mortality." The study did not include prevalence of obesity as a risk factor, and did not analyse long term conditions in males and females separately.[9] This limits to some extent the generalisabiliy of the findings.

Health inequalities in multi-morbidity

A similar analysis in a sample of GP patient records defined multimorbidity as the presence of two or more out of 36 problems recorded in patients' medical records.[10]

Multimorbidity was associated with female sex, increased age, and lower socio-economic status. Physical and mental comorbidity made up a substantial proportion of all patients with multimorbidity (34%).

Multimorbidity was highly associated with increased rates of GP consultations, prescriptions, and hospitalisations.

In Figures 1 and 2 below, in each age group column 1 in turquoise is the quintile [fifth of the population] with the *least* degree of socio-economic deprivation. Column 5 in green is the quintile with the *greatest* socioeconomic deprivation.

There is a direct relationship between socioeconomic deprivation and the percent of people with multimorbidity across all age bands apart from the very oldest.

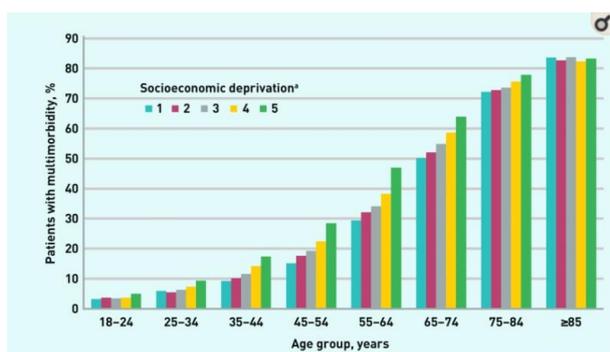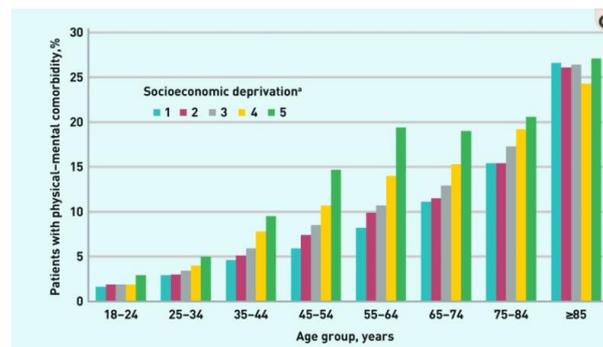Figure 1 shows the increase in multi-morbidity with age and degree of deprivation.

Figure 2 shows the variation in the presence of mental and physical ill health problems by age groups and degree of socio-economic deprivation.

There is a direct relationship between increasing levels of socioeconomic deprivation and an increasing proportion of people with both a mental and physical health problem in each age group, except in the very elderly.

How will multi-morbidity change in future?

The numbers of over 65s with *two or more* long term conditions is expected to rise from just over a half [54%] in 2015 to more than two thirds [68%] by 2035.[1]

In 2015, nearly **10%** of all over 65s in England had *four or more* long term conditions. This is predicted to rise to **17%** by 2035. One third of people with four or more conditions will have mental health problems as well [dementia, cognitive impairment but not dementia, and depression].[11]

In the over 85s the percentage with *four or more* long term conditions is expected to increase from 15% to 40% by 2035.

The expected gain in life expectancy over the next 20 years (an extra 3.6 years in men and 2.9 years in women) is less than the gain in years to be spent with multi-morbidity (5.5 years for men, 5.0 years for women). Two-thirds or more of the gain in life expectancy will be spent with four or more long term conditions.

A study from Kent Public Health Observatory in 2016 describes the prevalence and distribution of multimorbidity in Kent, based

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[1] The includes arthritis, cancers, dementia, depression, diabetes, high blood pressure [hypertension], respiratory disease, and stroke.

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on those long-term conditions which appear in the GP Quality and Outcomes Framework.[12]

Figure 3 clearly demonstrates the increase in long term conditions by five year age bands (using different colour codes for the number of long term conditions).

Figure 3:prevalence of LTCs by age in Kent
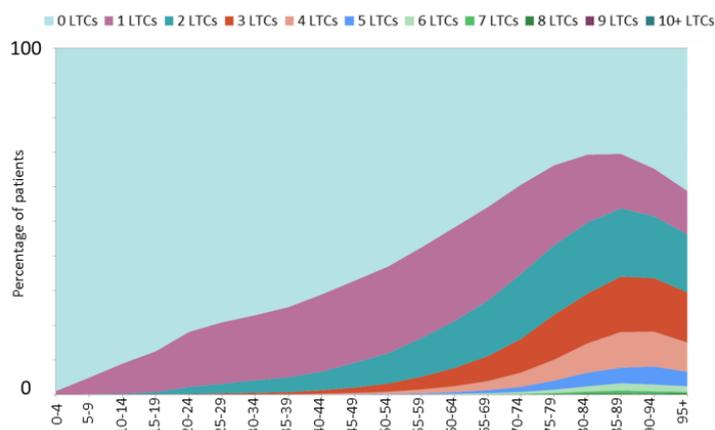
Source: Kent PHO

What is the local picture in East Sussex?

No analyses of multi-morbidity using local primary care data have been undertaken in East Sussex.

The over 65s now represent a quarter of the East Sussex population and are projected to make up nearly a third of all people in the county by 2031. All elderly age groups are expected to increase in size, with the number of very elderly people aged 85 and over in East Sussex expected to increase by 63%, from around 21,700 in 2016 to 35,300 in 2031.

Using the Scottish estimates of long term condition prevalence, PHE have estimated the prevalence for two or more long term conditions for local authorities in the SE Region, using the 2011 population.[13] These are shown for East Sussex as percentages in each broad age band in Tables 1 and 2.

East Sussex county had the highest estimated proportions of people with two or more co-morbidities (summing over all ages) of all the upper tier local authorities in the SE Region.

For males, this was [24%-61,000/254,000] and for females [30%-83,000/273,000].

Table 1: Two or more long term conditions estimated % prevalence (males) by LA

LA	0-24	25-44	45-64	65-84	85+
Eastbourne	1.8	11.0	31.0	67.0	81.0
Hastings	1.6	11.0	32.0	66.0	80.0
Lewes	1.6	9.0	28.0	65.0	80.0
Rother	1.5	9.0	28.0	64.0	79.0
Wealden	1.4	8.0	24.0	62.0	80.0
East Sussex	**1.6**	**9.0**	**28.0**	**64.0**	**80.0**
SE Region	**1.5**	**9.0**	**26.0**	**63.0**	**80.0**

Source: PHE

Table 2 Two or more long term conditions estimated % prevalence (females) by LA

LA	0-24	25-44	45-64	65-84	85+
Eastbourne	2.4	15.0	38.0	69.0	83.0
Hastings	2.1	16.0	39.0	69.0	83.0
Lewes	2.0	14.0	34.0	66.0	82.0
Rother	1.9	14.0	34.0	65.0	81.0
Wealden	1.7	12.0	30.0	62.0	82.0
East Sussex	**2.0**	**14.0**	**34.0**	**66.0**	**82.0**
SE Region	**2.0**	**13.0**	**32.0**	**64.0**	**82.0**

Source: PHE

In 2018 this gives an estimated East Sussex total of 70,000 for males and 90,300 for females with two or more long term conditions across all ages. The greatest numbers are in the 65-84 age bands for both males and females.

By 2028 the number of males with two or more LTCs will be approximately 80,000 males and 101,000 females.

The estimates for local authorities in East Sussex taken from the PHE report are shown for *physical and mental* co-morbidity in Tables 3 and 4.

Table 3 Physical and *mental* co-morbidity estimated % prevalence (males) by LA

LA	0-24	25-44	45-64	65-84	85+
Eastbourne	0.4	5.0	12.0	16.0	24.0
Hastings	0.4	6.0	14.0	18.0	26.0
Lewes	0.3	4.2	10.0	15.0	23.0
Rother	0.3	4.2	10.0	14.0	23.0
Wealden	0.3	3.2	8.0	13.0	23.0
East Sussex	**0.4**	**4.4**	**10.0**	**15.0**	**24.0**
SE Region	**0.4**	**4.0**	**9.0**	**14.0**	**24.0**

Source: PHE

Table 4 Physical and *mental* co-morbidity estimated % prevalence (females)by LA

LA	0-24	25-44	45-64	65-84	85+
Eastbourne	0.8	8.0	17.0	21.0	35.0
Hastings	0.7	9.0	19.0	22.0	35.0
Lewes	0.6	7.0	15.0	19.0	34.0
Rother	0.5	7.0	14.0	19.0	33.0
Wealden	0.4	6.0	12.0	18.0	33.0
East Sussex	**0.6**	**7.0**	**15.0**	**19.0**	**34.0**
SE Region	**0.6**	**7.0**	**14.0**	**19.0**	**34.0**

Source: PHE

There is a higher estimated prevalence of physical and mental comorbidity among middle aged and older people in Eastbourne and Hastings local authorities.

In contrast to other age groups, people aged 85 years and over are estimated to have similar levels of multi-morbidity regardless of their local authority of residence.

Who has most risk of developing multimorbidity?

As described above, age and deprivation are the biggest risk factors. Those who live in deprived areas develop multi-morbidity 10-15 years earlier than those from more affluent areas.

Lifestyle factors also have a role:
Smoking, harmful drinking, physical inactivity and unhealthy diets, alone or in combination, have been shown progressively to increase the likelihood of having multiple health problems.[14,15,16,17]

The prevalence rates of current [and past] smoking, obesity/overweight, and hazardous alcohol consumption are known to be greatest in the deprived wards of Hastings and Eastbourne.

Younger cohorts have a higher prevalence of obesity than previous generations.[18] This may contribute to the increased prevalence of multi-morbidity in those under 65 years of age.

Comprehensive model of personalised care

As an approach to managing multi-morbidity NHS England is now implementing a comprehensive model of personalised care which establishes:

- whole-population approaches to support people of all ages and their carers to manage their physical and mental health and wellbeing, to build community resilience, and to make informed decisions and choices when their health changes.
- a proactive and universal offer of support to people with long-term physical and mental health conditions to build knowledge, skills and confidence and to live well with their health conditions.
- intensive and integrated approaches to empower people with more complex needs to have greater choice and control over the care they receive.

The comprehensive model brings together six, evidence-based components or programmes, each of which is defined by a standard set of practices. These are:

1. Shared decision making
2. Personalised care and support planning
3. Enabling choice, including legal rights to choice
4. Social prescribing and community-based support
5. Supported self-management
6. Personal health budgets and integrated personal budgets

The updated Operating Model illustrates how all the various components work together to deliver a joined-up approach around the needs of each individual.

Conclusions

The ability to live and cope with multiple long term health conditions depends on both individual and wider social factors.

Many long term health conditions do not occur randomly because of common genetic, behavioural, or environmental pathways to developing disease. Identifying these clusters is a priority and will help us to be more systematic in our approach to multi-morbidity.[19]

First-hand accounts of people living with long term conditions give valuable insights into the challenges faced and which can inform local service planning. [20]

Considering individuals' experiences over time illustrates that it is not the *specific* conditions, nor even the *number* of conditions a person has that make the greatest difference to people being able to manage their changing health conditions, but instead *how well they are supported and cared for.*

A NICE guideline covers optimising care for adults with multiple long-term conditions. Implementing this should reduce multiple drug prescriptions, multiple appointments and unplanned care. Managing several long-term conditions in isolation for a person is no longer considered appropriate.

Promoting shared decisions based on what is important to each person in terms of treatments, health priorities, lifestyles and personal goals remains a key objective.[21]

Better lifestyle risk factor management should improve outcomes for many people with multi-morbidity both in the short term and in the long run.[22]

Links to main evidence sources

British Medical Association (BMA)
Growing older in the UK: a series of expert-authored briefing papers on ageing and health/ (2016)

Paper (1) social determinants of health

Paper (4) living with long term conditions.
Available online at this link

Age UK
The Age UK almanac of disease profiles in later life: A reference on the frequency of major diseases, conditions and syndromes affecting older people in England. (2015) Melzer D. Available online at this link

Department of Health (DH)
Comorbidities: a framework of principles for system-wide action. (2014)
Available online at this link

Long term conditions JSNA Commissioning for value packs December 2016 for EHS, HR and HWLH CCGs:
http://www.eastsussexjsna.org.uk/profiles/CfVLTC

This short animation explains what personalised care means for people, professionals and the health and care system.

Personalised health and care framework

Information for people, carers and families

Delivering personalised care across England

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[1] This is in contrast to acute conditions which typically have a finite duration such as a respiratory infection or inguinal hernia or a mild episode of depression

[2] British Medical Association (BMA) Growing older in the UK: a series of expert-authored briefing papers on ageing and health Available online at this link

3 Department of Health. (2012). Long term conditions.Compendium of information.3rd Edition.

[4] Office for National Statistics 2016 MYE

[5] Collerton J , Davies K, Jagger Cet al. Health and disease in 85 year olds: baseline findings from the Newcastle 85+cohort study. Br Med J 2009; 339.

[6] Marengoni A , Angleman S, Melis Ret al. Aging with multimorbidity: a systematic review of the literature. Ageing Res Rev 2011; 10(4):430–9.

[7] Treatment burden should be included in clinical practice guidelines https://www.bmj.com/content/363/bmj.k4065

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[9] www.thelancet.com/journals/lancet/article/PIIS0140-6736%2812%2961794-2/fulltext

[10] Cassell A. Edwards D. Harshfield A et al. The epidemiology of multimorbidity in primary care: a

retrospective cohort study. Br J Gen Pract. 2018 Apr; 68(669): e245–e251. Published online 2018 Mar 13. doi: 10.3399/bjgp18X695465

[11] Kingston A, Robinson L, Booth H, et al. Projections of multi-morbidity in the older population in England to 2035: estimates from the Population Ageing and Care Simulation (PACSim) model. Age Ageing Jan 2018. https://academic.oup.com/ageing/advance-article/doi/10.1093/ageing/afx201/4815738

[12] https://www.kpho.org.uk/__data/assets/pdf_file/0004/74434/Multimorbidity.pdf

[13] Estimating the prevalence of multi-morbidity in the South East Region of England. PHE. London August 2018.

[14] Royal College of Physicians. Hiding in plain sight: Treating tobacco dependency in the NHS https://www.rcplondon.ac.uk/projects/outputs/hiding-plain-sight-treating-tobacco-dependency-nhs, 2018

[15] https://www.gov.uk/health-and-social-care/healthy-eating

[16] https://www.gov.uk/government/publications/liver-disease-profiles-october-2018-update/liver-disease-profiles-short-statistical-commentary-october-2018

[17] Foresight, Tackling obesities . Future choices—modelling future trends in obesity and their impact on health. 2007.

[18] Health and Social Care Information Centre . Statistics on Obesity, Physical Activity and Diet: England 2015 . Leeds: HSCIC, 2015.

[19] https://www.bmj.com/content/368/bmj.l6964

[20] https://richmondgroupofcharities.org.uk/sites/default/files/final_just_one_thing_after_another_report_-_singles.pdf

[21] https://www.nice.org.uk/guidance/ng56

[22] Smith SM , Soubhi H, Fortin Met al. Managing patients with multimorbidity: systematic review of interventions in primary care and community settings. Br Med J 2012; 345: e5205.