Bolton's HealthMatters

JSNA: Life expectancy

Introduction

Life expectancy is the expected number of years of life remaining at a given age. It is a summary measure which provides a useful indicator of the general state of health of a population and allows for comparisons between groups. The most commonly used measure of life expectancy is life expectancy at birth. Technically speaking, this is the average number of years a person could expect to live if mortality rates at the time of their birth remained constant throughout their lifetime. Strictly speaking, as it is likely that mortality rates will change it does not tell us how long a baby born today is expected to live, though this can be estimated using trends.

The most recent life expectancy at birth for Bolton is 76.5 years for men and 80.6 years for women. This is a lower life expectancy than is average for the North West (77.0 years men; 81.1 years women) and England as a whole (78.6 years men; 82.6 years women).

An important limitation of life expectancy statistics is that they do not give much information about quality of life or morbidity. One way of addressing this is to measure Disability Free Life Expectancy (DFLE), which is the average number of years a person can expect to live free from a limiting long-standing illness or disability. The most recent disability free life expectancy at age 65 for Bolton is 7.4 years for men and 9.1 years for women. This is again lower than we see in the North West (9.3 years men; 9.8 years women) and across England as a whole (10.2 years men; 10.9 years women). The difference between the sexes in Bolton is particularly marked in Bolton compared to the wider picture.

In 2012, the coalition government published 'Healthy lives, healthy people: Improving outcomes and supporting transparency', a Public Health outcomes framework for England 2013-2016. This consists of two overarching outcomes that set the vision for the whole Public Health system. The outcomes are:

1. Increased healthy life expectancy, i.e. taking account of the health quality as well as the length of life;
2. Reduced differences in life expectancy and healthy life expectancy between communities (through greater improvements in more disadvantaged communities).

In this new framework, healthy life expectancy (as opposed to just life expectancy) is used as the key headline measure to reflect the focus on morbidity as well as mortality. The second outcome enables measurement of within-area inequalities as well as between-area inequalities in health.

Implications for commissioning

Large internal life expectancy inequalities exist within Bolton. The steep social gradient within Bolton plays a significant role within this inequality. Attention should be focused on the slope index of inequality (SII) to ensure that interventions are tailored to meet the needs of people in different deprivation deciles - using the proportionate universality approach recommended in the Marmot Review. Bolton performs very poorly on this measure, having the widest inequality of its statistical peers. This inequality has been widening and so the ambition to halt this pattern should be a key performance target in overarching strategies in our borough.

Continue the focus on improving cardiovascular health and related services within Bolton; identifying people at highest risk of cardiovascular disease and implementing evidence based interventions to reduce their risk.

Continue to improve the management of people with long term conditions.

Step up work to encourage earlier presentation of cancer related symptoms and speedy referral into diagnostic and treatment services, and improve uptake rates on screening programmes across all population groups but with particular focus on under-represented groups. Lung cancer in particular is a major inequality in Bolton.

Continue the good work on alcohol abuse and related harm.

Continue the work to improve and promote early diagnosis, effective treatment programmes and self-care techniques for sufferers of respiratory disease.

Causes of death such as infant mortality, overdose and poisonings and self-harm, whilst being few in number, their contribution to the gap in life expectancy is significant due to years of potential life lost.

Who's at risk and why?

The Marmot Review of health inequalities demonstrates very clearly the relationship between social circumstances and health. There is a considerable and significant difference in life expectancy between people living in the richest and poorest neighbourhoods nationally as well as locally, and an even greater difference in disability free life expectancy. Thus, people in more deprived areas not only die sooner, but can expect to live more of their

shorter lives with disability. This difference is not just between the richest and poorest in our society however, but is a graded relationship across all social positions[1].

The level of need in the population

As above, the life expectancy in Bolton is 76.5 years for men and 80.6 years for women. Life expectancy in Bolton has continued to increase year on year, alongside the national average. Life expectancy in Bolton has increased at a slightly faster rate in men than in women with an increase of 4.4 years in men (1991-93 to 2008-10) and 3.3 years in women (1991-93 to 2008-10).

The gap in life expectancy between Bolton and England has reduced slightly in 2008-10 compared to 2007-09, but this is against a background rise over the last decade. The gap now stands at 2.1 years for men and 2.0 years for women.

The starkest inequalities come to light when the Bolton population is broken down into group by deprivation score. The most deprived decile of Bolton has a life expectancy of 69.2 years for men and 74.8 years for women. The gap between this group and England stands at 9.4 years for men and 7.8 years for women. Meanwhile, the least deprived decile of Bolton has a life expectancy of 81.7 years for men and 85.2 years for women; the gap between this group and England therefore stands at -3.1 years. This means that the least deprived in Bolton fare somewhat better than the England average, but the most deprived fare much worse. Taking only the most deprived decile in Bolton and comparing it with countries around the world, we find similar life expectancies in Guatemala (71.2 years), Morocco (72.2 years), Lithuania (72.2 years), Samoa (72.4 years), Paraguay (72.5 years), Lebanon (72.6 years), West Bank and Gaza (72.8 years) and Iran (73.0 years).

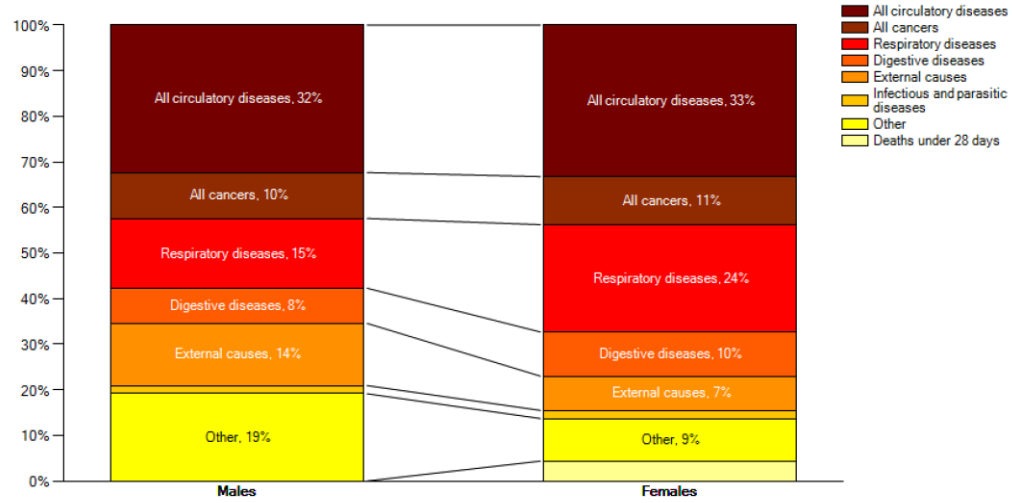
The London Health Observatory regularly produces a set of 'Marmot Indicators' which include various measures of 'within area' inequality, including life expectancy and disability free life expectancy. The measure is calculated using deprivation data (Index of Multiple Deprivation 2010) and life expectancy data (based on five year mortality data) and produces a single score – the Slope Index of Inequalities (SII), which represents the gap in years between the best-off and worst-off in a population. For Bolton this shows a life expectancy gap of 13.5 years for men and 11.3 years for women. In terms of overall life expectancy at birth, Bolton ranks roughly average within its statistical peer group. In terms of inequality however, Bolton is the single worst amongst its peers, meaning that Bolton has the biggest gap in life expectancy between its most and least deprived. Looking at inequality in disability free life expectancy, Bolton is significantly worse than the North West and England for this indicator also, but particularly so for women. Considering trends over time, we cannot draw

[1] Marmot, M. (2010) *Fair Society Health Lives (The Marmot Review)*, UCL.

any firm conclusions, however there appears to be a general upward trend suggesting there may be increasing inequality and this may be increasing more quickly in women.

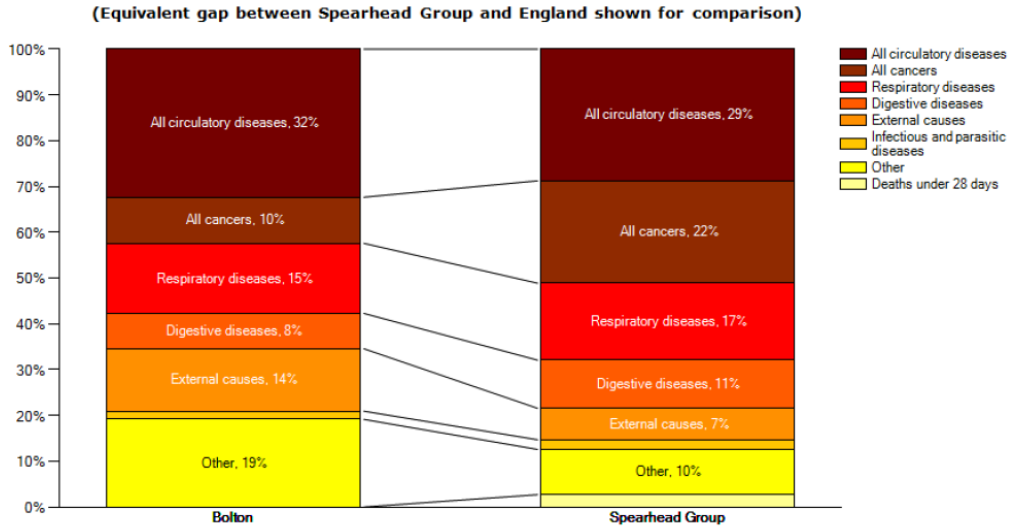
The following two charts[2] show which causes of death make up the largest contribution to the gap between Bolton and the England average, that is, causes which have higher mortality rates than the England average and therefore are the cause of the 'extra' deaths in Bolton. Targeting these causes or age groups should have the biggest impact on reducing the life expectancy gap with England.

Chart 1 - Life expectancy gap between Bolton and England average: breakdown by cause of death, males and females, 2006-08



[2] London Health Observatory (2013) *Health Inequalities intervention toolkit*, LHO.

Chart 2 – **Life expectancy gap between Bolton and England average: breakdown by cause of death, males, 2006-08, compared with average Spearhead Group gap with England**



What is apparent from the first chart is that circulatory diseases including coronary heart disease and stroke account for a large part of the life expectancy gap in both sexes, as do cancer and digestive diseases (which includes chronic liver disease and cirrhosis). External causes including injury, poisoning and suicide make up a large proportion of the gap in men, as do respiratory diseases in women. The second chart compares Bolton with the average of the 'Spearhead Group' which consists of the local authorities (including Bolton) falling within the 20% of areas with the worst health and deprivation indicators. Circulatory disease and external causes contribute more to the gap here in Bolton and cancer contributes less, compared to the spearhead group average.

The JSNA Indicator Sheet for life expectancy in Bolton (see link below) gives a more detailed breakdown of the causes. In men the key causes are: coronary heart disease 17.3%; stroke 9.4%; lung cancer 8.4%; other accidents 6.6%; pneumonia 6.2%; chronic obstructive airways disease 6.0%; suicide and undetermined injury 5.6%., and mental and behavioural disorders 5.6%. In women the key causes are: pneumonia 12.6%; coronary heart disease 11.9%; stroke 9.9%; other cardiovascular disease 9.0%; lung cancer 6.8%; other respiratory disease 5.8%; chronic liver disease including cirrhosis 5.6%.

There is a difference according to sex when the life expectancy gap is broken down by age. Male adults contribute fairly evenly across the spread of age groups, particularly so compared to the spearhead group average. For women however, there is more variation by age with larger contributions from the 30-39 and 50-59 age groups compared to the spearhead average. Women contribute notably more than men in the under 1 and the 50-59 groups, while this is reversed in the 40-49 group.

Key JSNA Indicator Sheets

MORTALITY: Life Expectancy

Current services in relation to need

See individual JSNA chapters for detailed discussion of current services for the major causes of death and disability.

Projected service use and outcomes

There is no reason to suggest that life expectancy should not continue to increase further over the next 5-10 years in Bolton. However, life expectancy within England as a whole will also almost certainly continue to grow and if current trends continue, the gap with Bolton will widen.

Evidence of what works

Bolton's Health Matters has created a collection of evidence and intelligence to ensure best practice in decision within this area. To view this collection, please click here

Unmet needs and service gaps

Life expectancy in Bolton is below average and so is disability free life expectancy. There is a huge internal inequality within Bolton itself, among the highest in the country and higher than all our statistical peers. The main causes of the gap in life expectancy are circulatory disease, respiratory disease, external causes (men) and cancer.

Recommendations for further needs assessment work

Much of the data contained in this report has a limitation in that it only considers mortality and not morbidity. Some conditions may cause great suffering but relatively few deaths, for example common mental health problems such as depression and anxiety. If only mortality (life expectancy) is considered, these conditions can appear less of a priority. Disability free life expectancy gives some indication of morbidity as well as mortality, but available data is limited. It is also possible to combine mortality and morbidity into a single index, for example the Disability Adjusted Life Year (DALY) used by the World Health Organisation in the Global Burden of Disease Study[3]. This combines the years of life lived with disability (YLD) (defined generally as a state of less than full health) and the years of life lost (YLL) due to premature death. Further needs assessment work would be strengthened by further

[3] World Health Organisation (2013) Global Burden of Disease, WHO. http://www.who.int/topics/global_burden_of_disease/en/

analysis of morbidity as well as mortality, in order to produce a more accurate picture of Public Health priorities.

In addition, close monitoring attention needs to be paid to the 'other causes' category of the causes of the life expectancy gap data as this category is growing in terms of its contribution.

Key contacts

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