Reducing the gap in male life expectancy in Hackney: The gap in 2006-8 and what we can learn from it

Anna Garner, Syed Rahman, Vicky Hobart, Frances Schmocker and Charlotte Ashton

Public Health Directorate, NHS City and Hackney

Foreword

Why is the life expectancy of males in Hackney (as measured in 2006-2008) significantly lower than the average life expectancy for males in London or England as a whole? And what can we do to improve the life expectancy of boys and men in Hackney?

This supplement to the 2010/11 Health and Wellbeing Profile explores these questions, drawing on the latest available data and local analysis. We recognise that some things have changed in the years since 2006-8 but the fundamental issue remains the same: many of the reasons why men die prematurely in Hackney are preventable through the collective efforts of society.

Our continued efforts to protect and improve the health of people in Hackney are even more necessary in the context of recession, financial constraints and significant policy and service change. These changes all will have an impact on the determinants of health including education, housing, income, employment, health and social care services, and community life.

Our analysis also raises a number of questions. The one most commonly raised in the consultation on this draft was what the impacts of socio-demographic change and population mobility have been on health outcomes for the Hackney population? We hope to come back to this question in light of the 2011 census and new local population estimates.

I hope it informs your work, and stimulates debate.

Vicky Hobart

Public Health Consultant

NHS City and Hackney

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Contents

Executive Summary

Life expectancy in Hackney

- Life expectancy at birth for males in Hackney is 77.2, significantly lower than England
- The gap between life expectancy in Hackney and England is decreasing over time: the gap was 2.71 years in 1995-1997 and is 1.1 years in 2007-2009
- Life expectancy in females in Hackney is not significantly different to life expectancy across London or England, at 82.6 years.
- The gap in life expectancy between men and women has decreased from 7.1 years in 1995-1997 to 5.4 years in 2007-2009.

Causes of premature death in Hackney

- The London Health Observatory life expectancy inequalities tool calculates that the major contributors to the gap in life expectancy between Hackney and England are (% contribution to the gap in brackets): circulatory diseases (32%), cancers (13%), respiratory diseases (9%), digestive diseases (9%), external causes (14%) and infectious diseases (12%)
- Mortality from coronary heart disease, lung and stomach cancer, chronic liver disease and COPD is much greater in Hackney than England
- Mortality from infectious diseases is higher in Hackney across all age groups than England. The main contributors to deaths from infectious disease are: HIV, hepatitis and septicaemia
- Mortality from external causes is higher than nationally, the main contributors to which are: accidents, road accidents, suicide, drug poisoning and assault.

What does this mean for men in Hackney?

- Circulatory diseases and cancer contribute the highest number of YLL of any causes to men in Hackney.
- YLL for circulatory diseases, all cancers, infectious diseases, accidents and suicides are higher in Hackney than in London and England.
- Accidents, suicides and infectious diseases have a higher number of YLL compared to what would be expected from their mortality rate (as they disproportionately affect younger people).
- The LHO tool confirms that nearly 40% of the gap in life expectancy is in men aged 60-69. Additionally, compared to other Spearhead areas, deaths at younger ages (10-29) contribute more of the life expectancy gap in Hackney.
- Life expectancy in Hackney is inversely proportional to deprivation (greater deprivation leads to lower life expectancy). The gap between the least and the most deprived in Hackney is 5 years.
- Analysis of the components of the IMD shows that life expectancy decreases with increasing scores only for income deprivation.

Why does the gap exist for males and not females?

- There are differences in life expectancy for males and females in all PCTs in England.
- The life expectancy gap between men and women is largest at younger ages and gets smaller with increasing age.
- Men in Hackney have higher deaths rates than women for a number of causes, which contribute to low life expectancy in men and not women.
- This is likely to be a due to combination of factors including biological, behavioural and psychological.
- Increasing mortality rates seen with increasing deprivation is present for both sexes but the effect is stronger for males, particularly at ages under 65.

Interventions to improve life expectancy

The following interventions have been shown to increase life expectancy:

Improve basic skills and employment prospects

Intensive support programmes for long term unemployed (particularly for those with mental illness)

Interventions around providing information on appropriate health service, linked in with benefit reassessment intervention programmes

Interventions to raise levels of physical activity, including creating better and safer local environments

Interventions to reduce calorie intake in order to reduce obesity (including anti-obesity drugs, public education initiatives, workplace programmes, work with local food outlets to promote healthier choices, interventions in early years settings)

Improve the nutrition of families and other groups by improving access to and consumption of fruit and vegetables

Improve prescribing to people at high risk of CVD (hypertensives, statins) and with diagnosed CVD

Expand early intervention services for mental health issues

Projects to increase public awareness of cancer symptoms

Work with GPs to increase timely referral of people with potential cancer symptoms

Work with secondary care to ensure clinically effective diagnosis and treatment pathways are adhered to for all patients

Provision of adequate capacity of smoking cessation services, including pharmacological therapy and counselling support, and advertising of these services

Coordinated tobacco control programmes (smoke-free policies, banning advertising of tobacco products, reducing access to tobacco products)

Combining smoking cessation and weight loss programmes

Reducing the number of outlets selling alcohol and reducing licensing hours, imposing a minimum price per unit and reducing advertising

Enabling GPs and healthcare professionals to screen people for harmful drinking/substance misuse and refer people into high quality treatment services

Improve standards of local authority housing to meet Decent Homes standards

Measures to reduce overcrowding in homes

Implement coordinated accident prevention schemes, including delivering injury prevention advice in GPs and A&E departments, provision of home safety assessments, enforcing minimum safety standards in private and local authority housing, providing education to children and young people on accident prevention (regarding the water, fire/fireworks, road safety, cycle safety) and providing a safe environment by enforcing vehicle speed reduction.

Introduction

Women in Hackney live as long as women across England. However, men living in Hackney die younger than in England as a whole. In addition there are substantial inequalities in life expectancy within the area, with men living in the 10% most affluent parts Hackney expecting to live X years longer than those living in the rest of the borough. Life expectancy is the number of years a baby born and living its whole life in the area would be expected to live if it were to experience the current mortality rates of that area. The causes of inequalities in mortality rates, which lead to differences in life expectancy, are multiple and complex, encompassing both genetic and biological factors and life circumstances (socioeconomic, cultural and environmental conditions, lifestyle choices and access to services). While health inequalities have been described for many years, the evidence base for causal relationships and interventions to improve mortality rates in deprived populations has evolved more recently (Fig 1 below).

Figure 1. The causes of inequalities in mortality [1]

The City and Hackney Health and Well-being profile (JSNA) provides a detailed review of health needs in our population. Health inequalities in Hackney are complex because the population is complex and diverse in terms of age profile, ethnic and cultural background, socio-economic status and life chances. The Profile identified thirteen priorities for action, the first of which was to reduce the gap in male life expectancy. Men's life expectancy is lower than women's in all populations, but in Hackney this inequality has been widened by the fact that women's mortality has decreased at a much faster rate than men's. This piece of work aims to further the work done as part of the JSNA to identify the causes of low male life expectancy in Hackney, and identify priority short term actions for the Hackney Health Inequalities strategy to reduce this gap.

The Strategic Review of Health Inequalities (the 'Marmot Review') published in 2010 identifies the level of inequality in health between the least and the most deprived in the country and the action required to reduce these inequalities: "To reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity that is proportionate to the level of disadvantage. We call this proportionate universalism. Greater intensity of action is likely to be needed for those with greater social and economic disadvantage, but focusing solely on the most disadvantaged will not reduce the health gradient, and will only tackle a small part of the problem." [2]

As part of the programme to reduce inequalities in health across England, the Department of Health set a target to achieve a 10% reduction in the relative gap (i.e. percentage difference) in life expectancy at birth between the Spearhead Group of PCTs and England as a whole by 2010 (measured as 2009-2011 rolling average figures). The document will set out what progress has been made to the target to date and identifies priorities to increase life expectancy and reduce the gap further.

Methodology

Information on causes of death comes from death certificates. They include info on gender, age and post code, but ethnicity and country of birth is not included. Cause of death uses international classification (ICD). This data is cleaned and analysed nationally. The Director of Public Health for each borough can apply to see monthly public health mortality file.

Office of National Statistics (ONS) data on all cause mortality (access through the National Compendium of Health Outcomes Database, NCHOD) and ONS population estimates for Hackney were used to calculate the life expectancy figures and trends. ONS mortality figures and ONS population estimates were also used to calculate mortality rates, trends and age specific mortality rates for individual causes of death (cardiovascular disease, cancer, suicide, TB, infectious diseases). Thames Cancer Registry provided the data on cancer mortality, again accessed through NCHOD. Analyses of the City and Hackney Public Health mortality files (PHMF) were used to investigate causes of death where not disaggregated nationally e.g. specific infectious diseases and external causes deaths. Average numbers of deaths per year were calculated using 2006-2008 data, as this was the most recent mortality data available at the time of the analysis and this data was used in the LHO analysis (see below). Mortality rates for 2006-2008 were compared to average numbers per year from 3 year periods from 2000 to give ranges.

All charts on the trend of life expectancy and mortality rates (Figure 3-8,) over time were produced locally, using NCHOD data from 2006-2008 and ONS population estimates for the relevant years. Differences in cancer mortality between Hackney and England are marked with an asterix.

National analysis for causes of death calculates age standardised mortality rates and data on the mortality rates over time is available. This allows investigation of the general trend in Hackney, and will allow years when there are much more or fewer deaths than usual, giving unexpected mortality rates to be seen in the context of the general trend. However, using data from the local PHMF can show more precise causes of death, but as this involves very small numbers of deaths can vary greatly from year to year and overall trend if hard to determine.

Data on life expectancy and causes of death is all for Hackney, the borough, not for City and Hackney, the PCT area.

Census response is lower in Hackney than London or nationally, and Hackney has a very mobile population so ONS population estimates may be lower than the actual population who live in Hackney, therefore mortality rates may be better than stated here.

The analysis of the contributors to the gap in life expectancy is based on a tool developed by the London Health Observatory (LHO), available at http://www.lho.org.uk/NHII/Spearhead/Default.aspx.

Objectives

- Analyse the trend in life expectancy for both males and females in Hackney
- Review the literature on what factors affects life expectancy
- Identify the factors contributing to the gap in male life expectancy in Hackney
- Review the literature on gender differences in life expectancy
- Identify why there is only a gap in male not female life expectancy
- Develop a short term (two years) action plan to the gap in male life expectancy

Data Analysis

1. Life expectancy in Hackney

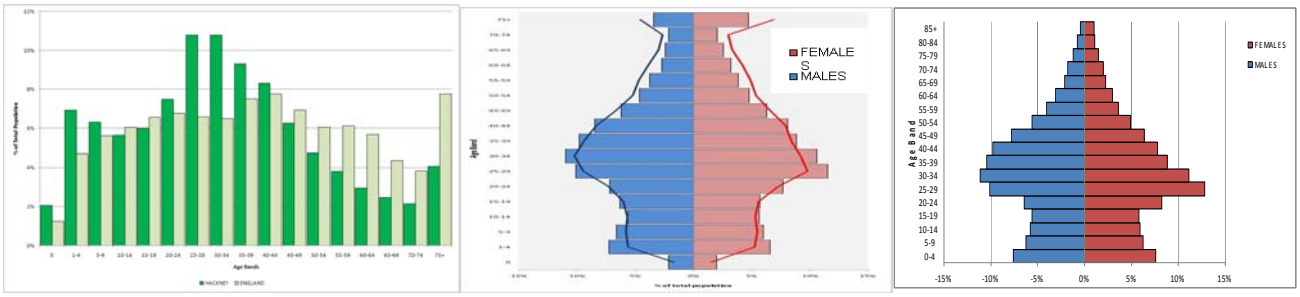
Characteristics of men in Hackney

Of a total population of 223,000 people in Hackney (GLA population for 2009) there are 110,000 men in Hackney (49%). Hackney has a young population with more than one in four (27%) of its residents aged under 20 and only 15% aged over 55. Nationally 1 in 4 of the population is aged over 55 (27%). The sexes are evenly distributed.

Number of males in age groups in Hackney (ONS 2008 estimates)

Age Group	Number of males in Hackney
0-10	18069
11-20	12206
21-30	20114
31-40	22132
41-50	15439
51-60	9302
61-70	5503
71-80	3983
81+	1659
Total	

Figure 2. Age profile of Hackney and City residents population (GLA Population estimates 2007). Left graph = age structure in Hackney and the City compared to England. Middle graph is the age structure of the resident population, the right graph is the age structure of the GP registered population



There are around 4440 births in Hackney each year and around 1,100 deaths. The population in Hackney is very mobile – around 19,000 people who move out of Hackney to somewhere else in England (internal migration) and 18,000 who move into Hackney (from elsewhere in England) each year. There are around 3,500 people who move into Hackney from abroad, and 3,000 who move out of Hackney to another country each year[3].

Just under half (48%) of Hackney residents identify themselves as white British, significantly less than in London or England. Black and black British residents are the second largest ethnic group in the area, accounting for 1 in 5 (21%) of Hackney residents. South Asians make up another 1 in 10 (10%) of the population. The census categories disguise the complexity of the ethnic profile in Hackney. The Orthodox Jewish community represents an estimated 8% of Hackney people and is located primarily in the north of the borough. This community is growing rapidly and over half of its residents (52%) are under 20 years old. There are also large Turkish and Kurdish communities in Hackney, making up about 5% of residents. Recently, there has been an increase in people coming into the area from new EU member states. Hackney's 2004 Household survey estimated that more

than 100 languages are spoken in the borough. Two thirds (66%) of respondent households stated that English was the only language spoken in their household; 1 in 5 (22%) said that English was the main language spoken at home and a further 12% said that English was not spoken in their home at all.

Hackney is one of the most deprived boroughs in England. All of Hackney's wards are among the top 10% most deprived wards nationally and in 2007 their average deprivation score placed Hackney as the second most deprived borough in the country (ONS, 2007).

The work that people do have a major impact on their health and on the health of the overall population. Being out of work can put people at increased risk of ill health and premature mortality. Death rates from all major causes have been found to be consistently higher than average among unemployed men. Unemployed women have higher death rates from coronary heart disease and suicide. Unemployment is also an important determinant of inequalities in the health of adults of working age and their families, with people of low income affected the most. Two thirds (67%) of the residents of Hackney are of working age and at the end of 2008 66% of them were in employment (See Figure 2.6). The gap between the London and Hackney employment rate has reduced from 15% in 2006 to currently higher than London. The improvement in employment in Hackney is remarkable given the level of deprivation in the borough. The rest of the working age population are either seeking employment or 'economically inactive', i.e. not actively seeking work and include carers, housewives/husbands, students and people unable to work due to sickness and disability (Figure 2.7). Economic inactivity dropped significantly, down by 2.7% in 2008 (LBH, 2009). The long term effects of the recession are yet to be understood.

Hackney still has the third highest number of violent crimes per 1000 residents, despite a 9% drop in the year. Serious violence includes a wide range of offences, including homicide and serious wounding, offences involving weapons, domestic violence, hate crime and serious sexual offences. The attractions of Hackney's lively and vibrant night time economy mean that alcohol related violence has become an area of concern. Youth violence, particularly knife enabled crime, has a big impact on community safety, for young people themselves. In 2008/09 there were 271 serious youth violence offences in Hackney and 64% of these crimes involved the use or intimation of a knife or weapon, but youth violence has fallen by almost 10% from 2008 to 2009. Gangs and related violence are also a problem in Hackney. The number of hospital admissions related to gun and knife crime at Homerton Hospital has declined steadily over the last 4 years. The majority of patients suffering from a gun related injury were men (94%) and were admitted under the care of the general surgeons or trauma and orthopaedic specialists. Knife related admissions to the Homerton start in children below the age of 14 and peak in the 20-24 year age group; gun related admissions start from the age of 15 but peak early in the 15-19 age group.28% of patients admitted with a gun related injury are of black ethnicity whereas 38% of patients admitted with a knife related injury are of white ethnicity.

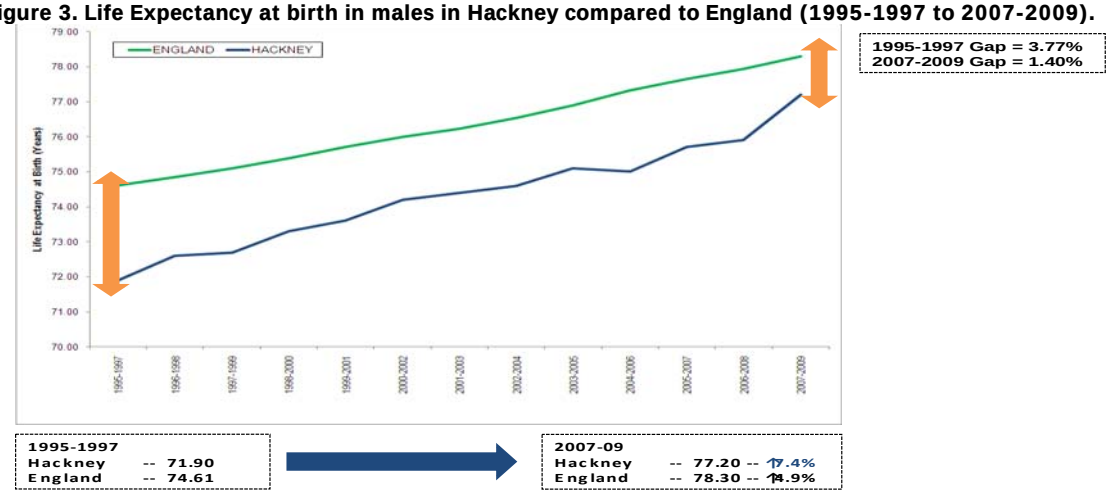
There are 48 GP practices in Hackney and the City and in June 2009 270,693 residents were registered. This is higher than the estimated resident population. The compliance with the Census survey completion was lower in Hackney than elsewhere in the country, so may be an underestimate of the population. 96% of residents participating in a representative local survey in 2008/09 said that they were registered with a GP practice. The unregistered proportion goes up to 6% in the 16 to 34 year old age group and in those who work full time. In a study of attendances at Homerton A&E in a 10 month period in 2008, 20% of attendances were from people not registered with a GP (the vast majority of these having no NHS number)[4]. This is not however indicative of the number of people in Hackney who are not registered with a GP, as half of these were from surrounding London boroughs and there are likely to be a lot of people who didn't/couldn't give enough data to ascertain whether they were registered. Men were more likely to be unregistered than women and most likely to be men between the ages of 17 and 39 years.

Life expectancy in Hackney

Life expectancy is calculated using all-cause mortality figures for an area over a period of time and so can be interpreted as a snapshot of the overall level of mortality in the area. Inequalities in health outcomes such as life expectancy reflect social and economic inequalities. Health inequalities are defined in the Greater London Authority Act in 2007 as inequalities in respect of life expectance or general state of health which are wholly or partly a result of differences in respect of general health determinants[5]. These include: standards of housing, transport services and public safety; employment prospects and earning capacity; degree of ease/difficultly with which people access public services; personal behaviours or lifestyle which may be harmful to health and any other factors which may affect a person's health generally.

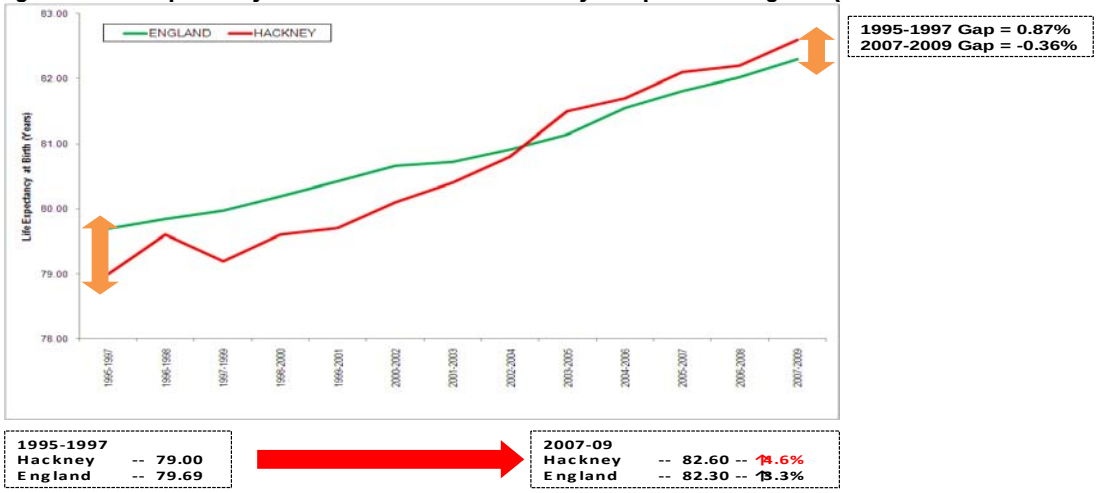
The gap between life expectancy in Hackney and the England average is decreasing over time (Figure 3). Male life expectancy in 1995-1997 in Hackney was 71.9 years, 2.71 years below England and a gap of 3.77%. Since 1995-1997 life expectancy has increased at a faster rate than England, so current life expectancy (2007-2009 data) is 77.2 years in Hackney compared to 78.3 years across England. Therefore the current gap is 1.1 years or 1.4%. The life expectancy gap in males between Hackney and England has decreased by 59% since 1995-1997.

Figure 3. Life Expectancy at birth in males in Hackney compared to England (1995-1997 to 2007-2009).



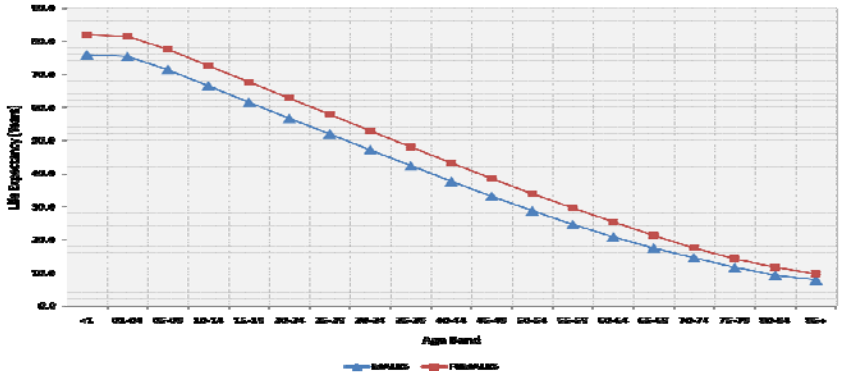
In 1995-1997 life expectancy in females in Hackney was also lower than in England, with a gap of 0.69 years (0.87%). Life expectancy has increased since 1995 by 4.6% and current data from 2007-2009 shows that life expectancy in Hackney females in now higher than in England, at 82.6 years compared to 82.3 years (Figure 4).

Figure 4. Life Expectancy at birth in females in Hackney compared to England (1995-1997 to 2007-2009).



Analysis of life expectancy in different age groups in males and females in Hackney shows that life expectancy decreases approximately linearly as age increases (Figure 5). This also shows that life expectancy is consistently lower in males than females, with the gap in life expectancy decreasing at older ages.

Figure 5. Life expectancy for males and females across 5 year age band (2004-2008)



Summary

- Life expectancy at birth for males in Hackney is 77.2, significantly lower than London or England
- The gap between life expectancy in Hackney and England is decreasing over time: the gap was 2.71 years or 3.77% in 1995-1997 and is 1.1 years or 1.4% in 2007-2009
- Therefore the life expectancy gap in males between Hackney and England has decreased by 59% since 1995-1997.
- Life expectancy in females in Hackney is not significantly different to life expectancy across London or England, at 82.6 years.
- In 1995-1997 female life expectancy was 0.69 years lower than the national average but life expectancy in females has increased at a faster rate in Hackney than England so average life expectancy in females in Hackney is slightly higher than England in 2007-2009.
- The gap in life expectancy between men and women has decreased from 7.1years in 1995-1997 to 5.4years in 2007-2009, but is still an inequality. Discussion of the causes of mortality in males and females and why male life expectancy is lower in males in included in Chapter 4 below.
- Life expectancy decreases approximately linearly as age increases, there are not points which life expectancy decreases disproportionately.

2. What are the causes of premature death of men in Hackney?

Literature review into the causes of premature death in males

Premature death is defined as death in a person under 75 years.

There is significantly variation in premature mortality between local areas in England and Wales. A study which calculated the probability of survival to 75 showed that this was highest in males in the South West and lowest in the North East, with a difference of around 26 percentage points between the lowest and the highest local authorities[6]. Further research has shown that the shortest-lived populations live in four clusters of local authorities: in the North-East, North-West, Midlands and inner London[7].

The probability of survival increased overall in England and Wales from 1981 to 2006, but it increased less in London than in other regions. The gap between the lowest and the highest local authorities has also increased over this time. Hackney was in the lowest quintile for probability of survival in 1981 and has remained there since[8]. Differences in life expectancy are due to predominantly due to

differences in mortality rates in younger people (under 75 years of age) and research has shown that geographical patters of life expectancy identified are mainly attributable to variations in deprivation, but spatial area characteristics (i.e. Mining Manufacturing and Industrial areas, Inner Cities, Rural etc) and household income also independently play a role in predicting life expectancy[9],[10],[11]. Therefore urban characteristics and household income are likely to be important for Hackney.

National and international studies have shown that increasing deprivation is linked with higher mortality rates[12],[13],[14],[15],[16]. with the increases becoming steeper in the most deprived areas. The death rate for all causes is 70% higher in the 5% of the national population in the most deprived wards than in the 5% of the population in the least deprived wards[17]. This link is stronger for deaths under 65 and for males, with males aged 15-64 in the most deprived 5% of wards having a death rate of 2.8 times higher than the rate in the least deprived wards. This results in a difference in life expectancy of around 5-7 years between the most and least deprived wards. If calculating disability free life expectancy then the difference between most and least deprived is much greater at 12-14 years[18],[19].

Analysis of mortality rates for different causes of death has shown a similar link between increasing deprivation and high mortality rates for heart disease and stroke (mortality rates 2-5 times higher in the most deprived compared to the least deprived), cancer (mortality rates 1.7 times higher in the most deprived compared to the least deprived), respiratory diseases (mortality rates 4 times higher in the most deprived compared to the least deprived) and accidents (only for males, but mortality rates 1.6 times higher in the most deprived compared to the least deprived). For all these causes the effect is stronger when comparing mortality rates in people aged 15-64. These trends are also confirmed when analysing death rates and their link with the revised National Statistics Socioeconomic classification (NS-SEC)[20], Standardised mortality ratios for deaths under 75 have increased for the poorest decile in England since 1990 and the gap between the richest and the poorest has increased[21].

Research into the risk of premature death has shown that the majority of the link with deprivation and the inequalities in mortality can be explained by smoking prevalence, obesity, lack of exercise, low social support and employment relations[22],[23],[24],[25]. These lifestyle causes reflect more underlying causes such as income, employment status, education and neighbourhoods. There are many reasons why lower socioeconomic groups are less likely to adopt positive health behaviours, including lack of knowledge, lack of material resources to enable the behaviour, the environment they live in may make change harder, some behaviours may be more heavily entrenched in these groups and heath behaviour may not be a priority if people have other problems such as income, housing, employment or personal safety[26].

Risk behaviours such as smoking and high alcohol consumption are more prevalent in some population groups. People in lower socioeconomic groups are more likely to adopt behaviours which may damage their health[27],[28].

Research has suggested that the majority of the inequalities in mortality between socioeconomic groups can be attributed to smoking[29],[30]. Analyses of trends of smoking prevalence suggest that smoking prevalence is up to 3 times higher in manual groups compared to non-manual groups (except for the youngest cohorts, born 1971-1985)[31]. Smoking prevalence has decreased over time; however, men born 1956-1971, despite being less likely to smoke than earlier cohorts, were also less likely to give up[32]. Smoking is the single largest cause of preventable deaths in England and smokers have a significantly lower survival than non-smokers[33],[34]. Richard Doll's longitudinal study on smoking found that adults who had smoked their entire lives died on average 10 years earlier[35]. Smoking dramatically increases the risk of lung and other cancers, cardiovascular and lung (COPD) disease.

Excessive alcohol consumption is linked with increased mortality rates. For both sexes, more deprived areas have significantly higher levels of alcohol-related hospital episodes, crime, and contribution to reduced life expectancy[36]. Deaths from alcohol related diseases have risen since 1993[37]. Alcohol specific mortality is not significantly different to the national average in Hackney. However, alcohol

related hospital admissions are significantly higher in Hackney than nationally (only in males, not in females)[38].

High mortality rates due to coronary heart disease are linked with deprivation[39],[40],[41]. Coronary heart disease is a major cause of premature mortality and the risk factors include: unmanaged diabetes, unmanaged hypertension, obesity, low levels of physical activity and poor diet. The lifestyle factors in this list are more prevalent in deprived populations and the lack of diagnosis or correct management of conditions such as diabetes or hypertension is affected by reduced access to healthcare in lower socioeconomic groups.

Obesity is far more prevalent in men than women: 67% of men nationally are overweight compared to 58% of women[42]. In addition to coronary heart disease, obesity is also linked to diseases such as diabetes, hypertension, hypercholesterolemia, osteoarthritis, gallbladder disease and some cancers. As a result of these, obesity has been shown to increase mortality rates and studies have shown that overweight people have a lower life expectancy (by 1-4 years) and obese people have a life expectancy which is lower by 3-10 years[43],[44]. It has also been suggested that 23% of vascular deaths and 6% of cancer deaths are due to overweight and obesity.

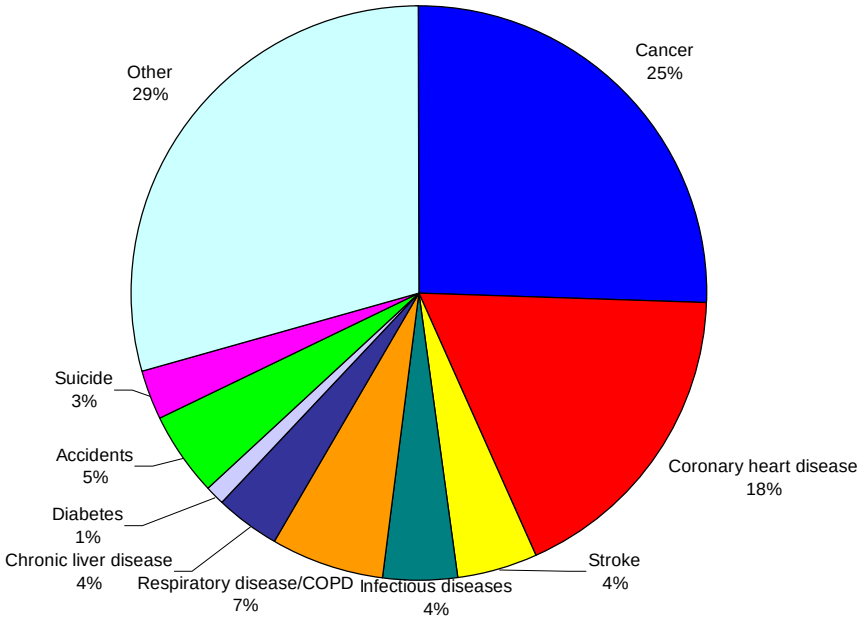
Prevalence of accidents is also higher is areas of higher deprivation, but it is likely that lower social class increases the likelihood of factors which increase injury risk, with poor quality housing being an example as housing conditions are estimated to contribute to 11% of childhood injuries[45]. Injury rates for children from lower socioeconomic classes are 3 times higher than for children from the highest social class[46]. Additionally, people in lower socio-economic groups are more likely to work in more hazardous physical environments[47]. A study from Russia used a self-completed questionnaire to calculate scores of perceived control over life and over one's health and these were analysed in logistic regression for two outcomes: poor self-rated health and low physical functioning[48]. Higher control over life and perceived control over health were significantly and independently related to both outcomes. The ability of people in lower socio-economic groups to access healthcare services (both preventative and curative) is variable, leading to differences in health problem incidence and survival.

In addition to differences in health between socioeconomic groups, there are also differences between ethnic groups: South Asian people have higher rates of heart disease and hypertension, Black Caribbean people have high rates of hypertension but not heart disease, all BME groups have high rates of hypertension but low rates of respiratory illness compared to White ethnic groups[49].

Premature death in Hackney

There were 1968 male deaths in Hackney between 2006 and 2008, equating to around 660 per year. Around 55-60% of these deaths (~360 per year) were premature (in men under 75). The main causes of premature death (in those aged under 75) in Hackney are shown in Figure 6. Mortality from cancer is the largest cause of death (causing 25% of all deaths), followed by cardiovascular disease (coronary heart disease and stroke accounting for 22% of all deaths), with respiratory diseases, infectious diseases and accidents responsible for a significant proportion of deaths.

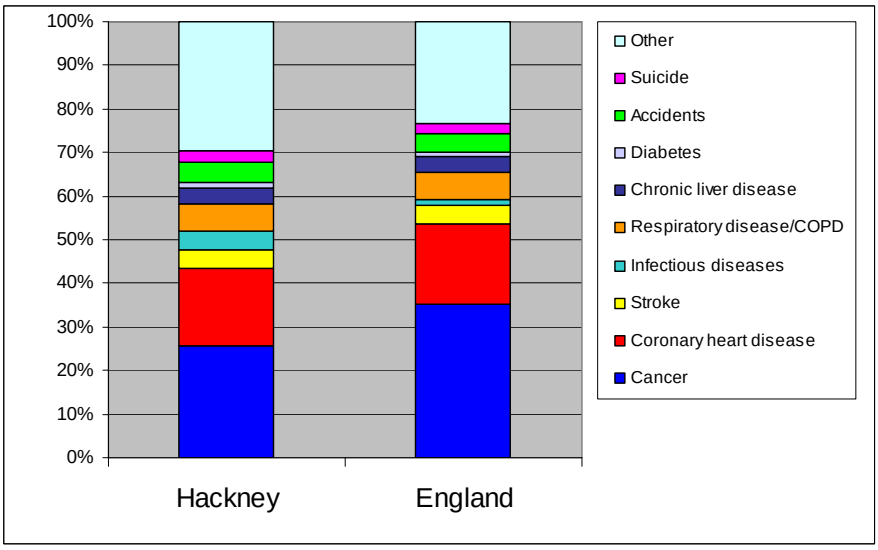
Figure 6. Main causes of deaths for males under 75 in Hackney (2006-2008)



These are absolute numbers of deaths, so not adjusted for age of the population. Therefore comparisons between Hackney and England (with different age structures of the population) has to be done with caution.

Examining the causes of death in Hackney and England (Figure 7) shows that a greater proportion of premature deaths in Hackney are caused by infectious diseases, respiratory diseases, suicide and accidents and far less premature deaths are caused by cancers in Hackney than nationally.

Figure 7. Comparison of the main causes of deaths for males under 75 in Hackney and England (2006-2008; numbers of deaths shown as a % of total numbers of deaths)

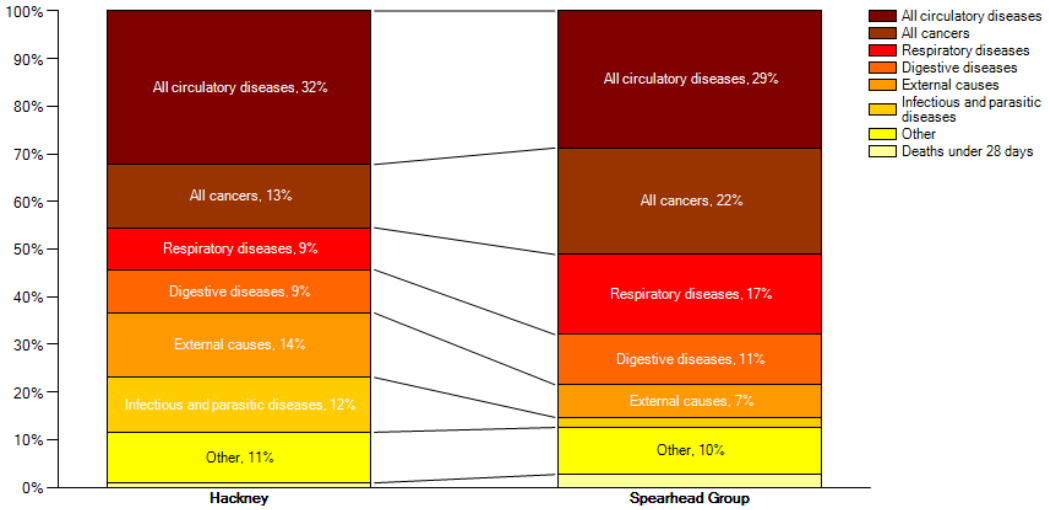


The London Health Observatory developed a tool to analyse the contribution of different factors to the life expectancy gap in the 70 deprived (Spearhead) PCTs (based on death rates from 2006-2008). Life expectancy in Hackney calculated using 2006-2008 data is 75.9, compared to the national life

expectancy of 77.9. This equates to a gap of 2.6%. The gap is similar to the average gap of the Spearhead PCTs (2.7%).

Figure 8 shows the percentage contribution of the main contributors to the gap in life expectancy in Hackney, and a comparison with the Spearhead PCTs as a whole. The largest contributors to the gap in life expectancy are circulatory disease (32%), cancer (13%), external causes (14%) and infectious diseases (12%), accounting for over 70% of the gap in life expectancy. The contribution of these will be discussed in detail below.

Figure 8. % contribution of different causes to the life expectancy gap in males in Hackney compared to the Spearhead group (2006-2008)



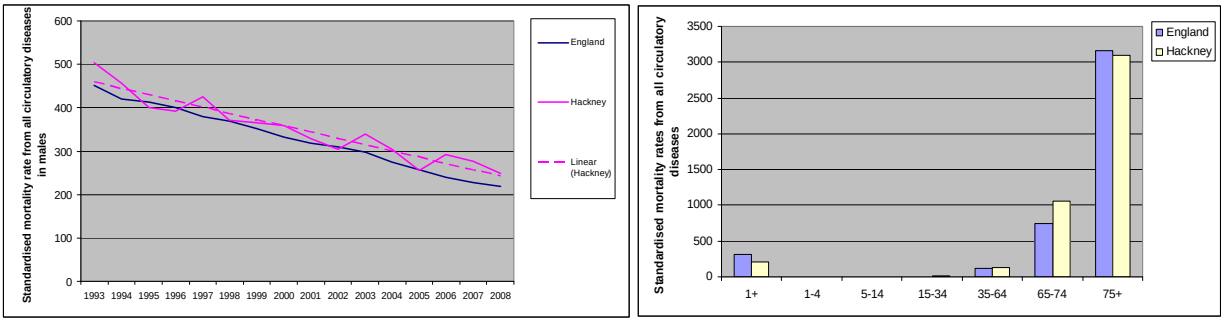
Source: London Health Observatory Spearhead Life Expectancy Tool, 2010

Cardiovascular disease

Cardiovascular disease, also known as heart and circulatory diseases, covers all diseases that affect the heart and circulation. This includes conditions such as coronary heart disease (angina and heart attack) and stroke. The risk of cardiovascular disease is increased by a number of factors including smoking, high blood pressure, high blood cholesterol, physical inactivity, being overweight, diabetes, a family history of heart disease and increasing age.

There are currently around 200 deaths per year from cardiovascular disease in Hackney. This has reduced over the last 15 years by nearly 50% from around 360 deaths per year. This trend has also been seen nationally. Mortality rates in males in Hackney from cardiovascular disease are higher than nationally (Figure 9). Mortality rates in females are slightly lower than national rates. Analysis of mortality rates at different ages shows that there is higher mortality in the 65-74 group in Hackney than nationally (1062 deaths per 100,000 people compared to 861 per 100,000, respectively). NB mortality shown on the chart as 1+ indicates mortality in all ages.

Fig 9. Standardised mortality rates due to circulatory diseases in males (trend data: 1993-2008 and rates in different age groups)

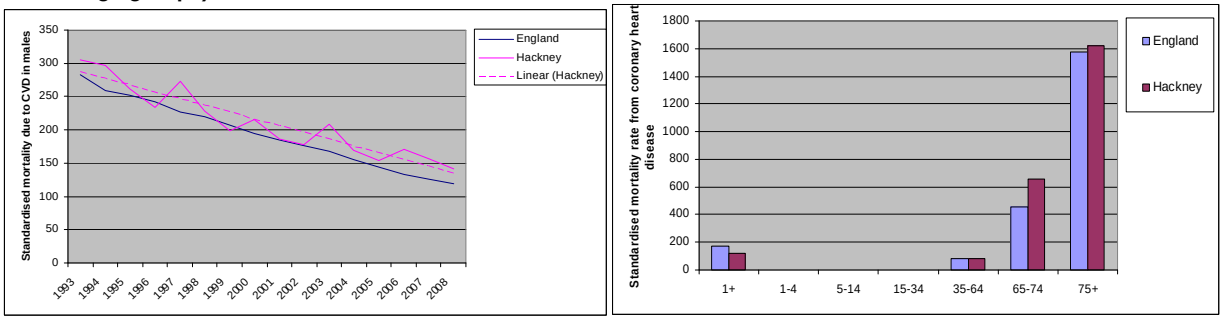


The main components of mortality from circulatory diseases are due to coronary heart disease and stroke. There are on average around 120 deaths per year due to coronary heart disease in Hackney males, 40 from stroke and 20 from other circulatory diseases.

The male mortality rate from stroke has historically been lower in Hackney than in England (however, the most current data shows that the rate is rising to become equal to national rates). Additionally, mortality from stroke is higher in Hackney than nationally in the 65-74 age group (207 deaths per 100,000 population in Hackney compared to 125 per 100,000 in England).

However, mortality from coronary heart disease is persistently higher than national levels, despite decreasing over time (Figure 10). Analysis of mortality at different ages shows that there is higher mortality in Hackney in all age groups above 35, but significantly higher in the 65-74 group.

Fig 10. Standardised mortality rates due to cardiovascular diseases in males (trend data: 1993-2008 and rates in different age groups)

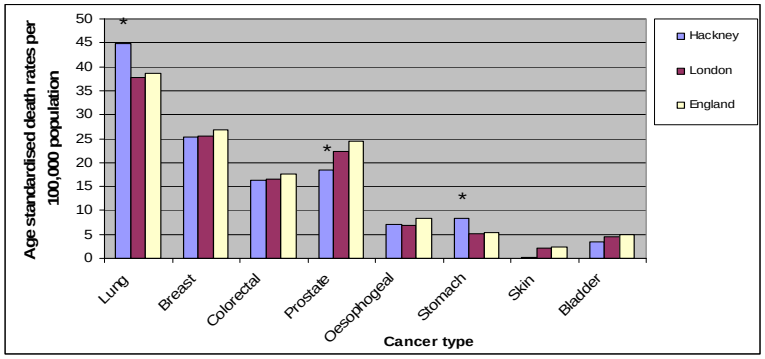


This suggests that coronary heart disease, and to a lesser extent stroke, is a major contributor to premature death and the life expectancy gap in Hackney.

Cancer

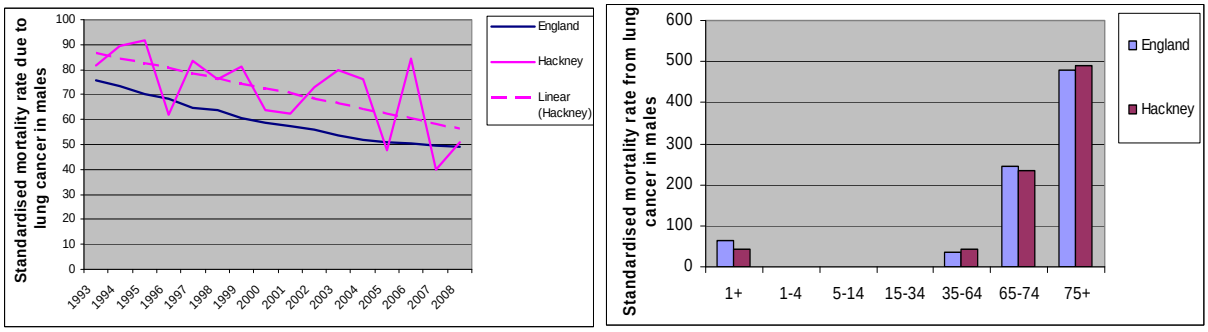
The highest causes of cancer death in males in Hackney are from lung, breast, colorectal, prostate and stomach cancer. Mortality rates from lung and stomach cancer are significantly higher in Hackney than nationally, while mortality from prostate cancer is significantly lower than nationally (marked with an asterix in Figure 11).

Figure 11. Comparison of age standardised mortality rates for different cancer types across Hackney, London and England.



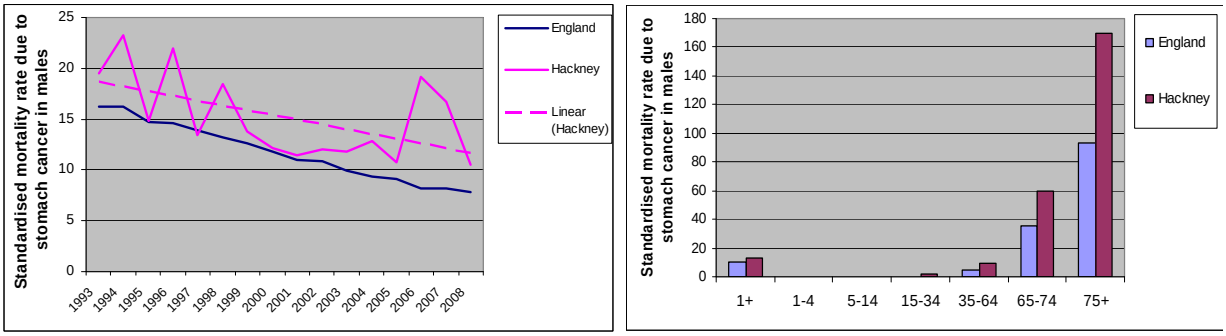
There are around 50 deaths per year from lung cancer in men in Hackney. Mortality rates from lung cancer are decreasing over time but remain significantly higher than England (Figure 12). The high incidence of and mortality from lung cancer is linked with the high current/previous smoking prevalence locally. Disproportionately high mortality rates for lung cancer are found in the 35-64 age group and the over 75 age group in Hackney compared to England.

Fig 12. Standardised mortality rates from lung cancer in males (trend data: 1993-2008 and rates in different age groups)



Incidence of stomach cancer is much lower than lung cancer, but incidence in Hackney is significantly higher than nationally (21 per 100,000 cases per year in Hackney compared to 14 per 100,000 in England). The causes of this are unknown. Survival rates from stomach cancer are very low (61% of people die within a year of diagnosis and 85% of people die within 5 years), therefore linked with the high incidence, mortality rates from stomach cancer are consistently higher than nationally (Figure 13). There are on average 15 male deaths from stomach cancer per year in Hackney. Mortality rates from stomach cancer are higher in all age groups, from age 15 to over 75.

Fig 13. Standardised mortality rates due to stomach cancer in males (trend data: 1993-2008 and rates in different age groups)



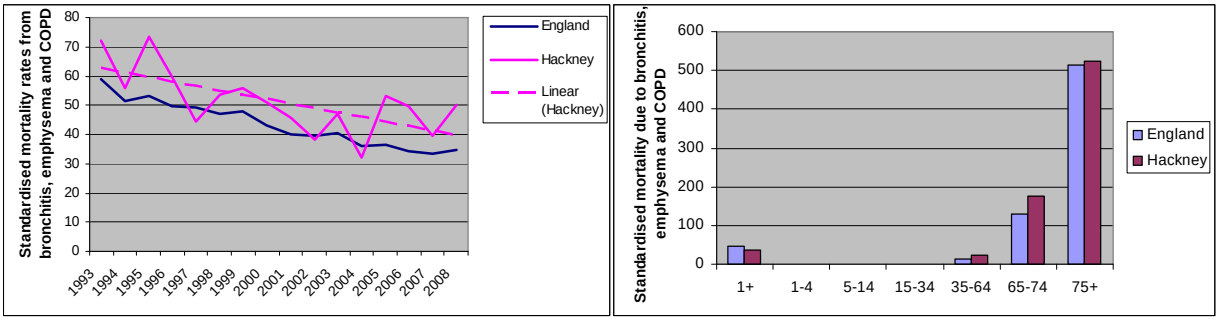
The high incidence and mortality from lung cancer in males locally, results in this being a contributor to the life expectancy gap. There are smaller numbers of deaths from stomach cancer, but the mortality rates are far in excess of national rates (16 deaths per 100,000 population in Hackney compared to 8 for England), and in ages under 75 mortality rates are almost double that of national rates, leading to a relatively large contribution to the life expectancy. Incidence and mortality from lung cancer are strongly linked to deprivation. Mortality from lung cancer is higher in males than females, but this is linked with differences in smoking patterns historically. However, the gap in lung cancer mortality between males and females is reducing as smoking patterns change.

Respiratory diseases

Respiratory diseases contribute less to the life expectancy gap in Hackney compared to other Spearhead PCTs, but still account for nearly 10% of the life expectancy between Hackney and England. Mortality due to respiratory diseases includes deaths from bronchitis, emphysema, chronic obstructive pulmonary disease (COPD) and pneumonia.

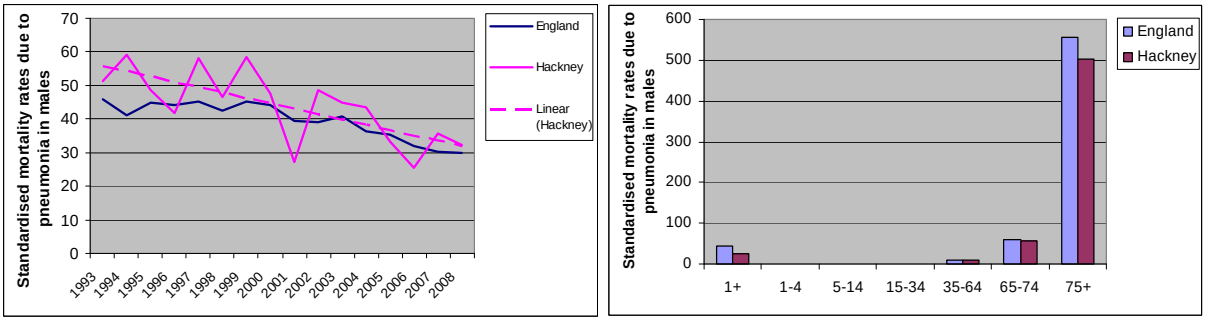
Mortality rates from bronchitis, emphysema, chronic obstructive pulmonary disease (COPD) are higher in Hackney than England (50 per 100,000 population in Hackney compared to 35 per 100,000 population in England). Around 40 males in Hackney die per year from one of these diseases, of which less than 5 are from bronchitis and emphysema, the rest are other COPD. The highest mortality rates are in the over 75 age group (Figure 14), but there are higher rates in Hackney than in England in all age groups, particularly the 65-74 group.

Fig 14. Standardised mortality rates due to bronchitis, emphysema and COPD in males (trend data: 1993-2008 and rates in different age groups)



Less people die of pneumonia than COPD, with around 25-30 men dying each year from pneumonia in Hackney. Mortality from pneumonia in males is similar in Hackney to England (slightly higher in 2008 but slightly lower in 2006; Figure 15), but is decreasing overall at a faster rate, so was much higher in the past. Mortality from pneumonia is also the highest at ages over 75.

Fig 15. Standardised mortality rates due to pneumonia in males (trend data: 1993-2008 and rates in different age groups)

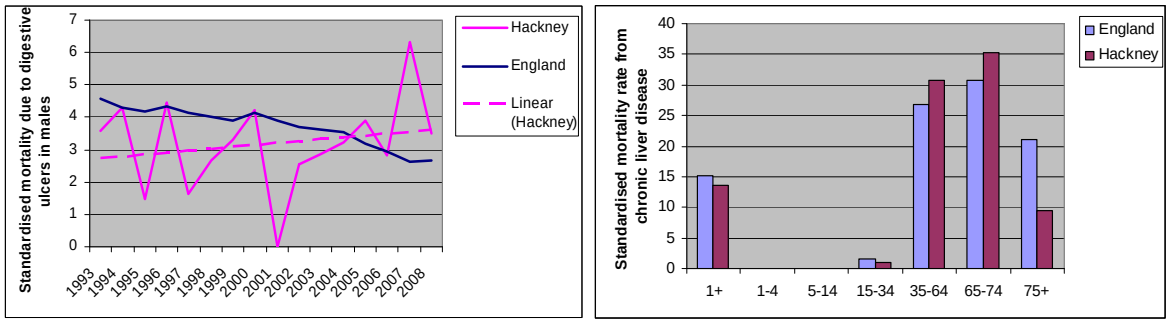


The high mortality from COPD locally, more of these at younger ages than nationally, means this will be a contributor to the life expectancy gap. The main risk factor for COPD is smoking, although deprivation also appears to be a risk factor independent of smoking. Air quality, either at work (exposure to dust or gases) or at home (damp, cold housing and environmental tobacco smoke) or outdoor pollution can also exacerbate COPD.

Digestive diseases

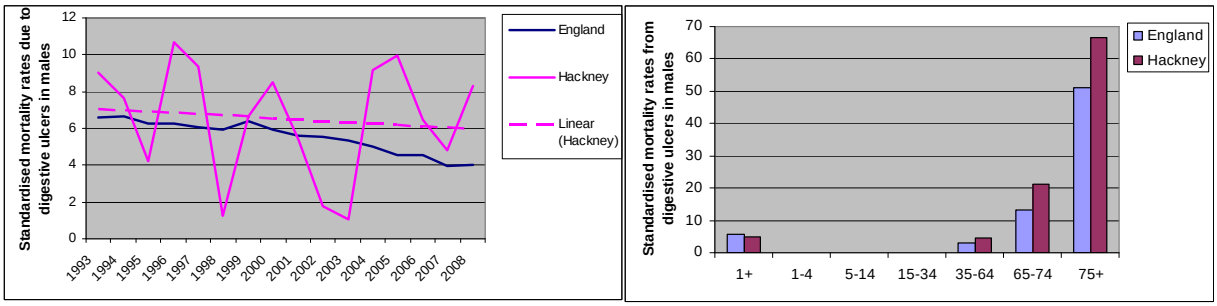
There are far fewer deaths from digestive disease than from cancer, CHD per year, however, there are relatively more in Hackney than nationally. Mortality from digestive diseases includes deaths from chronic liver disease and gastric, peptic and duodenal and peptic ulcers. Mortality rates from chronic liver disease in males are higher in Hackney than in England and are increasing. Around 15 males in Hackney die each year from liver disease. Mortality rates are highest in the 35-64 and 65-74 age groups, where they are higher than rates in England in those groups (Figure 16). Mortality from chronic liver disease is much lower in females than males and although is higher than England, is increasing at a slower rate than England, so the gap is narrowing. Excessive alcohol use, chronic hepatitis infection and obesity all increase the risk of developing chronic liver disease.

Fig 16. Standardised mortality rates from chronic liver disease in males (trend data: 1993-2008 and 2008 rates in different age groups



Gastric, duodenal and peptic ulcers cause around 5-10 deaths per year in males in Hackney. Mortality from digestive ulcers (gastric, duodenal and peptic) in males in Hackney is slightly higher than in England and it is decreasing at a slower rate so the gap is widening (Figure 17). Mortality from digestive ulcers in females has been lower but has been increasing so is currently also higher than England rates.

Fig 17. Standardised mortality rates from digestive ulcers in males (trend data: 1993-2008 and 2008 mortality rates in different age groups)



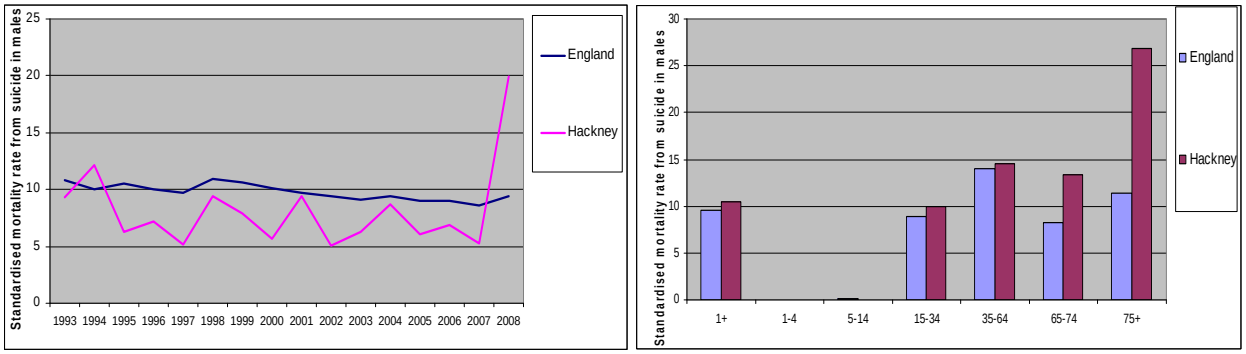
There are not a great number of deaths from digestive ulcers, but the gap between Hackney and England is widening, so therefore this will become a contributor to inequalities. However, deaths from chronic liver disease contribute to mortality at younger ages (35-74), therefore chronic liver disease is likely to contribute to the life expectancy gap in Hackney.

External causes

Death due to external causes includes accidents (including traffic accidents), suicide, poisoning, drug overdose and deaths due to assault or murder. There are around 45 male deaths per year from external causes in Hackney.

There are around 11 deaths from suicide in Hackney per year. Mortality from suicide in males in Hackney is generally lower than nationally, but there was a sharp increase in the number of deaths in 2008, which has increased the rate for the most current data. Analysis of the mortality rates across different age groups suggests that the rate is higher in all age groups over 15 in Hackney than nationally (Figure 18). However, due to the general trend for mortality rates from suicide being lower than nationally, this would suggest that suicide may not be a consistent contributor to the life expectancy gap.

Fig 18. Standardised mortality rates from suicide in males (trend data: 1993-2008 and rates in different age groups



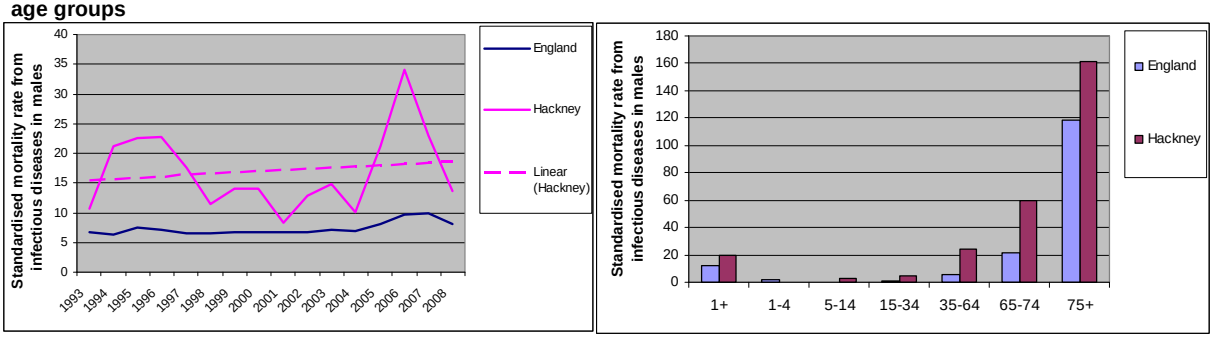
Mortality from all accidents is lower in Hackney than nationally (for both females and males), suggesting this is not a major contributor to the life expectancy gap in males. There are around 7 deaths per year from accidents such as drowning, falling etc, around 6 per year from road accidents in Hackney, 6 from exposure to fire, electric shock or other factor and 5 deaths due to poisoning through drugs (either accidental or intent undetermined).

The crime rate is high is Hackney, with an average of 7,900 offences of violence against a person per year and an average of 159 incidents of wounding (or other acts endangering life) recorded per year. However, the number of deaths from assault is very low (under 5 per year), but is likely to affect those in younger age groups.

Infectious diseases

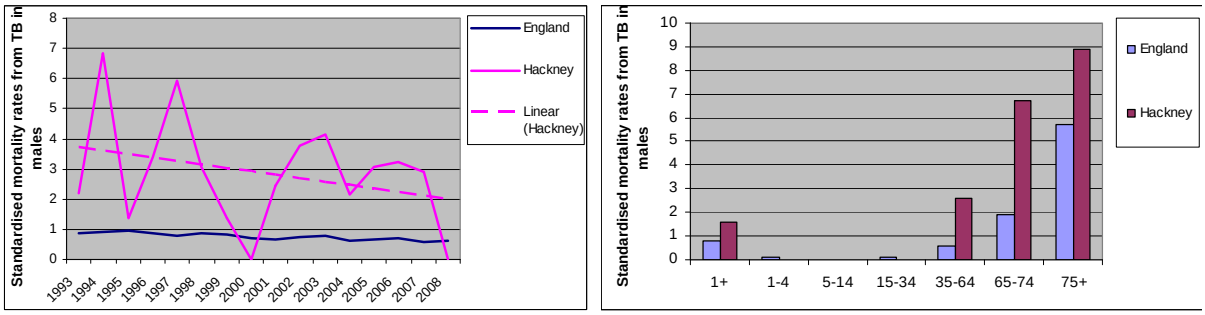
There are around 21 deaths in males per year in Hackney from infectious and parasitic diseases. Mortality from infectious diseases is significantly higher in City and Hackney than nationally, and this persists over time (Figure 19). The mortality rates are significantly higher in all age groups. There was a large spike in mortality in 2007 though, above the usual rate, which may suggest that the contribution of infectious diseases to the gap in life expectancy is usually less than the LHO tool predicts.

Fig 19. Standardised mortality rates from infectious diseases in males (trend data: 1993-2008 and rates in different age groups



Incidence of tuberculosis (TB) is high locally, with over 130 cases diagnosed each year equating to a rate of 59 per 100,000 compared to a 13 per 100,000 in England. Linked with this, mortality from TB in males is generally much higher than England rates (the rates vary from year to year due to small numbers involved). Mortality rates are higher in Hackney and the City compared to England in all age groups over 35, with the most dramatic difference in 65-74 group. Despite the large inequality and the high death rates at younger age groups (35-64), there are only a small number of deaths from TB per year (less than 5), therefore mortality from TB is likely to contribute a small amount to the life expectancy gap.

Fig 20. Standardised mortality rates from Tuberculosis in males (trend data: 1993-2008 and rates in different age groups

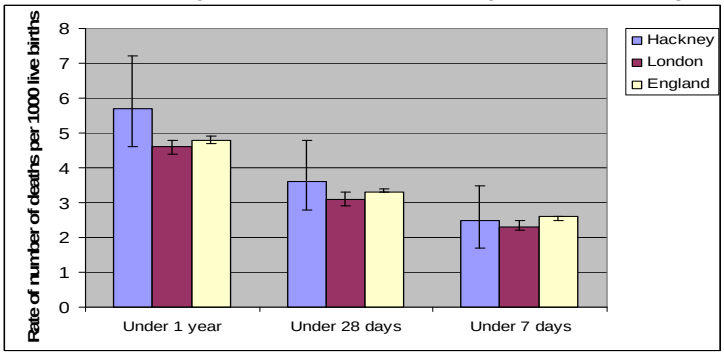


Other infectious diseases which cause mortality in City and Hackney are deaths linked to HIV (around 5 deaths per year), septicaemia (around 5 deaths per year), hepatitis (less than 5 deaths per year) and bacterial intestinal infections (less than 5 deaths per year).

Infant Mortality

Infant mortality in Hackney is slightly but not significantly higher in Hackney than in London and England (Figure 21). Therefore, this is unlikely to contribute significantly to the life expectancy gap in Hackney.

Figure 21. Crude infant mortality rates for males in Hackney, London and England (2008)



Summary

- Life expectancy in men varies across local areas in England by around 7 years.
- Lower life expectancy is strongly linked to higher levels of deprivation
- The main causes of premature death of males in Hackney are: cancer, coronary heart disease, stroke, respiratory diseases, chronic liver disease, accidents, infectious diseases and suicide
- The London Health Observatory life expectancy inequalities tool calculates that the major contributors to the gap in life expectancy between Hackney and England to be (% contribution to the gap in brackets): circulatory diseases (32%), cancers (13%), respiratory diseases (9%), digestive diseases (9%), external causes (14%) and infectious diseases (12%)
- Mortality from coronary heart disease is much greater in Hackney than England, particularly in the 65-74 age group. Mortality from stroke is also higher in this age group.
- Mortality from lung cancer is much higher than nationally, especially in the 35-64 and over 75 age groups
- Mortality from stomach cancer is far in excess of national rates, in all age groups
- Mortality due to chronic liver disease and digestive ulcers is higher in Hackney than England. Chronic liver disease has higher mortality rates at age groups 35-74 in Hackney than England.
- There is higher mortality from COPD locally than in England, with higher mortality at younger ages than nationally.
- Mortality from infectious diseases is higher in Hackney across all age groups than England. The main contributors to deaths from infectious disease are: HIV, hepatitis and septicaemia
- Mortality from external causes is higher than nationally, the main contributors to which are: accidents, road accidents, suicide, drug poisoning and assault.

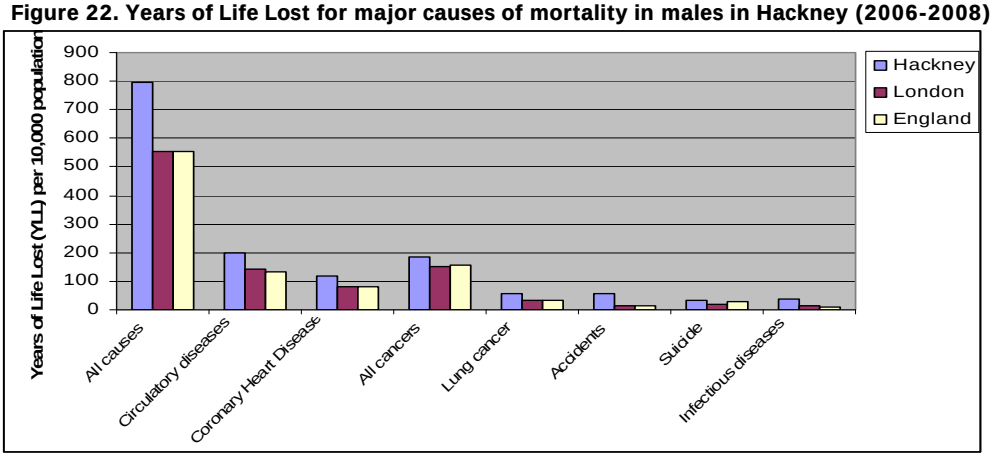
3. What does this mean for men in City and Hackney?

Years of Life Lost

Years of life lost can be calculated for specific causes of death, using mortality rates at different ages. Years of life lost (YLL) take into account the age at which deaths occur, giving greater weight to deaths at a younger age and lower weight to deaths at older age. This can be used, in contrast to mortality rates alone, to calculate which causes of death have the greatest effect on life expectancy.

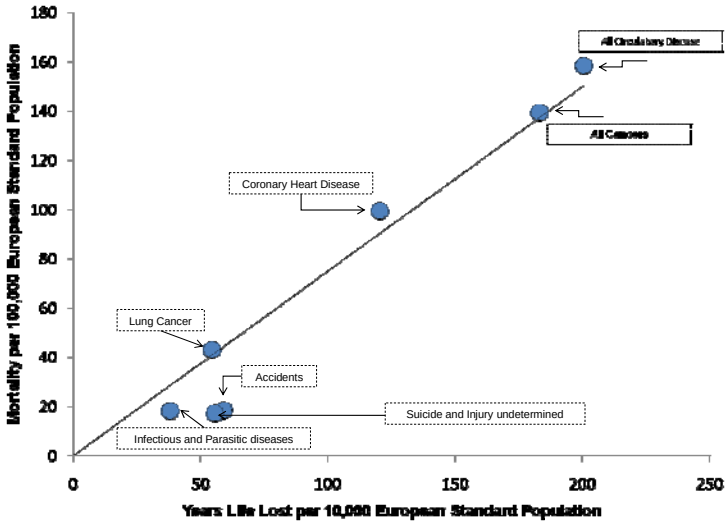
The largest YLL are caused by circulatory diseases and all cancers (at around 200 YLL per 10,000 population; Figure 22). CHD contributes the majority of the YLL from circulatory diseases and lung cancer is the highest YLL of any cancer in males. YLL for circulatory diseases, all cancers, infectious diseases, accidents and suicides are higher in Hackney than in London and England. Surprisingly, accidents and suicides cause the same amount of YLL as lung cancer (~55-60 YLL per 10,000 population).

Figure 22. Years of Life Lost for major causes of mortality in males in Hackney (2006-2008)



Comparing mortality rates and YLL for each cause of death can identify any causes of death which have a disproportionate effect on life expectancy (Figure 23). For most causes of death the YLL is proportional to the mortality rate. The causes of death with the highest YLL are circulatory diseases and cancer, those with the highest mortality rates (200 and 183 YLL per 10,000 population, respectively). However, accidents, suicides and infectious diseases have a higher number of YLL compared to what would be expected from their mortality rate (as they disproportionately affect younger people).

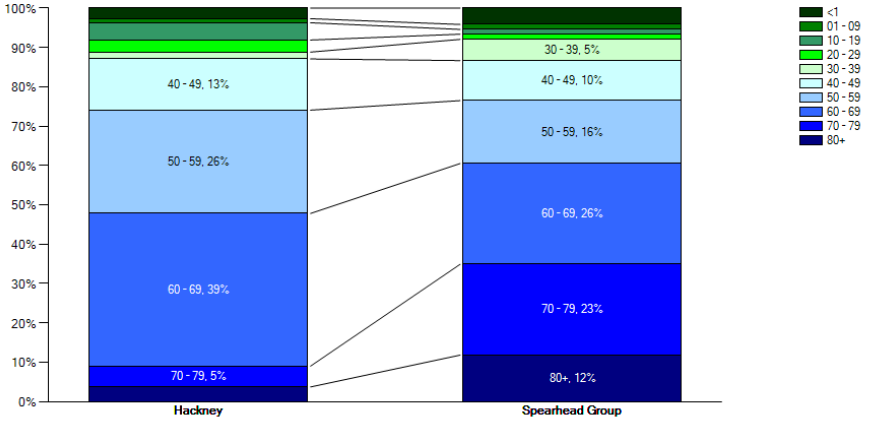
Figure 23. Years of life lost compared to mortality rate for causes of death in males in Hackney.



Mortality rates in different age groups

Analysis of individual causes of death suggests that there are higher mortality rates for several causes in the age group 65-74 (Figure 24). The London Health Observatory (LHO) tool confirms that nearly 40% of the gap in life expectancy is in men aged 60-69. 26% is in ages 50-59. Additionally, compared to other Spearhead areas deaths at younger ages (10-29) contribute more of the life expectancy gap in Hackney.

Figure 24. Breakdown of the life expectancy gap between Hackney and England, by age group (%), compared to the Spearhead group (2006-2008)



The Effect of Deprivation on Life Expectancy

The Marmot review identified an effect of deprivation on life expectancy across England, with areas of lower social class and higher deprivation having lower life expectancy[50].

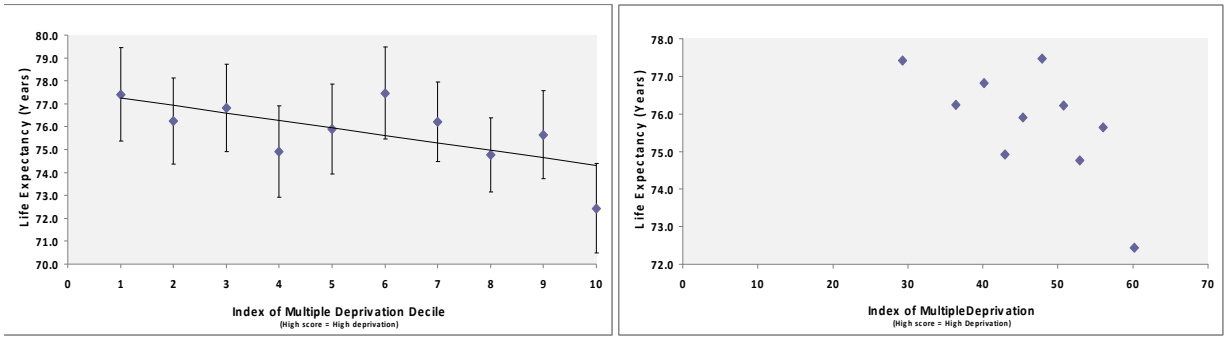
Deprivation can be measured using the Index of Multiple Deprivation. The Index of Multiple Deprivation is made up of seven domains and was last updated in 2007. The measure is for output area level geography (LSOA). The domains relate to income deprivation, employment deprivation, health deprivation and disability, education skills and training deprivation, barriers to housing and services, living environment deprivation, and crime. Each of the seven domains contains a number of component indicators, where possible indicator data is for 2005. A number of criteria are used to select the indicators, these are:

- should be 'domain specific'
- appropriate for the purpose (as direct as possible measures of that form of deprivation)
- measuring major features of that deprivation (not conditions just experienced by a very small number of people or areas)
- up-to-date
- capable of being updated on a regular basis
- statistically robust
- available for the whole of England at a small area level in a consistent form.

We have analysed life expectancy across the Index of Multiple Deprivation (IMD) and the 7 individual components of this score (Income, Employment, Education, Housing, Crime, Living Environment and Health Deprivation). We have not analysed it with Health Deprivation as life expectancy is one of the factors used to assess this as therefore these will be interdependent.

Life expectancy in Hackney is inversely proportional to deprivation (higher levels of deprivation are associated with lower life expectancy). Male life expectancy in the most deprived decile in Hackney is 72.4 and 77.4 in the least deprived decile. This equates to a gap between the most and the least deprived deciles of 5 years gap in life expectancy between the least and the most deprived in Hackney (Figure 25)[51]. Additionally, in Figure 25, the point which is furthest from the trendline is the highest deprivation areas in Hackney (with an IMD score of 60 [maximum score is 70]), who have a lower life expectancy than would be expected from the general trend, with a life expectancy of 72.4 (compared to the next highest deprivation, with a score of 56, who have a life expectancy of 75.6 years – over 3 years longer).

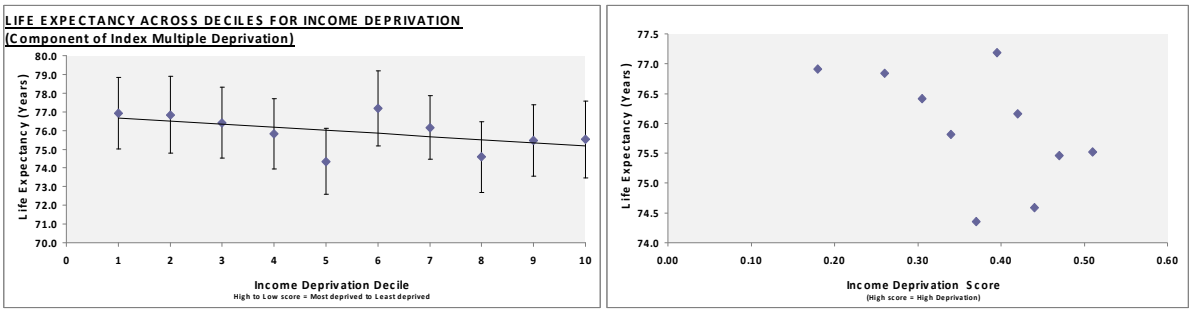
Fig 25. Life expectancy in males across the IMD score in Hackney. (Graph on left – life expectancy across IMD deciles [trendline fitted by Microsoft Excel]; graph on right – distribution of IMD scores for deciles in Hackney)



Analysis of life expectancy across the different IMD components shows that there is no association demonstrated between changes in Housing/Living Environment/Employment/Crime and life expectancy. Education seemed to show a reverse relationship to the overall IMD with higher levels of education deprivation having higher life expectancy. This is surprising and is counter to much evidence on the effect of these factors on health. Therefore this warrants further investigation and will be repeated (using the new IMD measures, released in 2011) for the 2011 JSNA.

However, life expectancy decreases with increasing scores for income deprivation (Figure 26). This suggests that income deprivation is associated with the differences in life expectancy between the most and the least deprived in Hackney.

Fig 26. Life expectancy in males across the IMD income domain in Hackney. (Graph on left – life expectancy across IMD income domain deciles [trendline fitted by Microsoft Excel]; graph on right – distribution of IMD income scores for deciles in Hackney)



The income deprivation domain comprises 6 indicators to give a level of income deprivation in that area. Indicators used are: Adults and children in Income Support Households, Adults and children in Income-Based Job Seekers Allowance Households, Adults and children in Pension Credit Households, Adults and children in those Working Tax Credit households where there are children in receipt of Child Tax Credit whose equivalised income (excluding housing benefits) is below 60 per cent of the median before housing costs, Adults and children in Child Tax Credit Households (who are not eligible for IS, Income-Based JSA, Pension Credit or Working Tax Credit) whose equivalised income (excluding housing benefits) is below 60 per cent of the median before housing costs, National Asylum Support Service supported asylum seekers in England in receipt of subsistence support, accommodation support, or both. The areas with the highest income deprivation in Hackney (a score of 0.51 out of 0.6) have a life expectancy of 75.5 years (Figure 26), whereas the areas with the lowest income deprivation score (0.18 or of 0.6) have a life expectancy of 77 years, a gap of 1.5 years. However there are 2 outliers with income deprivation scores of 0.37 and 0.4 with life expectancies of 74.5 and 77 respectively.

Summary

- Circulatory diseases and cancer contribute the highest number of YLL of any causes to men in Hackney. CHD contributes the majority of the YLL from circulatory diseases and lung cancer is the highest YLL of any cancer in males
- YLL for circulatory diseases, all cancers, infectious diseases, accidents and suicides are higher in Hackney than in London and England
- Accidents, suicides and infectious diseases have a higher number of YLL compared to what would be expected from their mortality rate (as they disproportionately affect younger people).
- The LHO tool confirms that nearly 40% of the gap in life expectancy is in men aged 60-69. 26% is in ages 50-59. Additionally, compared to other Spearhead areas deaths at younger ages (10-29) contribute more of the life expectancy gap in Hackney.
- Life expectancy in Hackney is inversely proportional to deprivation. The gap between the least and the most deprived in Hackney is 5 years.
- Analysis of the components of the IMD shows that life expectancy decreases with increasing scores only for income deprivation. This suggests that income deprivation is associated with the differences in life expectancy between the most and the least deprived in Hackney.
- Recommendation: this analysis will be repeated as part of the 2011 JSNA using the new IMD scores released in 2011

4. Why does a life expectancy gap exist for men and not for women?

International and national life expectancy differences

Throughout the world, across all levels of development in countries, women have a longer life expectancy than men[52]. Differences in life expectancy for males and females are also consistent in all PCTs in England. Using 2006-22008 data, the highest life expectancy for a local authority in the UK is in Kensington and Chelsea at 88.9 years for females and 84.3 years for males. The lowest life expectancy in the UK is in Glasgow City, with 77.2 years for females and 70.7 for males[53]. This suggests that across geographical, demographic and socio-economic variations, an inequality between men and women in life expectancy exist. The life expectancy gap between men and women is largest at younger ages and gets smaller with increasing age[54].

Men have higher death rates for a number of causes, and their premature death rate is significantly higher than women. This is likely to be a combination of factors including biological (genetic, hormonal and physiological), behavioural (lifestyle choices such as smoking, alcohol, risk-taking) and psychological (illness and health management, support systems, stress management). Gender specific hormones (sex hormones) affect lipids and vasculature in the body, affecting functioning of the cardiovascular system[55]. Mortality rates from coronary heart disease are significantly higher in males than females, which could be affected by the protective effect of oestrogen on the cardiovascular system in females, higher high density lipids in females, higher rates of abdominal obesity in males[56]. There are gender differences in smoking, alcohol and drug use, and diet and men are more likely to engage in violence and dangerous recreational activities and have more hazardous jobs. Men are less likely to report a health problem and seek help or visit the GP, and often have less well-developed support networks[57],[58],[59]. This contributes to late diagnoses of health problems, and lack of knowledge of services to improve problems, such as depression or stress, which leads to men coping less well with these problems and higher rates of substance misuse or suicide[60],[61]. The sex hormones also modulate immune responses and women have greater immune responses to infectious agents[62], and men are more susceptible than women to infections[63], possibly contributing to differences in mortality from infectious disease.

Studies have shown that mortality rates increase with deprivation for both sexes but the effect is stronger for males, particularly at ages under 65[64]. Gender differences in life expectancy are greatest in deprived areas[65]. Analysis of health expectancies using data from the 2001 Census showed that the difference in life expectancy for males from the most deprived wards and the least deprived wards was 7.6 years, greater than the 4.8 year difference for females[66]. There are higher rates of accidents in males in areas of high deprivation, but no corresponding link between accidents and deprivation in females[67].

Local mortality differences between males and females

The gap is life expectancy between males and females in Hackney is 6.3 years. This is a large gap in comparison with other local authorities in the UK[68], indicative of the greater effect of deprivation on male life expectancy. Analysing cause-specific mortality rates in Hackney suggests there are distinct differences in mortality rates from different causes, which contribute to low life expectancy in men and not women[69]. There are 25% more deaths from circulatory diseases in males than females (673 deaths in 2006-2008 compared to 551 in females). The majority of deaths from circulatory diseases are due to coronary heart disease. Mortality from coronary heart disease is much lower in females than males (twice as high in males compared to females), with males having significantly higher mortality in Hackney than nationally, whereas females are at the same as national levels (although increasing over time and mortality rates are currently slightly above national rates). Mortality from stroke is also higher in males than females, but both are similar to national levels. Interestingly, national analysis has shown that there is a stronger link between heart disease and deprivation in females rather than males[70], however females in Hackney have a similar mortality rates from heart disease to nationally, but males have a far higher rate locally than nationally.

Deaths from external causes in males are much higher than females (national and local, in Hackney deaths due to external causes are 150% higher in males, 153 deaths across 2006-2008 compared to 53). Deaths from infectious diseases are 40% higher in males than females (64 deaths compared to 45), with much higher mortality from septicaemia, HIV related illnesses and hepatitis in males. Cancer is still a significant cause of death for females in Hackney, however, mortality rates and how they compare the England are different for different cancer types. Additionally, mortality from cancer is higher in males than in females (200 deaths per 100,000 population compared to 150 in females). Mortality from cancer in both males and females is decreasing at a similar rate over time as national levels. The largest causes of cancer mortality for females are breast, lung and colorectal cancer. Mortality from lung cancer is much lower in females than in males in Hackney (32 deaths per 100,000 population in females compared to 58 per 100,000 population in males). Mortality from breast cancer is lower in Hackney than nationally (breast cancer is high in more affluent populations, this along with skin cancer are the only cancers inversely linked to deprivation). This suggests that there are not a disproportionate number of deaths from cancers in females in Hackney compared to England.

Summary

- There are differences in life expectancy for males and females across the world which is consistent with all PCTs in England. The gap between life expectancy in men and women in Hackney has got wider.
- The life expectancy gap between men and women is largest at younger ages and gets smaller with increasing age.
- Men have higher deaths rates for a number of causes and their premature death rate is significantly higher than women, both nationally and locally
- This is likely to be a due to combination of factors including biological (genetic, hormonal and physiological), behavioural (lifestyle choices such as smoking, alcohol, risk-taking) and psychological (illness and health management, support systems, stress management).
- Increasing mortality rates seen with increasing deprivation is present for both sexes but the effect is stronger for males, particularly at ages under 65
- Analysing cause-specific mortality rates in Hackney suggests there are distinct differences in mortality rates from different causes, which contribute to low life expectancy in men and not women
- Males in Hackney have higher mortality from CHD, external causes (including accidents and suicides), infectious diseases, cancer than females in Hackney.

Increasing Life Expectancy

1. What evidence is there for interventions which can reduce premature deaths?

The Department of Health (DoH) publication in 2003 'Tackling health inequalities: a programme for action' recommended a number of interventions to reduce health inequalities in local areas including:

- effective smoking prevention and cessation services for low-income groups and pregnant women to reduce cancer, CVD and respiratory disease
- raise levels of physical activity, to reduce obesity and therefore CVD and heart disease
- improve prescribing to people at high risk of CVD (hypertensives, statins) and with diagnosed CVD
- improve the nutrition of families and other groups by improving access to and consumption of fruit and vegetables
- reduce illness and death caused by accidental injury (including through fires)
- improve access to and use of primary care services
- expand early intervention services for mental health issues
- improve early detection of health issues within primary care
- create better and safer local environments
- improve standards of housing to tackle cold and damp, to reduce excess winter deaths and accidents at home
- improve basic skills and employment prospects[71]

Through these interventions, the DoH has calculated that the gap in male life expectancy between deprived areas and the general population can be reduced

Wider determinants of health

Area-based deprivation is caused by a combination of factors including low levels of economic activity, poor housing, a poor local environment and unstable communities and ineffective targeting of regeneration support, which interact to create a cycle of decline[72]. This cycle can be tackled and a cycle of success created will be created if the local economies are revitalised, housing and local environment is improved, communities stabilised and delivery of public services and targeted support to deprived areas in improved. This is a focus of the Health and Wellbeing Profile and the Health Inequalities Plan.

Employment and worklessness

Male unemployment rates are at 17% amongst Black African, Caribbean and Mixed Black and White and 35% amongst Black Caribbean. Men are amongst the most common claimant population with 15% more men than women on incapacity benefits. 25% of men aged 55-59 and 30% of men aged 60-64 are claiming incapacity benefit. Many people with health conditions are able to work but the problem lies with people with mental health and learning difficulties where unemployment rises to 70% amongst these groups.

There is an increasing evidence base demonstrating intensive support over extended periods of time is the most effective intervention locally to support men back into work. This should include outreach and engagement, employment advisors partnered with service staff, intensive support tailored to the clients needs and family support. It is important to consider the journey back to work for example volunteer options or offering enterprise training, with universal services and basic support aiding

people to access these. The focus for interventions should be around men with mental illness and (black) men who have been unemployed for extended periods of time. Packages of support should be multifaceted and ensure a flexible approach to support and work.

Incapacity benefit and income support reassessments will commence in October 2010 in pilot areas with full roll out by April 2011. These will establish the health related support required to support pathways back to work. The assessments are compulsory and will present an opportunity for health services to reengage with this client group.

- Intensive support programmes for long term unemployed (particularly for those with mental illness)
- Interventions around providing information on appropriate health service, linked in with benefit reassessment intervention programmes

Interventions to reduce deaths from cardiovascular disease

Primary prevention of CVD involves prevention or management of risk factors that could cause CVD (before the onset of disease). Physical inactivity, smoking, and abdominal obesity are key modifiable risk factors for CVD. It has been suggested that life expectancy can be extended by adopting low-risk lifestyle factors, and that of the life expectancy increase, 50% of this was due to not smoking and 25% due to healthy weight (the remainder due to management of blood pressure and blood glucose levels). Studies have shown that the relative risks of incidence of coronary heart disease (CHD) for not smoking, moderate or high fitness, and normal waist girth were 0.74, 0.69 and 0.70 respectively[73]. Men who were physically fit, not smoking, and with a normal waist girth had a 59% lower risk of CHD events, a 77% lower risk of CVD mortality and a 69% lower risk of all-cause mortality compared with men with zero low-risk factors. These risk factors may also interact to produce worse effects on health, than each factor alone[74]. Diabetes as a co-morbidity with CVD increases mortality more than other co-morbidities[75]

Increased physical activity in middle age is eventually followed by a reduction in mortality to the same level as seen among men with constantly high physical activity and the reduction in mortality is comparable with that associated with smoking cessation[76]. NICE have found evidence that the following interventions can increase the amount of physical activity in inactive persons: brief interventions in primary care (identifying inactive persons, recommending five 30 minute sessions of exercise per week, informing about local exercise opportunities), exercise referral schemes (referral into a tailored and monitored programme of exercise) and promotion of walking and cycling schemes as ways of increasing physical activity[77]. The local environment can also affect how able people are to engage in physical activity. New developments and transport systems can be planned so that walking, cycling and active play for children is a priority. Open spaces and parks can be incorporated into local areas and maintained as safe places[78]. Workplace interventions such as walking/pedometer schemes, workplace screening with advice/written information and counselling, posters to increase stair walking can all increase physical activity at work[79]

Both adopting a low calorie-diet and diet in combination with anti-obesity drugs (such as Orlistat) have been shown to be effective in reducing obesity and result in a gain in life years and quality adjusted life years[80]. A sustained 10% reduction in weight in people who are obese, leads to a reduction of CHD and stroke and increases life expectancy[81]. Higher consumption of fruit and vegetables have been shown to increase life expectancy, possibly by reducing cancer incidence[82],[83]. Treatment of overweight patients with Metformin results in a reduction in complications of diabetes, and an increase in life expectancy[84].

Secondary prevention of CVD involves treating people with and at very high risk of developing CVD, to reduce disease progression. There is much evidence to show that if GPs can identify those people whose lifestyle places them at increased risk of cardiovascular disease and those with the disease, and prescribe appropriately then mortality rates from CVD can be reduced.

Since April 2009, all PCTs have begun to implement a programme of vascular risk assessment and management for everyone between the ages of 40-74 who has not already been diagnosed with heart disease, stroke, kidney disease or diabetes. This will identify, on the basis of family history, smoking, BMI, blood pressure, cholesterol, which individuals are at high risk of cardiovascular disease and can offer advice on lifestyle to these people and follow up with regular future checks as appropriate. These can be delivered through various routes, including GPs, pharmacists, community settings etc. Other local areas have delivered this through pharmacists, using incentives, as part of men's health campaigns, community locations, through peer educators and workplace programmes[85].

Analysis of what has contributed to the reduction in CHD during the last 30 years has shown that increased medical treatments are responsible for around 20% of the reduction[82]. Treatment of hypertension can increase life expectancy by up to 3 years, with a greater effect in men than women[86]. The life-years gained from prescribing angiotensin-converting enzyme inhibitors, beta-blockers, and spironolactone to treat hypertension were the highest[87]. After the introduction of the Quality and Outcomes framework for GPs, the number of people either with or at high risk of cardiovascular disease being prescribed aspirin or statins increased dramatically and GP practices in Spearhead areas achieved higher than those in non-Spearhead areas[1]. Within the Department of Health's work as part of the 2010 target for all PCTs to decrease the gap between local and national life expectancy by 10%, they identified strong evidence for interventions to improve life expectancy including the prescribing of drugs to reduce cholesterol and blood pressure by 40%.

Interventions to reduce deaths from cancer

There has been a large amount of research into the causes of cancer, and many causes have been elucidated. Lifestyle factors are responsible for around 90% of cancers (the remaining 10% thought to be due to hereditary/genetic factors), including smoking, alcohol, physical inactivity, sun exposure, being overweight. Smoking causes around 80% of lung cancers and contributes to some others.

To improve outcomes in people who develop cancer, early detection plays a key role. The earlier a cancer can be diagnosed, the greater the prospect of cure and a better prognosis. 53% of people survive for over 5 years if diagnosed with lung at stage 1, compared to 4% who were diagnosed at stage 4[88]. Therefore, improving early diagnosis of cancer will decrease mortality from cancer and increase survival rates. It is generally accepted that the poorer survival rates in the UK compared to the rest of Europe are mainly due to diagnosis at later stages, likely to be due to a combination of factors, including poor public awareness of symptoms, delayed presentation at primary care, delays in detection in primary care and delays in secondary care. Excess mortality in England seems to be particularly pronounced in the first month and first year after diagnosis[89],[90]. Therefore, interventions to reduce delays in diagnosis improve survival and reduce mortality from cancer. Initiatives, such as written information, information at GP practices, media campaigns and community based sessions on cancer symptoms can lead to which increase the knowledge of symptoms in the general public[91],[92],[93], which can lead to a reduction in stage at presentation[94],[95],[96],[97].

There is some evidence to show that late diagnosis of cancer, leading to late presentation is a key driver behind low survival from some cancers in Hackney. To reduce late diagnosis of cancer, delays along the detection pathway have to be reduced. Recognition of symptoms as possible signs of cancer is low in Hackney, lower than nationally (Cancer Awareness Measure, December 2009). Only 63% of people recognise a change in bowel movements as a symptom of cancer and only 43% recognise that a persistent cough can be a symptom. Evidence has shown that increasing awareness of cancer symptoms (through local campaigns) can reduce the stage of presentation of cancers. Working with GPs to increase referrals of people who present with possible cancer symptoms (in accordance with NICE guidelines), around training and providing resources to aid referral decisions, reduces delays in referral from primary care. Reduction in mortality from cancer also depends on equitable access to clinically appropriate diagnostics and treatments. Therefore ensuring that care pathways in secondary care are in accordance with national clinically effective pathways can improve survival from cancer.

- Campaigns to increase public awareness of cancer symptoms

- Work with GPs to increase timely referral of people with potential cancer symptoms
- Work with secondary care to ensure clinically effective pathways are adhered to for all patients

Interventions to reduce prevalence of smoking

With the prevalence of smoking being on average 27% in Spearhead areas compared to 21% nationally, and people from more deprived areas being more committed smokers, smoking cessation and tobacco control interventions are of great importance in deprived areas. Reduction in smoking prevalence over the last 20 years has been a large contributor to the decrease in incidence of CVD and some cancers[98].

Pharmacological and counselling treatment each independently boost cessation success and studies suggest that the combination of both is the optimal way of supporting people to stop smoking[99]. Quitting with support from NHS Stop Smoking Services is up to four times more likely to result in prolonged abstinence from smoking than quitting without any assistance[100]. Smoking cessation rates using nicotine replacement (e.g. nicotine gum or nicotine transdermal patches) are about twice as high as those associated with behavioural methods. In addition, increased duration of medical intervention and counselling by healthcare professionals also appears to improve quit rates[101].

There is evidence that there is a strong dose-response relation between counselling intensity and the likelihood of long-term abstinence from tobacco. There are various methods of delivering smoking cessation services, and evidence shows there is great variety in how successful these methods are. One-to-one support and drop in clinics have an overall success rate of 49%. Open group sessions achieve a success rate of 55%, while telephone support achieves 63%. The intervention that has been shown to be most effective is structured, multi-session group course with pre-arranged start and finish dates and a pre-booked client group, in which 64% of people manage to successfully quit[102].

Promotion of stop smoking services and provision of support and assistance in quitting has been shown to be effective in increasing numbers of people in stop smoking services and those who successfully quit, including media campaigns[103],[104], workplace programmes[105], hospital-based programmes for inpatients[106], in health clinics (such as family planning, pre and antenatal, dentist and paediatric)[107] and pharmacies. Workplace interventions such as workplace smoking bans, smoking cessation support, tailored advice, tailored materials such as self-help manuals, and possibility financial incentives can increase the number of smoking quitters[108]. Peer educators, including youth ambassadors for young people, offering advice and support, can lead to reduction in smoking prevalence[109]. There is some evidence to suggest that web-based and text-message based programmes can also be effective[110]

Coordinated tobacco control programmes (smoke-free policies, banning advertising of tobacco products, reducing access to tobacco products) have been shown to reduce smoking prevalence[111]. This in turn reduces ill-health: the ban on smoking in public places has led to a decrease in hospital admissions for acute myocardial infarction, by 10-40%, in several states in the US[112].

There is some evidence that targeting more than one lifestyle change in smokers can improve cessation. The success in changing one behaviour can motivate to change further behaviours. Studies of interventions targeting more than one lifestyle change have shown promising results. Tackling weight loss and smoking cessation simultaneous supported longer term abstinence and smokers who exercise during their cessation attempt reported reduced cravings compared to those who were sedentary (Nguyen et al 1996). Motivating smokers to quit can be problematic and therefore the use of weight loss and exercise programmes could potentially be used as a vehicle or pathway into smoking cessation programmes.

Interventions to reduce harmful drinking

NICE have release guidance on evidence-based interventions to reduce harmful drinking[113]. There is evidence that national initiatives such as revising licensing laws, imposing a minimum price per unit and reducing advertising can reduce harmful; drinking. International evidence suggests that making it less easy to buy alcohol, by reducing the number of outlets selling it in a given area and the days and hours when it can be sold, is an effective way of reducing alcohol-related harm. Evidence from a systematic review of 132 studies finds a clear and consistent relationship between advertising expenditure and alcohol consumption, across the whole population. There is limited evidence relating to a complete ban on advertising. However, there is evidence that bans on tobacco have had an impact on tobacco consumption. There is strong evidence that alcohol advertising affects children and young people. The data show that exposure to alcohol advertising is associated with the onset of drinking and increased consumption among young people who already drink[114].

Healthcare professionals are well placed to identify and help people with alcohol-related problems. There is strong evidence to show that many people benefit from brief advice provided by healthcare professionals who are not alcohol specialists. PCTs can ensure all health professionals who come into contact with people who may have a drinking problem (particularly GPs and A&E nurses) are trained to carry out screening, give brief advice/interventions and refer into treatment services if necessary. PCTs can also commission high quality alcohol treatment services, with enough capacity for all referrals, with services appropriate to high-need groups such as street drinkers, the homeless and rough sleepers.

Interventions to reduce deaths from infectious diseases

Many infectious diseases can be prevented through vaccination programmes, including measles, TB, polio, influenza and rubella. Increasing uptake of immunisations in childhood and adulthood and reducing inequalities in uptake can reduce deaths from infectious diseases.

Early diagnosis and management of infectious diseases, such as HIV/AIDS, TB, Hepatitis, can reduce mortality from these diseases.
Prompt identification and management of outbreaks of infectious diseases, working in partnership with the Health Protection Agency can reduce spread of the disease and so mortality and morbidity.

Housing

There are around 70 'excess winter deaths' per year in Hackney (excess to that which would be expected in a non-winter month). These deaths are caused by respiratory and circulatory diseases, which are related to poor housing conditions - insufficient thermal insulation, ineffective heating systems - and fuel poverty. Hackney has a higher proportion of households living in local authority housing than national levels. 1 in 3 local authority dwellings does not meet the Decent Homes standards[115]. Improving housing energy efficiency measures, to enable affordable provision of heating has been shown to improve the health of inhabitants[116],[117]. Overcrowding also has a negative effect on people's health. Hackney is the third most overcrowded borough in England, and measures to reduce overcrowding would reduce the transmission of infectious diseases, improve respiratory health and reduce mental health problems. Fires and accidents in the home are linked with deprivation and Hackney has higher rates of both than nationally. Accident prevention schemes (home visits combined with advice and media campaigns for parents to make their homes safer; free/ discount home safety equipment and home hazard modifications) have been shown to be effective in reducing accidents/injuries in the home[118]

- Improve standards of local authority housing to meet Decent Homes standards
- Measures to reduce overcrowding
- Implement accident prevention schemes

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