LUTON CARDIOVASCULAR DISEASE NEEDS ASSESSMENT APRIL 2016

Produced by Luton Public Health Intelligence Team
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Executive summary
This Cardiovascular Disease Health Needs Assessment has been produced by Luton Public Health to inform and support health and social care professionals to make the right decisions around prevention, commissioning and providing quality services for the residents of Luton. The aim of the Health Needs Assessment is to provide information and intelligence about mortality, morbidity, treatment, costs and inequalities.

Information will be central to the drive for better outcomes. Better information underpins stronger commissioning and patient choice, helping to deliver quality of services and outcomes and to make efficient use of resources. The main findings of the needs assessment are contained in this section, while those wishing to delve further than headline figures can find more information within the report.

Cardiovascular disease (CVD) is a general term used to describe disorders that can affect the heart and/or the body's system of blood vessels (vascular). CVD occurs more frequently in people who smoke, who have high blood pressure, who have high blood cholesterol, who are overweight, who do not exercise and/or who have diabetes.

Plain English Summary
Cardiovascular diseases (CVD) are responsible for a large number of deaths in Luton and more admissions to hospital compared to England many of which could be prevented by a change in lifestyle. Risk factors for CVD include diabetes and high blood pressure but also obesity, smoking, unhealthy diet and smoking. Luton has more individuals with diabetes than national levels, the number of people eating the recommended amount of fruit and vegetables a day and exercising regularly is less than national levels and the number of people drinking at a harmful level is higher than nationally.

These lifestyle factors can be addressed by individuals simply by making small changes. By eating healthier, reducing alcohol intake, stopping smoking and exercising more which will reduce the risk of developing a CVD related illness.

The impact of CVD in Luton has is wide ranging and contributes more than maybe initially expected. It is the highest cause of death among individuals and the second highest cause of premature death (those dying under 75 years of age) in the borough (only cancer causes more premature deaths). CVD also contributes to a very high number of hospital admissions in Luton which in turn causes a high spend in critical care which is expensive.

CVD is also the most important driver in health inequalities within the borough for both males and females. CVD accounts for around half the gap in life expectancy in Luton compared to England in males and females. While CVD also accounts for around 40% of the gap in life expectancy between the best and worst parts of the borough for both males and females.
### Risk factors

- Luton (12.1%) has a **significantly lower** recorded prevalence of hypertension than England (13.8%).
- Recorded prevalence of hypertension within Luton GP practices ranges from 3% to 17% showing wide variation.
- However modelled estimates suggest that prevalence in Luton should be 26.7% this equates to 41,587 so there are potentially around 14,500 people with undiagnosed hypertension.
- Luton (7.6%) has diabetes prevalence **significantly higher** than the England average. The Luton prevalence equates to a total of 12,889 people diagnosed with diabetes.
- Recorded prevalence for diabetes within Luton GP practices for 2014/15 there is wide variation with prevalence ranging from 2.3% to 12.3%.
- However the latest modelled estimates suggest a prevalence of 10.2% which equates to over 17,000 people with diabetes.
- Recorded smoking prevalence in Luton in 2014/15 was 19.9%, which is **significantly higher** than England.
- Recorded prevalence of obesity in Luton adults aged 16 and over in 2014/15 is 9.8%; this is significantly higher than the England average.
- The proportion of people eating 5 a day (43.3%) in Luton is **significantly lower** than the national average (53.5%).
- Similarly, the proportion who meets the recommended level of physical activity in Luton (45.1%) is also **significantly lower** than national levels (57%).
- 6.7% of adults aged 16 and over in Luton drink at levels that are considered higher risk which puts them at risk of harm to their health; this is not different to the England proportion of 6.7%.

### Prevalence

- Luton has a recorded prevalence of cardiovascular disease (CVD) of 0.9% (n=1,089 persons aged between 30 and 74) in 2014/15 and this is **significantly lower** than the England average of 1.1%.
- Luton has a recorded prevalence of coronary heart disease (CHD) of 2.5% (n=5,686) in 2014/15 and this is **significantly lower** than the England average of 3.3%.
- Luton has a recorded prevalence of stroke/TIA of 1.2% (n=2,693) in 2014/15 and this is **significantly lower** than the England average of 1.7%.

### Hospital admissions

- Age standardised admission rates due to CHD in persons all ages are **significantly higher** than England.
- Overall CHD rates in Luton have been increasing although there was a decrease between 2012/13 and 2013/14. England rates have been decreasing steadily since 2003/04.
- Age standardised admission rates due to stroke in persons all ages are **significantly lower** than England.
- Overall since 2003/04 stroke rates in Luton have been decreasing especially between 2011/12 and 2013/14. Overall England rates have been increasing since 2003/04.
however this increase has not occurred every year.

Secondary prevention

- The percentage of patients with CHD who have had a blood pressure reading in the last 12 months below 150/90 mmHg in Luton GP practices in 2014/15 range from 73.9% to 100%. This compares to the National average of 92%, meaning most of the practices in Luton are performing worse than the England average.

- The percentage of patients with a history of myocardial infarction currently treated with an ACE-I (or ARB if ACE-I intolerant), aspirin or an alternative anti-platelet therapy, 2014/15. The proportions range from 60.9% to 100%. Four practices had percentages significantly lower than the Luton. The national average is 97.3%.

- The percentage of patients with coronary heart disease with a record in the preceding 12 months that aspirin, an alternative anti-platelet therapy, or an anticoagulant is being taken in Luton GP practices in 2014/15. The proportions range from 68.4% to 100%. Six practices had percentages significantly lower than the Luton average and 10 practices had percentages significantly higher than Luton. The national average is 95.9%.

- The percentage of patients with heart failure who are currently treated with an ACE-I or ARB, 2014/15. The proportions are almost all 100%. The national average is 99.2%.

- The percentage of patients with diabetes, on the register, in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less, 2014/15. The proportions range from 70.7% to 98.5%. Three practices had percentages significantly lower than the Luton average and seven practices had percentages significantly higher than Luton. The national average is 91.4%.

- The percentage of patients with diabetes, on the register, whose last measured total cholesterol (measured within the preceding 12 months) is 5mmol/l or less, 2014/15. The proportions range from 56.4% to 88.8%. Six practices had percentages significantly lower than the Luton and nine practices had percentages significantly higher than Luton. The national average is 80.5%.

- The percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 75mmol/mol or less in the preceding 12 months, 2014/15. The proportions range from 51% to 97%. Eight practices had percentages significantly lower than the Luton and nine practices had percentages significantly higher than Luton. The national average is 69.8%.

- Luton has a male directly age standardised rate significantly higher than the England average for angiography procedures.

- Trends in angiography procedures are increasing in both Luton and nationally.

- Luton has a directly age standardised rate of non-elective angioplasty procedures significantly higher than the England average.

Mortality

- CHD (51%) is the highest cause of death in Luton due to CVD followed by stroke (22%).

- Luton has a significantly higher directly age standardised mortality rate per 100,000 population due to CVD than England for males, females and persons.

- Trends in CVD mortality are decreasing in Luton and nationally for males, females
and persons although nationally the rates are falling quicker than in Luton.

- CHD (62%) is the highest cause of CVD premature death (ages under 75 years) in Luton followed by stroke (17%).
- Luton has a significantly higher directly age standardised mortality rate per 100,000 population than England due to CVD premature death (aged under 75 years) for males, females and persons.
- Trends in CVD premature mortality are decreasing in Luton and nationally for males, females and persons although nationally the rates are falling quicker than in Luton.

- Age standardised rates for mortality due to CHD in Luton males, female and persons all ages are significantly higher than England.
- Standardised mortality rates trends in Luton and England for CHD for males, females and persons are decreasing although nationally the rates are falling quicker than in Luton.
- Age standardised rates for premature mortality due to CHD in Luton males, female and persons all ages are significantly higher than England.
- Standardised mortality rates trends for premature deaths due to CHD in Luton and England for males, females and persons are decreasing although nationally the rates are falling quicker than in Luton.

- Age standardised mortality rates due to hypertension in females and persons all ages are significantly higher than England.
- Luton and England trends for mortality due to hypertension in males, females and persons are increasing although locally the rates are rising quicker than nationally.
- Premature mortality due to hypertension is no different in Luton compared to England.
- However trends in premature mortality due to hypertension are decreasing both in Luton and nationally.

- Age standardised rates due to stroke mortality all ages are not significantly different than England.
- However trends in mortality due to stroke are decreasing at a similar rate in both Luton and nationally.
- Age standardised rates due to stroke premature mortality (ages less than 75 years) are significantly higher than England for males and persons.
- Trends in premature mortality due to stroke are decreasing at a similar rate in both Luton and nationally.
- However for Luton males and persons mortality rates due to stroke have started to increase slightly from 2010/12.

Costs

- Luton CCG spent £229,931,852 on care in 2013/14 this equates to £109,392,149 per 100,000 population.
- Spend on circulatory problems (£7.3 million per 100,000 population) was the third highest spend category in Luton after mental health disorders and maternity health.
• This equates to over £15 million for the whole population of Luton and accounts for around 15% of the total spend.
• In Luton the highest spend relating to circulatory disease is in unscheduled care (non-elective admissions) with 29% of the circulatory disease spend compared to 30% in England.
• Circulatory primary prescribing accounts for 21% of the circulatory spend in Luton compared to 23% in England.
• A higher proportion of circulatory spend in Luton compared to England comes in critical care 7% compared to 3% and in scheduled care outpatients 16% compared to 10%.

Recommendations

Prevention and screening
• Public Health to develop borough plans to increase physical activity, improve diets, reduce alcohol and tobacco consumption
• Control and prevent diabetes which is an important CVD risk factor (see diabetes HNA)
• Primary and community services should provide brief advice at every opportunity and refer to lifestyle services where appropriate (NICE PH25)
• Identification and referral to intensive lifestyle support in high risk and vulnerable groups (NICE PH15) should be systematically rolled out across primary and community care

Early Detection and diagnosis /Treatment: improving experiences of care and support
• Reduce variation in primary care of
  – Recorded prevalence and control of cardiovascular disease to reduce unplanned hospital admissions, secondary care use and health inequalities (NICE PH15) as part of enhanced primary care model
  – Health checks uptake with a focus on quality including referral onto intensive lifestyle programmes
  – Case finding and control of blood pressure and cholesterol linked to the primary care investment programme.

Aftercare
• Embed within cardiovascular pathway post treatment (after cardiac rehabilitation) lifestyle advice and support for all patients as part of the Enhanced Recovery Programme.

Integrated commissioning
• Review current pathway/service offer, to reduce duplication and redistribute to need and develop discharge bundle for repeat admissions including community rehabilitation and early supported discharge. Consider a CQUIN for discharge bundles.
• Ensure all cardiovascular specifications are outcomes focused and linked to other relevant specifications.
• Embed NICE Quality Standard (QS100) into contracting and monitor performance to reduce additional risk of complications.

**Glossary of Terms**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full name</th>
<th>Definition or description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCG</td>
<td>Clinical Commissioning Group</td>
<td>The NHS organisation responsible for securing health services for the local population.</td>
</tr>
<tr>
<td>CI</td>
<td>Confidence Interval</td>
<td>Where possible, percentages and rates are reported with 95% CI. These give a degree of certainty around the proportions and rates and take into account random variation that can occur. A 95% confidence interval means that if we were to take an infinite number of random samples from the same whole population, 95% of the results would include the estimate that we are reporting. By comparing the 95% CIs around estimates or a target, we can say whether statistically, there are differences or not in the estimates we are observing.</td>
</tr>
<tr>
<td>CR</td>
<td>Crude rate</td>
<td>The number of events e.g. number of people with CHD, divided by the number at risk of the event e.g. the resident population, multiplied by a number to give the rate per x population. This does not account for variation in populations e.g. age structure. This rate is commonly used when age specific rates are not available.</td>
</tr>
<tr>
<td>DSR</td>
<td>Directly Standardised Rate</td>
<td>The age-specific rates of the subject population are applied to the age structure of the standard population. This gives the overall rate that would have occurred in the subject population if it had the standard age-profile. Directly standardised rates can be compared over time and compared to numerous different areas at the same time as they all use the same European standard population.</td>
</tr>
<tr>
<td>CVD</td>
<td>Cardio-vascular disease</td>
<td>CVD includes all the diseases of the heart including CHD, angina, stroke and heart attacks.</td>
</tr>
<tr>
<td>CHD</td>
<td>Coronary heart disease</td>
<td>Is a specific type of CVD and occurs when the arteries in the heart become narrow or blocked due to a build-up of fatty substances.</td>
</tr>
</tbody>
</table>
1.0 Introduction
Cardiovascular disease (CVD) is a general term used to describe disorders that can affect the heart and/or the body’s system of blood vessels (vascular). Many cardiovascular problems result in chronic conditions that develop or persist over a long period of time. However, it may also result in acute events such as heart attacks and strokes that occur suddenly when a vessel supplying blood to the heart or brain becomes blocked. CVD occurs more frequently in people who smoke, who have high blood pressure, who have high blood cholesterol, who are overweight, who do not exercise and/or who have diabetes.

Cardiovascular disease (CVD) affects the lives of millions of people and is one of the largest causes of death and disability in England. In the UK, over 1.6 million men and over one million women are affected by chronic heart disease. It is responsible for around one-third of deaths in the UK each year. Most deaths from heart disease are caused by heart attacks. In the UK, there are about 124,000 heart attacks each year. There are also around 152,000 strokes in the UK each year, resulting in over 43,000 deaths (NHS 2014).

The objectives of this cardiovascular disease Health Needs Assessment for Luton are to:

- Provide a profile of cardiovascular disease risk, prevalence, hospital admissions, mortality, interventions and outcomes in Luton, comparing available local data and analyses with national and similar local authority/CCG benchmarks.
- Highlight any issues that warrant further investigation.
- Makes recommendations which are likely to help improve outcomes of the issues surrounding CVD in the future.

2. Demographics

The health of the population of Luton tends to be slightly poorer than the England average. The poorer health outcomes are linked primarily to the levels of socioeconomic deprivation experienced by a significant segment of the population. This section will describe the numbers and projected growth of the population; demographics (e.g. age, gender, and ethnicity); population movement in and out of the borough; deprivation and poverty.

2.1.1 Population

The latest (2014) Office for National Statistics (ONS) Mid-Year Population Estimate for Luton was 211,000. In recent years, there has been convergence between the ONS figures and those of the Council due, in the main, to improved accuracy of ONS data as a result of increased enumeration in the 2011 Census and the subsequent rebasing of population figures.

Figure 2.1 shows the most densely populated areas of Luton are in the centre of the town. With an area of 4,336 hectares, the official (ONS) population figure translates into a population density of 48 people per hectare. This figure is greater than many London Boroughs.
2.1.2 Population projections

Luton’s population is projected to grow significantly between 2011 and 2031, with the latest forecasts projecting growth of 25% in the next 20 years (LBC 2015). Key drivers for this are high levels of natural growth (more births than deaths) and international in-migration. Luton also has high population churn and a study found that 70% of the population in Luton in 2010 was either not born or not living in Luton at the time of the 2001 Census (Mayhew and Waples 2011).

Table 2.1 shows a summary of population projections for Luton. Key changes over the next 20 years are:

- Population of Luton is projected to increase by 50,400, a rise of 25%.
- School age population (5-15 year olds) is projected to increase by 7,850, a rise of 26%.
- Those aged 65-89 is projected to increase by 10,750 people, a rise of 47%.
- Very elderly population (90+) is projected to increase by 1,450 people, a rise of 153%.

Source: Census 2011, Office for National Statistics and Ordnance Survey
Table 2.1: Luton population projections by age from 2011 to 2031

<table>
<thead>
<tr>
<th>YEAR</th>
<th>0-4</th>
<th>5 to 15</th>
<th>16-17</th>
<th>18-64</th>
<th>65-89</th>
<th>90+</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>16,700</td>
<td>30,150</td>
<td>5,400</td>
<td>127,400</td>
<td>23,050</td>
<td>950</td>
<td>203,650</td>
</tr>
<tr>
<td>2021</td>
<td>18,050</td>
<td>36,050</td>
<td>5,650</td>
<td>142,600</td>
<td>27,150</td>
<td>1,450</td>
<td>231,000</td>
</tr>
<tr>
<td>2031</td>
<td>18,650</td>
<td>38,000</td>
<td>6,600</td>
<td>154,550</td>
<td>33,800</td>
<td>2,400</td>
<td>254,050</td>
</tr>
</tbody>
</table>

2011-21 Change
- Source: Luton Borough Council using POPGROUP software and a ten year migration average.
Components may not sum to totals due to rounding.

2.1.3 Ethnicity and migration

Figure 2.1.3 shows the board ethnic groups in the Luton population, with approximately 45% of the population being of Black and Minority Ethnic Origin (BME) or non-white. The ethnic composition of Luton fits a model known as ‘super-diversity’ in which there is an increasing number of BME communities within the population each with its own needs and cultures. Luton has a long history of migration into the area both from elsewhere in the UK and overseas. There have been long-standing African-Caribbean, Bangladeshi, Indian, Irish and Pakistani communities in Luton as a result of international migration. More recently, the migration patterns have become more complex. In the mid-1990s, the opening of the University of Luton (now the University of Bedfordshire) caused a rapid growth in the student population of the town. This growth has been sustained with an increase in numbers of overseas students.

In the mid-2000s, the expansion of the European Union led to a significant increase in migration from eastern European countries, particularly Poland and Lithuania. 7% of Luton’s population is classed as ‘other white’ which is the group for non-British or Irish Europeans (but this group also includes people from other parts of the world including Americas and Australasia) (England has 4.6% of the population in this category). There has also been in-migration from African countries such as the Congo, Ghana, Nigeria, Somalia and Zimbabwe. There is also a Turkish population in Luton. More recently, National Insurance Registration data has demonstrated further increases in international migration with Romanians moving to the town after the change in law allowing them the right to work in the UK at the beginning of 2014. Analyses of translation service data also highlighted the levels of diversity in the town by identifying over 120 languages or dialects being spoken by residents. This provides corroborating evidence of Luton being super-diverse.

5% of the total population of Luton are Black African or Black African heritage (England 2.1%) and 5.9% Black Caribbean or Black Caribbean heritage (England 1.9%). 14.4% of the population are Pakistani (England 2.1%), 6.7% Bangladeshi (England 0.8%) and 5.2% Indian (England 2.6%).
2.1.4 Deprivation

There is no single generally agreed definition of deprivation. Deprivation is a concept that overlaps, but is not synonymous with, poverty. Absolute poverty can be defined as the absence of the minimum resources for physical survival, whereas relative poverty relates this to the standards of living of a particular society at a specific time.

The Index of Multiple Deprivation 2015 produced by Communities and Local Government (CLG) combines a number of indicators, chosen to cover a range of economic, social and housing issues, into a single deprivation score for each small area in England. This allows each area to be ranked relative to each other according to their level of deprivation.

Luton is ranked as the 59th (out of 326) most deprived local authority. In 2010 Luton was ranked as the 69th most deprived local authority in 2007 as the 87st (out of 354 authorities) and in 2004 the 101st most deprived local authority. This indicates that Luton is becoming relatively more deprived in comparison to the other local authorities of England and the trend of has been happening since 2004. (Figure 2.1.3). Luton has nine output areas in the top ten per cent most deprived areas in the country. Three of these are in Northwell, two in Farley and South wards and one in Biscot and Dallow wards.
With the expected increase in older population, high deprivation and ethnic diversity in the borough, these are all risk factors that increase the likelihood of CVD.

3.0 Cardiovascular Disease Risk factors

There are numerous risk factors that can increase or influence a person’s risk of developing cardiovascular disease. These risk factors include genetics, high blood pressure, high blood cholesterol, diabetes and lifestyle choices such as smoking, obesity and lack of regular exercise. However there are other factors such as ethnicity as diabetes is more common in South Asian and African Caribbean people and gender (males are more likely to develop CVD at an earlier age than females).

Risk factors may cluster in individuals and the more risk factors present the greater the likelihood of ill health. Risk factors pose a potential harm to health while protective factors (such as exercise, healthy diet and stopping smoking) can help to mitigate such harms and can benefit a person’s health.

3.1 Hypertension

The single most important risk factor of CVD is hypertension also known as high blood pressure. NICE defines hypertension as a persistent raised blood pressure of 140/90mmHg or above (NICE 2011). Blood pressure (particularly systolic) tends to rise with age.
Hypertension is more common amongst:
- Black Caribbean men and women
- Black African men and women
- Chinese women
- Irish men
- Indian men and women
- Pakistani women

It is less common amongst Bangladeshi men and women, Chinese men, Irish women and Pakistani men.

Given the high numbers of people from these backgrounds in Luton there is likely to be high prevalence of hypertension with the borough. Add to this the ageing population within the borough and Luton is likely to experience increasing level of hypertension in the future.
Figure 3.1.1 shows recorded prevalence for Luton and comparator local authorities. Luton (12.1%) has a significantly lower recorded prevalence than England (13.8%). The Luton prevalence equates to 27,051 people diagnosed with hypertension in the borough.

Source: QOF 2014/15
However, modelled estimates (figure 3.1.2) show that there is 27.6% hypertension prevalence within Luton among persons age 16 and over. This equates to 41,587 so there are potentially around 14,500 people with undiagnosed hypertension which is potentially uncontrolled as the patient is unaware of any issue.

Recorded prevalence of hypertension within Luton GP practices ranges from 3% to 17% showing wide variation (figure 3.1.3). There are 16 practices with a recorded prevalence significantly lower than Luton and 11 practices with a significantly higher recorded prevalence.
Estimated prevalence of hypertension within Luton GP practices ranges from 11% to 30% showing wide variation (figure 3.1.4). There are 29 practices with an estimated prevalence significantly lower than Luton and one practice with a significantly higher estimated prevalence. It is worth noting there is a 15% difference between recorded prevalence and estimated prevalence of hypertension.

Source: APHO modelled estimates
Figure 3.1.5 shows recorded prevalence, exceptions and the remaining prevalence gap. The prevalence gap is the difference between expected prevalence and recorded prevalence and takes into account the exceptions on the QOF registers. The prevalence gap ranges among practices from over 1,500 to -8 (meaning a practice has recorded diabetes prevalence higher than the modelled estimates predicted).

### 3.2 Diabetes

Diabetes is a condition that causes a person's blood sugar level to become too high. There are two main types of diabetes these are type 1 and type 2. Type 1 diabetes is when the body is unable to produce insulin. Insulin is a hormone which enables the body to use the glucose in the blood. Type 1 diabetes accounts for around 10% of all diabetes within adults. Type 2 diabetes is when the body is unable to produce enough insulin or when the insulin produced does not work properly (Diabetes UK 2014). Type 2 diabetes is far more common than type 1. In the UK, around 90% of all adults with diabetes have type 2. There are 3.9 million people living with diabetes in the UK. That's more than one in 16 people in the UK who has diabetes either diagnosed or undiagnosed (NHS 2014). People with diabetes are more likely to be at risk from coronary events, strokes and other vascular problems. Targeted diabetes case finding, together with screening for Chronic Kidney Disease, forms part of the NHS Health Checks programme (NHS 2014).

Diabetes does not impact everyone equally and inequalities exist in the risk of developing diabetes, for example, in accessing services and health outcomes. Areas with high levels of deprivation are associated with a greater prevalence of diabetes (PHE 2014). Those who are overweight, physically inactive or have a family history of diabetes are at increased risk of developing diabetes. Obesity is the most important modifiable risk factor (see Section 2.4 for information on obesity in adults in Luton).

The prevalence of diabetes rises steeply with age: one in twenty people over the age of 65 in the UK have diabetes and this rises to one in five over the age of 85 years. People of South Asian, African, and African-Caribbean descent have a higher than average risk of developing type 2 diabetes than the population as a whole (DH 2011). The frequency of diabetes in England is higher in men than in women; however, women with diabetes are at relatively greater risk of dying than men (DH 2011). This is possibly due to how gender compounds other aspects of inequality such as social-economic differences in the prevalence of diabetes and obesity. In addition, pre-menopausal women with diabetes do not have the same protection against CHD as women who do not have diabetes (DH 2011). Women who have had gestational diabetes are also at increased risk of developing Type 2 diabetes (NHS 2014). Having polycystic ovary syndrome increases the risk of diabetes, especially combined with being overweight or obese (Diabetes UK 2014).
Figure 3.2.1 shows recorded prevalence for diabetes within Luton and comparator CCG’s for 2014/15. Luton (7.6%) has a prevalence significantly higher than the England average, as do all comparator CCG’s. The Luton prevalence equates to a total of 12,889 people diagnosed with diabetes.

Figure 3.2.2 Recorded prevalence of diabetes in persons aged 17+, Luton GP practices 2014/15
Figure 3.2.2 shows recorded prevalence for diabetes within Luton GP practices for 2014/15 there is wide variation with prevalence ranging from 2.3% to 12.3%. A total of 10 practices have recorded prevalence significantly lower than the Luton average and the same number have a recorded prevalence significantly higher than Luton.

Figure 3.2.3 Estimated prevalence of diabetes for Luton and England 2016 - 2035

<table>
<thead>
<tr>
<th></th>
<th>2016</th>
<th>2020</th>
<th>2025</th>
<th>2030</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Numbers</td>
<td>%</td>
<td>Numbers</td>
<td>%</td>
<td>Numbers</td>
</tr>
<tr>
<td>Luton</td>
<td>17,019</td>
<td>10.2%</td>
<td>18,138</td>
<td>10.4%</td>
<td>19,584</td>
</tr>
<tr>
<td>England</td>
<td>3,861,022</td>
<td>8.6%</td>
<td>4,085,165</td>
<td>8.5%</td>
<td>4,385,883</td>
</tr>
</tbody>
</table>

Source: APHO Diabetes prevalence model

Figure 3.2.3 shows estimated prevalence of diabetes for Luton and England from 2016 to 2035. In 2016 the estimated prevalence is 10.2% and this equates to 17,019. This compares to 12,889 on the recorded disease registers at QOF. Therefore there are potentially around 4,150 people with undiagnosed and therefore uncontrolled diabetes within Luton. As can be observed the prevalence of diabetes is estimated to rise to 22,614 people in 2035 meaning approximately 5,000 more people will have diabetes in the borough.

*Please note that QOF is based on persons aged 17+ and the modelled estimates on people 16+ so numbers may vary slightly.

The diabetes health needs assessment provides further details on diabetes and can be found at: [http://www.luton.gov.uk/Community_and_living/Lists/LutonDocuments/PDF/JSNA/Diabetes%20Needs%20Assessment%202016.pdf](http://www.luton.gov.uk/Community_and_living/Lists/LutonDocuments/PDF/JSNA/Diabetes%20Needs%20Assessment%202016.pdf)

3.3 Tobacco and second hand smoke

Smoking causes the greatest number of preventable deaths each year, including lung cancer, chronic obstructive pulmonary disease (COPD), and heart disease. These are the big killers and major causes of ill-health in Luton.

Figure 3.3 Recorded smoking prevalence QOF 2014/15
Figure 3.3 shows recorded smoking prevalence in Luton in 2014/15 was 19.9%, which is significantly higher than England. The Luton prevalence is also significantly higher than most of the comparators. New figures released suggest that smoking prevalence in Luton adults aged 18 and over is 15.8% (NWPHO 2016).

3.4 Obesity and overweight

Being overweight or obese increases your risk of developing diabetes and high blood pressure (NHS 2014). The prevalence of obesity has increased in the past 25 years in every age group, social class, ethnicity and gender. In England, most people are overweight or obese. Overweight and obese children are more likely to be obese when they reach adulthood.

Figure 3.4.1 Prevalence of obesity in adults aged 16 and over, 2014/15
Prevalence of obesity in Luton adults aged 16 and over in 2014/15 is 9.8%; this is significantly higher than the England average figure 2.4.1. However in 2012/14 data taken from the health survey for England (HSE) estimates that in Luton 63.9% of the adult population are either obese or overweight so the QOF figure is likely to be inaccurate.
A total of 10 practices had recorded prevalence significantly lower than Luton and 9 practices had prevalence significantly higher. Figure 3.4.2 shows prevalence of obesity in Luton GP practices in 2014/15.

Figure 3.4.3 shows prevalence of obesity in Luton reception year children in 2014/15 is 10.2%; this is significantly higher than the England average of 9.1%. Figure 3.4.4 shows prevalence of obesity in Luton year 6 children in 2014/15 was 23.4%; this was significantly higher than the England average of 19.1%.
3.5 Nutrition other than obesity

Dietary modification and regular physical activity are significant elements in CVD prevention and control. A diet which is high in fat can cause fatty deposits to build inside the arteries which can lead to high blood pressure and high cholesterol levels. Therefore a balanced diet including fruit and vegetables is essential (NHS 2014). See table 3.5.1 below. Due to the recent rise in obesity in the UK population the government researched ways of tackling the problem and in June 2014 published a paper outlined action to reverse obesity levels. Part of this action will involve a sugar tax being applied to sweetened drinks which will begin in 2018. This will help to reduce the risks of obesity, tooth decay and other life threatening diseases (PHE 2016). Figure 3.5.1 below shows that Luton has a significantly higher percentage of children with DMF teeth (38.7%) than the national average (27.9%). However, the proportion of 15 year olds who have three or more risky behaviours (9%) is significantly lower than national average of (15.9%).

3.6 Physical activity

Department of Health recommends that adults (aged 19-64 years) should aim to be active daily. Over a week, activity should add up to at least 150 minutes (2½ hours) of moderate intensity activity in bouts of 10 minutes or more – one way to approach this is to do 30 minutes on at least 5 days a week. Being physically active can protect against chronic diseases, with regular physical activity key to preventing people from becomes obese or overweight. See table 3.5.1 below.

Table 3.5.1: Five a day, DMF teeth, risky behaviours and physical activity performance in Luton and comparator areas in 2014

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Luton</th>
<th>Slough</th>
<th>Hillingdon</th>
<th>Redbridge</th>
<th>Birmingham</th>
<th>Wolverhampton</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proportion of population meeting 5 a day</td>
<td>41.3</td>
<td>50.1</td>
<td>49.1</td>
<td>48.7</td>
<td>48.1</td>
<td>44.1</td>
</tr>
<tr>
<td>Percentage of physically active adults</td>
<td>45.1</td>
<td>52.5</td>
<td>55</td>
<td>48.3</td>
<td>53.3</td>
<td>54.1</td>
</tr>
<tr>
<td>% Children with one or more DMF teeth</td>
<td>38.7</td>
<td>38.0</td>
<td>38.2</td>
<td>27.0</td>
<td>32.7</td>
<td>28.2</td>
</tr>
<tr>
<td>% with 3 or more risky behaviours</td>
<td>9.0</td>
<td>6.0</td>
<td>12.6</td>
<td>6.3</td>
<td>6.4</td>
<td>10.7</td>
</tr>
</tbody>
</table>

Source: PHOF

The proportion of people eating 5 a day (43.3%) in Luton is significantly lower than the national average (53.5%) and also 4 of the local authority comparators. Similarly, the proportion who meet the recommended level of physical activity in Luton (45.1%) is also significantly lower than national levels (57%) and 2 of the comparator authorities.

3.7 Alcohol

Another aspect of diet related to CVD risk is the high consumption of alcoholic beverages, which are known increase cholesterol and blood pressure.

It is estimated that about 19.4% (n=29,889) of adults aged 16 and over in Luton drink at levels that are considered increasing or higher risk which puts them at risk of harm to their health; this is not different to the England proportion of 22.3%. However PHOF data also shows that 1.3% of 15 year olds within Luton state they are regular drinkers.
4.0 Disease prevalence

4.1 Cardiovascular disease prevalence

Figure 4.1.0 All recorded cardiovascular disease prevalence 2014/15

Source: QOF 2014/15

Figure 4.1.0 shows Luton has a recorded prevalence of cardiovascular disease (CVD) of 0.9% in 2014/15 (this equates to 1,089 people) and this is **significantly lower** than the England
average of 1.1%. The Luton prevalence is also among the lowest of all the comparator CCG’s.

Figure 4.1.1 All recorded cardiovascular disease prevalence, Luton GP practices, 2014/15

Figure 4.1.1 shows recorded prevalence of CVD among Luton GP practices and the prevalence ranges from 0.2% to 1.7%. A total of three practices have prevalence significantly higher than the CCG average and one practice has a significantly lower prevalence.
Figure 4.1.2 shows estimated prevalence of CVD among Luton GP practices and the prevalence ranges from 4.5% to 13.5%. A total of 12 practices have prevalence significantly lower than the Luton average and seven practices have a significantly lower prevalence. The Luton estimated prevalence is 9.9% and this equates to 14,990. This means that there could be up to 14,000 people in Luton with undiagnosed CVD.
4.2 Coronary Heart Disease Prevalence

Figure 4.2.0 shows Luton has a recorded prevalence of coronary heart disease (CHD) of 2.5% in 2014/15 (equating to 5,686 people) and this is *significantly lower* than the England average of 3.3%. The Luton prevalence is also among the lowest of all the comparator CCG’s.

Source: QOF 2014/15
Figure 4.2.1 shows recorded prevalence of CHD among Luton GP practices and the prevalence ranges from 0.4% to 3.7%. A total of nine practices have prevalence **significantly lower** than the CCG average and eight practices have a **significantly higher** prevalence. The Luton estimated prevalence is 5% and this equates to 7,545. This means that there could be up to 1,859 people in Luton with undiagnosed CVD.
Figure 4.2.2 shows estimated prevalence of CHD among Luton GP practices and the prevalence ranges from 1% to 7%.

4.3 Stroke/Transient Ischemic Attack (TIA) Prevalence
Figure 4.3.0 shows Luton has a recorded prevalence of stroke/TIA of 1.2% in 2014/15 (equating to 2,693 people) and this is significantly lower than the England average of 1.7%. The Luton prevalence is also among the lowest of all the comparator CCG’s.

Figure 4.3.1 All recorded stroke/TIA prevalence, Luton GP practices, 2014/15

Figure 4.2.1 shows recorded prevalence of stroke/TIA among Luton GP practices and the prevalence ranges from 0.3% to 1.8%. A total of 17 practices have prevalence significantly lower than the CCG average and eight practices have a significantly higher prevalence.
Figure 4.2.2 shows estimated prevalence of stroke/TIA among Luton GP practices and the prevalence ranges from 0.6% to 3.1%. Overall on the QOF disease registers in 2014/15 there were 2,693 patients with a record of stroke/TIA. Estimated prevalence suggests there are 3,183 so there are potentially 490 people with undiagnosed stroke/TIA in Luton.

5.0 Hospital Admissions

Figure 5.0 shows that Luton has a directly aged standardised hospital admission rate for CHD of 917.7 per 100,000 population. This is significantly higher than the England rate of 559.6 per 100,000 population. The Luton rate is also the second highest of all the comparator CCG’s. Figure 5.1 shows that overall since 2003/04 rates in Luton have been
increasing although there was a decrease between 2012/13 and 2013/14. England rates have been decreasing steadily since 2003/04.

Figure 5.2 Hospital admission rate due to stroke, persons, 2013/14

Figure 5.3 Hospital admission rate due to stroke, persons, recent trends

Figure 5.2 shows that Luton has a directly aged standardised hospital admission rate for stroke of 125.2 per 100,000 population. This is significantly lower than the England rate of 174.4 per 100,000 population. The Luton rate is also the second lowest of all the comparator CCG’s. Figure 5.3 shows that overall since 2003/04 rates in Luton have been decreasing especially between 2011/12 and 2013/14. Overall England rates have been increasing since 2003/04 however this increase has not occurred every year.

Figure 5.4 Hospital admission rate due to heart failure, persons, 2013/14

Figure 5.5 Hospital admission rate due to heart failure, persons, recent trends

Figure 5.4 shows that Luton has a directly aged standardised hospital admission rate for heart failure of 153.1 per 100,000 population. This is not significantly different than the England rate of 133.7 per 100,000 population. Figure 5.5 shows that overall since 2003/04 rates in Luton have been increasing apart from a decrease between 2012/13 and 2013/14. However some years have seen decreases including between 2012/13 and 2013/14. Overall England rates have been decreasing since 2003/04 although a slight increase occurred between 2012/13 and 2013/14.
6.0 Secondary Prevention

Secondary prevention of CVD relates to using interventions which help control patients who already have a diagnosis of CVD. This includes statin prescribing, monitoring and control of elevated blood cholesterol and high blood pressure. There are also surgical procedures such as angiography which are successful in preventing CVD from worsening and becoming life threatening. This section looks at some of these interventions.

6.1 Secondary Prevention in Primary Care

Figure 6.1: CHD002: The percentage of patients with coronary heart disease in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less, 2014/15

Figure 6.1 shows the percentage of patients with CHD who have had a blood pressure reading in the last 12 months below 150/90 mmHg in Luton GP practices in 2014/15. The proportions range from 73.9% to 100%. Three practices had percentages significantly lower than the Luton average and seven practices had percentages significantly higher than Luton. Exception reporting for CHD002 shows variation in practices ranging from 0% to 15.4%.
Figure 6.2: CHD005: The percentage of patients with coronary heart disease with a record in the preceding 12 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken, 2014/15

Figure 6.2 shows the percentage of patients with coronary heart disease with a record in the preceding 12 months that aspirin, an alternative anti-platelet therapy, or an anti-coagulant is being taken in Luton GP practices in 2014/15. The proportions range from 68.4% to 100%. Six practices had percentages significantly lower than the Luton average and 10 practices had percentages significantly higher than Luton. Exception reporting for CHD005 shows variation in practices ranging from 0% to 13.8%.
Figure 6.3: CHD006: The percentage of patients with a history of myocardial infarction (on or after 1 April 2011) currently treated with an ACE-I (or ARB if ACE-I intolerant), aspirin or an alternative anti-platelet therapy, 2014/15

Figure 6.3 shows the percentage of patients with a history of myocardial infarction (on or after 1 April 2011) currently treated with an ACE-I (or ARB if ACE-I intolerant), aspirin or an alternative anti-platelet therapy, 2014/15. The proportions range from 60.9% to 100%. Four practices had percentages significantly lower than the Luton.
Figure 6.4 shows in those patients with a current diagnosis of heart failure due to left ventricular systolic dysfunction, the percentage of patients who are currently treated with an ACE-I or ARB, 2014/15. The proportions are all 100% except for three practices, one of which had a percentage significantly lower than the Luton.
Figure 6.5: DM002: The percentage of patients with diabetes, on the register, in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less, 2014/15

Figure 6.5 shows the percentage of patients with diabetes, on the register, in whom the last blood pressure reading (measured in the preceding 12 months) is 150/90 mmHg or less, 2014/15. The proportions range from 70.7% to 98.5%. Six practices had percentages significantly lower than the Luton and 11 practices had percentages significantly higher than Luton.
Figure 6.6 shows the percentage of patients with diabetes, on the register, in whom the last blood pressure reading (measured in the preceding 12 months) is 140/80 mmHg or less, 2014/15. The proportions range from 41.7% to 92.9%. Eight practices had percentages **significantly lower** than the Luton and 13 practices had percentages **significantly higher** than Luton.
Figure 6.7: DM004: The percentage of patients with diabetes, on the register, whose last measured total cholesterol (measured within the preceding 12 months) is 5mmol/l or less, 2014/15

Figure 6.7 shows the percentage of patients with diabetes, on the register, whose last measured total cholesterol (measured within the preceding 12 months) is 5mmol/l or less, 2014/15. The proportions range from 56.4% to 88.8%. Six practices had percentages significantly lower than the Luton and nine practices had percentages significantly higher than Luton.
Figure 6.8 shows the percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 59mmol/mol or less in the preceding 12 months, 2014/15. The proportions range from 35% to 81%. Five practices had percentages significantly lower than the Luton and nine practices had percentages significantly higher than Luton.
Figure 6.9 shows the percentage of patients with diabetes, on the register, in whom the last IFCC-HbA1c is 75mmol/mol or less in the preceding 12 months, 2014/15. The proportions range from 51% to 97%. Eight practices had percentages significantly lower than the Luton and nine practices had percentages significantly higher than Luton.

6.1.0 Diagnostic Tests
Coronary angiography is a procedure that can be used to diagnose heart conditions, carry out other procedures, and help plan future treatments. Angiography is a type of X-ray used to examine blood vessels. The images created during an angiography are called angiograms (NHS Choices 2015). This section looks at these procedures within Luton.
6.1.1 Angiography Procedures

Figure 6.1.1 shows Luton has a male directly age standardised rate of 498.2 per 100,000 population in 2011/12. This is significantly higher than the England average (377.5 per 100,000 population). Figure 6.1.2 shows Luton has a female directly age standardised rate of 217.7 per 100,000 population in 2011/12. This is not significantly different than the England average (187.2 per 100,000 population).

Recent trends show that in both Luton and England rates are increasing steadily.

6.2 Revascularisation

Coronary artery bypass is the process of restoring the flow of blood to the heart. The surgical procedure places new blood vessels around existing blockages to restore necessary blood flow to the heart muscle. Once blood flow is re-established normal heart function may return in time. The most common type of revascularization procedure is Coronary Artery Bypass Grafting, sometimes called CABG (“cabbage”) (URMC 2016).
Figure 6.2.1 Directly standardised rates for elective angioplasty procedures, persons, 2011/12

Figure 6.2.1 shows Luton has a directly age standardised rate of elective angioplasty procedures of 47.4 per 100,000 population in 2011/12. This is not significantly different to the England average (38.6 per 100,000 population). Figure 6.2.2 shows recent trends in Luton are increasing while decreasing in England.

Figure 6.2.3 Directly standardised rates for non-elective angioplasty procedures, persons, 2011/12

Figure 6.2.3 shows Luton has a male directly age standardised rate of non-elective angioplasty procedures of 99.8 per 100,000 population in 2011/12. This is significantly higher than the England average (72.4 per 100,000 population). Figure 6.2.4 shows recent trends in both Luton and England are increasing.

6.3 Statin Prescribing

NICE recommends that there are preferred drugs for the prevention of CVD, taking into account mortality and morbidity. The Guideline recommends that when a decision is made to prescribe a statin, providers should use a statin of high intensity and low acquisition cost.
High intensity statins include Simvastatin 80mg/day, Atorvastatin >20mg/day, and Rosuvastatin >10mg/day. However, there is an increased risk of myopathy with high dose (80mg) simvastatin, and this dose should only be considered in certain high risk patients (NICE 2014).

**7.0 All Circulatory Disease Mortality all ages**

![Figure 7.0. Causes of death due to CVD in persons all ages in England in 2012-14](image)

Source: ONS Mortality data via HSCIC Indicator Portal

Figure 7.0 shows the proportion of deaths due to some components of CVD in England for persons all ages for 2012/14. The highest proportion of deaths are due to CHD (45%) followed by stroke (26%). Hypertension makes up 4% of the total. The other category accounts for 25% of all deaths and includes heart failure, atrial fibrillation and other causes of death.
Figure 7.0.1 Causes of death due to CVD in persons all ages in Luton in 2012-14

![Pie chart showing causes of death due to CVD in Luton in 2012-14. CHD accounts for 51%, stroke for 22%, hypertension for 6%, and others for 21%.]

Source: ONS Mortality data via HSCIC Indicator Portal

Figure 7.0.1 shows the proportion of deaths due to some components of CVD in Luton for persons all ages for 2012/14. The highest proportion of deaths are due to CHD (51%) followed by stroke (22%). Hypertension makes up 6% of the total. The other category accounts for 21% of all deaths. These figures are very similar to the national proportions above.

Figure 7.0.2 Mortality from all CVD, males, all ages, 2012/14

Figure 7.0.3 Mortality from all CVD, females, all ages, 2012/14

![Bar charts comparing mortality rates from all CVD in males and females for different local authorities, with Luton having significantly higher rates compared to England.]

Figure 7.0.2 shows Luton (362.1 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population due to all CVD than England for males (326.8 per 100,000 population). Figure 7.0.3 shows Luton (252.5 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population due to all CVD than England for females (219.6 per 100,000 population). This female rate is also the highest of all the comparator local authorities.
Figure 7.0.4 shows Luton (307.3 per 100,000 population) has a significantly higher directly age standardised mortality rate per 100,000 population due to all CVD than England for persons (267.3 per 100,000 population). Figure 7.0.5 shows Luton and England trends for males, females and persons are decreasing.

7.1 Premature mortality due to all CVD

Figure 7.1 shows the proportion of premature deaths (aged 75 and less) due to some components of CVD in England for 2012/14. The highest proportion of deaths are due to CHD (55%) the other category accounts for 24% of all deaths and includes heart failure,
atrial fibrillation and other causes of death. Stroke accounts for (26%) and hypertension makes up 3% of the total.

Figure 7.1.1 Causes of premature death due to CVD in persons aged 75 and less in Luton in 2012-14

![Pie chart showing causes of premature death in Luton](image)

Source: ONS Mortality data via HSCIC Indicator Portal

Figure 7.1.1 shows the proportion of premature deaths (aged 75 and less) due to some components of CVD in Luton for 2012/14. The highest proportion of deaths are due to CHD (62%) the other category accounts for 17% of all deaths and includes heart failure, atrial fibrillation and other causes of death. Stroke accounts for (17%) and hypertension makes up 4% of the total.

Figure 7.1.2 shows Luton (153.9 per 100,000 population) has a significantly higher directly age standardised mortality rate per 100,000 population for all CVD than England for males aged under 75 years (106.2 per 100,000 population). This male rate is also the highest of all
the comparator local authorities. Figure 7.1.3 shows Luton (64.9 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population than England for females aged under 75 years (46.9 per 100,000 population).

**Figure 7.1.3** Mortality from all CVD, persons, 75 years and less, recent trends

Figure 7.1.4 shows Luton (108.6 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population due to CVD than England for persons aged under 75 years (75.7 per 100,000 population). This person rate is also the highest of all the comparator local authorities. Figure 7.1.5 shows Luton and England trends for males, females and persons are decreasing.

### 7.2 Coronary Heart Disease Mortality All ages

**Figure 7.2.0** Mortality from all CHD, males, all ages, 2012/14

Figure 7.2.0 shows Luton (198.4 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population than England for males all ages due to CHD (170.5 per 100,000 population). Figure 7.2.1 shows Luton (111.9 per 100,000 population) has a **significantly** higher directly age standardised mortality rate per 100,000 population due to all CHD than England for females all ages (81.3 per 100,000 population).
Figure 7.2.2 shows Luton (153.6 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population than England due to CHD for persons all ages (120.0 per 100,000 population). Figure 7.2.3 shows Luton and England trends for males, females and persons are decreasing.

### 7.3 Premature Coronary Heart Disease Mortality

Figure 7.3.0 shows Luton (100.1 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population for CHD than England for males aged under 75 years (64.3 per 100,000 population). This male rate is also the highest of all the comparator local authorities. Figure 7.3.1 shows Luton (36.5 per 100,000 population) has a **significantly higher** directly age standardised mortality rate per 100,000 population due to CHD than England for females aged under 75 years (19.9 per 100,000 population). This female rate is also the highest of all the comparator local authorities.
Figure 7.3.2 shows Luton (67.7 per 100,000 population) has a significantly higher directly age standardised rate per 100,000 population than England for persons (41.5 per 100,000 population). This person rate is also the highest of all the comparator local authorities. Figure 7.3.3 shows Luton and England trends for males, females and persons are decreasing.

7.4 Hypertension Mortality All ages

Figure 7.4.0 shows Luton (16.9 per 100,000 population) has a higher directly age standardised rate per 100,000 population than England for males (11.7 per 100,000 population) though this is not significant. Figure 7.4.1 shows Luton (20.2 per 100,000 population) has a significantly higher directly age standardised rate per 100,000 population than England for females (11.1 per 100,000 population).
Figure 7.4.2 shows Luton (19.5 per 100,000 population) has a significantly higher directly age standardised rate per 100,000 population than England for persons (11.6 per 100,000 population). Figure 7.4.3 shows Luton and England trends for males, females and persons are increasing.

7.5 Premature Hypertension Mortality

Figure 7.5.0 shows Luton (4.1 per 100,000 population) has a higher directly age standardised rate per 100,000 population than England for males (11.7 per 100,000 population) though this difference is not significant. Figure 7.5.1 shows Luton (20.2 per 100,000 population) has a higher directly age standardised rate per 100,000 population than England for females (11.1 per 100,000 population) again this rate is not significantly different.
Figure 7.5.2 shows Luton (19.5 per 100,000 population) has a higher (though not significantly) directly age standardised rate per 100,000 population than England for persons (11.6 per 100,000 population). Figure 7.4.3 shows Luton and England trends for males, females and persons are increasing.

*Note due to small numbers and some historical data being missing the rates are quite erratic.

### 7.6 Stroke Mortality All ages

Figure 7.6.0 shows Luton (74.7 per 100,000 population) has a higher directly age standardised rate per 100,000 population than England for males (69.8 per 100,000 population). Figure 7.6.1 shows Luton (62.2 per 100,000 population) has a higher directly age standardised rate per 100,000 population than England for females (65.8 per 100,000 population) these rates are not significantly different than the national average.
Figure 7.6.2 shows Luton (69.4 per 100,000 population) has a higher (but not significantly different) directly age standardised rate per 100,000 population than England for persons (68.0 per 100,000 population). Figure 7.6.3 shows Luton and England trends for males, females and persons are decreasing.

### 7.7 Premature Stroke Mortality

Figure 7.7.0 shows Luton (25.9 per 100,000 population) has a **significantly higher** directly age standardised rate per 100,000 population than England for males (11.7 per 100,000 population) and the Luton rate is also the highest of all the comparator Local authorities. Figure 7.7.1 shows Luton (11.2 per 100,000 population) has a lower directly age standardised rate per 100,000 population than England for females (11.1 per 100,000 population) although this rate is not significantly different.
Figure 7.7.2 shows Luton (19.5 per 100,000 population) has a significantly higher directly age standardised rate per 100,000 population than England for persons (13.8 per 100,000 population). Figure 7.7.3 shows Luton and England trends for males, females and persons are decreasing since 1995/97. However for Luton males and persons rates have started to increase slightly from 2010/12.

7.8 The role of CVD mortality in the Life Expectancy Gap

In 2012/14 life expectancy for males in Luton was 78.4 years compared to 79.6 years in England so the absolute gap between Luton males and England males was 1.2 years less in Luton. For females the gap is 1 year less in Luton 82.2 years and 83.2 years respectively in Luton and England.

Figure 7.7.3 Scarf chart showing the breakdown of the life expectancy gap between Luton and England by cause of death 2012/14

Source: PHE Segment tool
Figure 7.7.3 shows that mortality due to circulatory diseases is responsible for 50% of this gap in life expectancy for males and 45.9% for females.

Figure 7.7.4 Scarf chart showing the breakdown of the life expectancy gap between Luton most and least deprived quintiles by cause of death 2012/14

Source: PHE Segment tool

The life expectancy at birth in the most deprived quintile in Luton for 2012/14 for males is 73.2 years this compares to 82.2 years in the least deprived quintile. Therefore the absolute life expectancy gap for males in the most and least deprived quintiles is 9 years less in the most deprived quintile. For females in the most deprived quintile life expectancy at birth is 80.2 years and in the least deprived quintile 84.3 therefore the absolute gap is 4.1 years less in the most deprived quintile.

Figure 7.7.4 shows that mortality due to circulatory diseases is responsible for 38.4% of this gap in life expectancy for males and similarly 38.6% for females.
Figure 7.7.5 Bar chart showing life expectancy gained or lost in Luton most deprived quintile if it had the same mortality rates as the least deprived quintile, by detailed cause of death 2012/14

Source: PHE Segment tool

Figure 7.7.5 shows that for men the largest contributors to years in life expectancy gained in Luton are CHD 1.66 years and other cancers 0.74 years and lung cancer 0.66 years. This means that in the most deprived quintile had the same mortality rates as the least deprived quintile men would live 1.66 years longer. For females CHD 0.76 is the highest life expectancy years gained.

8.0 Costs of Cardiovascular Disease

Programme budgeting figures show that Luton CCG spent £229,931,852 on care in 2013/14 this equates to £7,326,756 per 100,000 population. Spend on circulatory problems (£7.3 million per 100,000 population) was the third highest spend category in Luton after mental health disorders and maternity health. This equates to over £15 million for the whole population of Luton. Figure 7.0 shows the percentage breakdowns of all circulatory problems spend within Luton.
Figure 7.0 shows the expenditure percentage splits across care settings in Luton compared to England. In Luton the highest spend is in unscheduled care (non-elective admissions) with 29% of the circulatory disease spend compared to 30% in England. Primary prescribing accounts for 21% of spend in Luton and 23% in England. A higher proportion of spend in Luton compared to England comes in critical care 7% compared to 3% and in scheduled care outpatients 16% compared to 10%.

7.1 Spend and Outcomes
It is important that expenditure is assessed relative to quality and outcomes. In 2013/14 Luton CCG had higher spend for circulatory diseases compared with England, but also better outcomes (not significant). Both figures (spend and outcomes) were within one standard deviation of England benchmarks (figure 7.3).
Figure 7.1 shows problems of the circulatory spend and outcomes for premature mortality from cardiovascular disease in persons. Luton has a lower spend than comparators but also has worse outcomes. This is also the case for males and females.

8. What we are doing locally

**Cardiac Rehabilitation** is commissioned from Luton and Dunstable Hospital. It is offered to all patients with Acute Coronary Syndrome, and after Percutaneous Coronary Intervention (PCI), coronary artery bypass graft (CABG), implantable cardioverter defibrillator (ICD), valve and other cardiac surgery, as well as patients with stable heart failure or stable angina. All four phases of rehabilitation are included: 1. Acute, 2. Sub-acute, 3. Intensive Outpatient therapy, 4. Independent ongoing conditioning. Hospital, community and home-based programmes are provided. The service delivers a comprehensive package, including exercise, education and psychological support and has links with other local health prevention programmes, including Smoking Cessation, through Live Well Luton.

**Enhanced Recovery Programme (ERP)** Luton CCG’s Enhanced Recovery Policy focuses on ensuring that patients are in the best possible condition for surgery and recommends, before referral to surgical and other interventional specialities such as cardiology, that patients undergo a general health check to identify certain risk factors; patients who are identified as needing intervention are actively managed by the GP prior to referral, to help reduce the risks and help patients get fit for surgery.

**Heart failure** Luton CCG commissions a community heart failure service from Cambridge Community Services (CCS). The focus of the service is to support people with heart failure to
improve the quality and length of their life, by supporting them to understand and self-manage their condition to prevent debilitating complications and early death. The service is an integral part of the Heart Failure service across the whole of Luton with primary care, specialists and the hospital. There is an established nurse-led heart failure clinic within Luton and Dunstable Hospital which helps identify patients that have been admitted with heart failure and who would benefit from a community based service. The two services work closely together to improve the patient journey and experience. The hospital service tends to see patients known to the cardiology team and can see patients with diastolic dysfunction and who need more complex care.

**Atrial Fibrillation (AF)** Luton CCG is working with member GP practices to improve detection, diagnosis and management of AF. The project has raised awareness with GPs and aims to:

- Bring the Luton prevalence of AF more in line with the expected value.
- Improve detection of AF in primary care by carrying out more opportunistic pulse checks, targeted particularly at those aged over 65 years and those on chronic disease registers.
- Encourage GPs to carry out stroke risk assessment in all people with AF and people identified as requiring anticoagulation for the prevention of AF-related stroke should be offered all NICE approved options.
- Up skill GPs to counsel AF patients on the anti-coagulation decision, and to initiate NOACs in primary care where appropriate, improving patients’ access to medicines.
- Ensure patients are on appropriate anti-coagulation and any patients still on aspirin for the prevention of a stroke event to be identified and switched.

**Live Well Luton** is the integrated wellness services for Luton. They provide adult and child weight management services, stop smoking services and conduct community health checks.

Live Well Luton acts as a referral hub for weight management services in Luton. For adults we currently commission Live Well Luton, Active Luton, Slimming World and Weight Watchers to provide weight management services in Luton. Live Well Luton triage referrals to the most appropriate service and follow-up with participants periodically.

In 2015/16 the Live Well Luton adult weight management service had 587 starters with 10% achieving 5% or more weight loss. In addition to the adult weight management service, Live Well Luton also provides personal health plans.

**Exercise on referral** Active Luton provides a high quality exercise referral scheme that increases long term adherence to physical activity and improves the physical and mental health and wellbeing of clients. The programme is available to adults aged 16 years and over, have been assessed for readiness to change, are motivated to participate in programme and meet one or more of the following eligibility criteria:

- Aged 16 to 18 years:
- On or above the 91st Centile
- Aged ≥19 years
- Obese adults (BMI ≥30kg/m²).
• Have a co-morbidity or from an at risk group with a BMI ≥27.5kg/m².
• Central obesity as measured by waist circumference of ≥102cm in men (≥ 90cm in Asian men) and ≥ 88cm in women (≥ 80cm in Asian women).

Those who are referred to the service receive a free ‘Go 4 Less’ card and are entitled to 30 weeks of supported physical activity. Currently, participants initially participate in 10 gym sessions that are 1:1 with a Personal Training. After this period continued support is offered or can be requested as and when desired by the participant. There is no restriction on attending during peak or off peak times. In 2015/16 to scheme received 995 referrals of which 978 started (98%) and 808 completed (83%) the full 30 weeks.

**Commercial weight loss** Public Health commissioned the delivery of commercial weight management services for adults (aged 16 years or over) with a BMI of equal to or greater than 27.5 with co-morbidities or from an at risk group or a BMI equal to or greater than 30. The weight management service supports individuals meeting this criteria to lose weight and learn how to maintain a healthier weight. This service also supports a reduction in health inequalities by ensuring services are suitable and accessible to those from more deprived backgrounds and those from minority ethnic groups.

In 2015/16 796 individuals started a commercial weight loss programme, 261 (32.8%) of those achieved a weight loss of 5% or more of their initial bodyweight weight.

**Groundwork** Currently deliver two projects in relation to healthy lifestyles:

**The Veg-Fest project** has the main aim of influencing unhealthy lifestyle behaviours in urban children by promoting healthy eating and gentle exercise through growing their own fruit and vegetables (seed to produce). The programme engages with primary schools located in Luton as defined by Luton Borough Council boundaries (LU1 to LU4 post codes) and enables participants and their families to learn about where their food comes from, as well as its nutritional value and what is meant by healthy eating. The project improves knowledge about healthy eating, food growing and physical activity.

The project increases the incidence of eating fruit and vegetables as part of a regular daily diet, as well as motivating and enabling families to continue growing fruit and vegetables at home. In 2015/16 the project engaged 13 schools, 5 of which were targeted due to prevalence of excess weight identified though the National Child Measurement Programme. This enabled the project to engage with 400 children of which 60% increase their fruit and veg intake, and 40% increase in their physical activity levels.

**The Green Aiders project** acts to improve the health and wellbeing of two specific client groups; adults with learning disabilities and other vulnerabilities, and elderly, vulnerable householders who require support with maintaining their gardens.
The first group improved their physical activity levels by being involved in regular outdoor gardening work. This also acts to improve their social skills and reduced isolation by being involved in team activities on a regular basis. This positively influences their overall mental wellbeing and confidence. Moreover, their wellbeing also benefits by taking part in a project that helps other people, as well as being able to see the positive impact of their work.

The second group benefit from a reduced risk of trips and falls due to dangerous overgrown gardens, as well as improved mental wellbeing and reduced social isolation through meeting the team of volunteers from the first group. Furthermore, the project has the potential to improved physical activity by improving garden access, allowing the resident to move freely around their garden and return to conducting gardening activities. It is also noteworthy to mention that the project can contribute to improved ability to stay living in their own homes and reduce the risk of the resident being targeted by antisocial behaviour.

In 2015/16 the project received 127 referrals to the service, however funding only permitted the clearance of 51 gardens, which clearly demonstrates a need for the service. This resulted in 23 days of visits accumulating to 138 hours of gardening.

**Health Checks**

The NHS Health Check is a check of peoples’ heart health. Aimed at adults in England aged 40 to 74, it checks vascular or circulatory health and works out the risk of developing some of the most disabling – but preventable – illnesses. Among other things, blood pressure, cholesterol, and BMI will all be checked and results given to the patient (NHS 2014).

Crucially, an NHS Health Check can detect potential problems before they do real damage. Everyone is at risk of developing heart disease, stroke, type 2 diabetes, kidney disease and some forms of dementia.

**Table 8.0: Recent uptake of health checks within Luton compared to national average**

<table>
<thead>
<tr>
<th></th>
<th>Number eligible</th>
<th>Health Checks offered</th>
<th>Percentage offered Health Check</th>
<th>Health Checks received</th>
<th>Percentage received Health Check</th>
<th>Uptake</th>
<th>Uptake (national average)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-12</td>
<td>47,773</td>
<td>9,636</td>
<td>20.20%</td>
<td>5,465</td>
<td>11.40%</td>
<td>57%</td>
<td>49%</td>
</tr>
<tr>
<td>2012-13</td>
<td>47,412</td>
<td>7,919</td>
<td>16.70%</td>
<td>4,747</td>
<td>10.00%</td>
<td>60%</td>
<td>49%</td>
</tr>
<tr>
<td>2013-14</td>
<td>47,612</td>
<td>13,059</td>
<td>27.40%</td>
<td>7,419</td>
<td>15.60%</td>
<td>78%</td>
<td>49%</td>
</tr>
<tr>
<td>2014-15</td>
<td>53,053</td>
<td>9,673</td>
<td>18.20%</td>
<td>4,924</td>
<td>9.30%</td>
<td>51%</td>
<td>49%</td>
</tr>
<tr>
<td>2015-16</td>
<td>54,682</td>
<td>7,748</td>
<td>14.20%</td>
<td>4,031</td>
<td>7.40%</td>
<td>52%</td>
<td>49%</td>
</tr>
<tr>
<td>Total</td>
<td>50,106</td>
<td>48,035</td>
<td>95.90%</td>
<td>26,586</td>
<td>53.10%</td>
<td>55%</td>
<td>49%</td>
</tr>
</tbody>
</table>

Source: NHS Health Checks

Table 8.0 above shows that in recent years Luton has consistently has a higher health check uptake compared to the national average. The total row shows the average numbers of numbers eligible from 2011/12 to 2015/16.
9.0 Nice guidance
There is a large amount of guidance from the National Institute of Health and Care Excellence on the prevention and treatment of cardiovascular disease. It includes guidance on preventing the uptake of smoking by children and young people and on promoting physical activity, through to the management of clinical conditions such as raised blood lipids, chronic heart failure and hypertension. This guidance indicates that the prevention of cardiovascular disease are to avoid smoking, to be physically active and to follow a healthy diet. NICE specific pathways can be found under the following links:

- Cardiovascular disease prevention
- Diet
- Physical activity
- Smoking
- Type 1 diabetes in adults

More information can be found here: https://www.nice.org.uk/guidance/conditions-and-diseases/cardiovascular-conditions/cardiovascular-conditions--general-and-other

10.0 Recommendations
Prevention and screening
- Public Health to develop borough plans to increase physical activity, improve diets, reduce alcohol and tobacco consumption
- Control and prevent diabetes which is an important CVD risk factor (see diabetes HNA)
- Primary and community services should provide brief advice at every opportunity and refer to lifestyle services where appropriate (NICE PH25)
- Identification and referral to intensive lifestyle support in high risk and vulnerable groups (NICE PH15) should be systematically rolled out across primary and community care

Early Detection and diagnosis /Treatment: improving experiences of care and support
- Reduce variation in primary care of
  - Recorded prevalence and control of cardiovascular disease to reduce unplanned hospital admissions, secondary care use and health inequalities (NICE PH15) as part of enhanced primary care model
  - Health checks uptake with a focus on quality including referral onto intensive lifestyle programmes
  - Case finding and control of blood pressure and cholesterol linked to the primary care investment programme.

Aftercare
- Embed within cardiovascular pathway post treatment (after cardiac rehabilitation) lifestyle advice and support for all patients as part of the Enhanced Recovery Programme.

Integrated commissioning
• Review current pathway/service offer, to reduce duplication and redistribute to need and develop discharge bundle for repeat admissions including community rehabilitation and early supported discharge. Consider a CQUIN for discharge bundles.

• Ensure all cardiovascular specifications are outcomes focused and linked to other relevant specifications.
References


