Warrington

Joint Strategic Needs Assessment (JSNA)

Healthy Weight

2015

June 2015
EXECUTIVE SUMMARY

Scope of the chapter

This chapter examines the prevalence of obesity in adults. It also looks at diet and to a small extent, levels of physical activity. There are separate JSNA chapters on children’s healthy weight and on physical activity. It is acknowledged that this chapter does not address issues relating to the prevalence of underweight.

National obesity prevalence rates are sourced from the Health Survey for England (HSE) data. The Warrington Health and Wellbeing Survey 2013 is the local data source, which can be analysed at a sub-Warrington level by age, gender, deprivation and geographical area.

Introduction

The World Health Organisation (WHO) describes obesity as one of the most blatantly visible, yet most neglected public-health problems that threaten to overwhelm both more and less developed countries. There is substantial evidence to show that obesity has a major impact on health and can lead to a number of both chronic and severe medical problems.

Excess weight is caused by an imbalance between energy in what is consumed through eating, and energy expenditure (what is used by the body, over a prolonged period). An individual’s biology (genetics and metabolism) and/or behaviour (eating and physical activity habits) are primarily responsible for maintaining a healthy body weight. In addition, there are significant external influences such as environmental and social factors.

The causes of overweight and obesity are multi-faceted and will require multi-faceted solutions. Causes depend on a wide range of factors including physiological, psychological, social and environmental (WBC, 2014a). Social determinants and emotional factors play significant roles in eating habits. Emotional health and wellbeing can influence a person’s readiness to make lifestyle changes, and other issues may need tackling before raising the issue of unhealthy weight. Obesity prevalence is strongly linked to socioeconomic deprivation; as deprivation rises, so does obesity prevalence. Economic factors can affect the ability to choose a healthy diet and can reduce opportunities to be physically active. People need good access to sport and leisure facilities, parks and open spaces. Concerns about safety and crime can deter people from being physically active. Design of the built environment can encourage or deter people to walk and cycle. There have been changes over recent decades in food production, motorised transport and work/home lifestyle patterns that affect body weight. Growing portion sizes distort our view of what is a ‘normal’ and healthy amount to eat (BHF, 2013). Social norms are changing and to many people, overweight now looks ‘normal’.

Given that there are many inter-related factors that contribute towards an individual being of an unhealthy weight, ‘one-size-fits-all’ weight management programmes are unlikely to suit all people attempting to lose weight.

In adults, obesity is commonly defined by a Body Mass Index (BMI) of 30 or more. For children in the UK, the British 1990 growth charts (Cole et al., 1995) are used to define weight status.

Nationally, according to Health Survey for England (HSE) data, obesity prevalence among adults increased sharply from 14.9% in 1993 to 22.5% in 2002. However it then showed a much more gradual increase from 22.6% in 2003 to 24.9% in 2013. For people classed as obese, the risks to health increase greatly as BMI increases. Extreme obesity (morbidly obese) prevalence in adults in England has also shown an increase, from to 1.9% in 2003 to 2.7% in 2013.
Forecasts contained in the well-known Foresight Report (Butland et al, 2007) suggested that, by 2050, adult obesity prevalence would affect 60% of men and 50% of women nationally. However, projections calculated at that time were based on HSE data from 1993 to 2004 (i.e. before the levelling off had become more apparent) and predicted a much steeper increase than projections calculated from more recent data (2003-2012).

A National Obesity Observatory publication (NOO, 2010a) summarises estimates of the obesity-related direct costs to the NHS and indirect costs (such as loss of productivity). There are no agreed definitions of costs, and so different studies have used different definitions, and are therefore difficult to compare. Estimates are wide-ranging (£billions), and most are based on reports by the National Audit Office (NAO, 2001), the House of Commons Health Committee (HCHC, 2004) and the Foresight Report (Butland et al, 2007), and are now becoming outdated, having been published between 2001 and 2007.

The Department of Health (DH, 2011a) has estimated that, out of an NHS workforce of 1.2 million, 300,000 are obese and 400,000 are overweight. Together, these relate to 60% of the workforce. Levels are likely to be very similar within local authorities and other local workforces.

In relation to children, based on information collected by the National Child Measurement Programme 2013/14 (HSCIC, 2014a), across England as a whole, obesity prevalence was:
- 9.9% of boys and 9.0% of girls (all children 9.5%) in Reception year (aged 4-5 years).
- 20.8% of boys and 17.3% of girls (all children 19.1%) in Year 6 (aged 10-11 years).

Evidence suggests that children are more likely to be obese if at least one parent is obese.

Although obesity prevalence has shown a more gradual increase in recent years, these stark statistics highlight why the prevention of obesity has to be a major public health priority with the aim of reducing prevalence.

In “Healthy Lives, Healthy People: A call to action on obesity in England” (DH, 2011b), the Conservative government’s ambition was to achieve a downward trend in the level of excess weight in adults by 2020. It advocated a life-course approach and stressed the importance of striking a balance between treating those who are already obese and taking measures to prevent those currently of a healthy weight from becoming overweight.
Key Findings, Issues and Gaps

- Current overweight and obesity levels in Warrington are estimated to be above the national average. The Public Health Outcomes framework shows local levels to be at 70% as compared to 63.8% national average.

- The Warrington Health and Wellbeing Survey 2013 suggested that nearly 20% of adults are obese (over 39,000 adults).

- Both nationally and within Warrington, there is a correlation between socio-economic deprivation and obesity prevalence, with higher prevalence in more deprived areas.

- At ward level, Birchwood and Poplars & Hulme had significantly higher obesity prevalence than Warrington overall (26.3% and 32.0% respectively). It is also significantly higher (31.3%) in women living in Orford.

- There are numerous adverse health effects of obesity, including heart disease, diabetes, asthma, heart failure and hypertension. Reported rates of all of these conditions, except hypertension, are higher in Warrington than nationally (although the differences may not be statistically significant.) Although recorded prevalence of hypertension is currently lower than England, previous work suggests there may be substantial under-reporting.

- The Public Health Team moved from the NHS into the local authority in 2012 and is responsible for the provision of tier 1 prevention initiatives and tier 2 weight management services in Warrington. Historically, there has been no tier 3 specialist services offering specialist clinical support for those who are morbidly obese, but there has been some provision for tier 4 bariatric surgeries via an NHS England service.

- The current tier 2 weight management service is commissioned and performance managed using both activity and outcome measures by the Public Health Team via Warrington Borough Council.

- From April 2016 Warrington Clinical Commissioning Group (CCG) will be responsible for both tier 3 and tier 4 services. Partnership work between Warrington Borough Council Public Health and the CCG has begun to help develop a clear pathway for overweight people in Warrington.

- Excess weight in pregnancy increases the risk of pre-eclampsia, diabetes, high blood pressure and premature birth. Warrington Hospital reports a high number of pregnant women who are overweight or obese requiring maternal weight care pathway to be implemented.

Recommendations for Commissioning

- To ensure the Healthy Weight Operational Group continues to measure local work against the Warrington Healthy Weight Strategy which was written with reference to the Public Health White Paper, Healthy Lives, Healthy People (Department of Health, 2012a).

- To retain an integrated approach to preventing and managing obesity by maintaining multi-agency partnership work through strategic, operational and delivery groups. (NICE guidance, 2014a, PH53, recommendation 1).

- To ensure that a wide range of staff across partner organisations are supported to give basic messages about weight through the courses available through the Public Health Training catalogue. (NICE guidance, 2014a, PH53, recommendation 14).

- Action to modify the impact of an obesogenic environment at both a population and individual levels is needed. Local authorities have a range of legislative and policy levers at their disposal, alongside wider influences on healthy lifestyles that can help to create places where people are supported to maintain a healthy weight. The Healthy Weight Operational
Group should work with colleagues across local authorities to use these and other approaches to maximise health benefits.

- To continue to focus prevention efforts within the more socio-economically deprived areas of Warrington to attempt to reduce the inequalities that exist between most and least deprived, in terms of unhealthy weight and resulting health issues. As part of this focussed effort, investigate what people feel are the barriers to healthier eating and more physical activity, and how they can be helped to overcome these barriers.

- For Warrington Borough Council to apply for the national ‘Workplace Charter Award’. To earn this, an organisation must provide evidence against a number of criteria which relate to physical activity and healthy eating, e.g. reviewing the specifications of commissioned caterers and removal of unhealthy vending machines etc. Also, to encourage local businesses to achieve the national Workplace Wellbeing Charter Accreditation.

- To set outcome targets based on the Department of Health’s Best Practice Management for Weight Management Services 2013 to ensure that clients’ weight-loss targets are based on the knowledge of risk and likely co-morbidities and on subsequent potential for health gain and risk reduction, which differ according to BMI category.

- The Warrington Healthy Weight Service runs a 12 week programme of healthy eating advice, exercise, behavioural techniques and cooking skills. Less than half of clients starting the 12 week course actually complete it; this suggests that the service and commissioners need to investigate why clients choose not to complete the course, and to continue to find new ways of engaging with clients to encourage them to complete it. (NICE guidance, 2014a, PH53, recommendation 8).

- To review the current care pathway across all levels of provision, with the aim of ensuring that an appropriate evidence-based care pathway is in place, which is responsive to the needs of the local population based on local intelligence, and that NICE guidelines are implemented.

- The ‘Fit to Tackle’ lifestyle community programme, commissioned by Public Health and delivered by the current weight management services has shown early positive outcomes. This programme needs to continue to be monitored and evaluated to ensure weight loss happens on a safe way and helps to prevent weight gain. (NICE guidance, 2014a, PH53, recommendation 17).

- To embed a mandatory training requirement and continued professional development in all appropriate contract specifications. (NICE guidance, 2014a, PH53, recommendation 15).

- To use the Healthy Child programme contact points and the National Child Measurement Programme to provide an opportunity to target children and adults by addressing unhealthy lifestyle choices within the family. (NICE quality standard QS94, 2015a).

- To further strengthen links between the healthy weight agenda and the Active Warrington Strategy action plan. This includes the work delivered by the Schools Sports Partnership, and the School PE & Sports Reference Group.

- Public Health commissioners need to continue to encourage innovation with regards to weight management services and initiatives in recognition that a ‘one-size-fits-all’ weight management programme is unlikely to suit all people attempting to lose weight. (NICE guidance, 2014a, PH53, recommendation 7).
1) WHO IS AT RISK AND WHY?

The broad set of social and environmental factors influencing individuals to make healthy choices about maintaining a healthier weight can be considered under four headings: human biology, culture and individual psychology, the food environment and the physical environment.

Different measures can be used to identify individuals who are overweight or obese. The amount of body fat in the human body is called adiposity. There are many methods of directly measuring this, but these usually involve complicated procedures. Indirect methods can be used in everyday clinical practice to estimate adiposity, the most common being body mass index (BMI) which is calculated as the weight (in kilograms) divided by the height (in metres) squared. A simple measure of fat distribution, in particular central adiposity, is waist circumference, which can also be related to overall body shape by calculating waist-to-hip ratio. A limitation of BMI is that it is not always an accurate predictor of body fat or fat distribution around the body, particularly in muscular individuals. However, BMI gives a reasonable approximation of adiposity in most people, and waist circumference is the most practical measurement for assessing abdominal fat (NICE, 2006).

A key underlying issue is socio-economic deprivation. Nationally, there is a strong correlation between socio-economic deprivation and obesity prevalence, with higher prevalence in more deprived areas (Adbulrahman et al, 2012). Social determinants play a key role in the choices that individuals are able to make concerning their diet and activity (NICE, 2006; NICE, 2014b), and social class is linked to lower consumption of healthier food options, poor access to sports facilities and less physical activity outside work (Public Health England, PHE, 2013a). Many of the measures of ill-health and health-related lifestyle factors follow patterns of socio-economic deprivation, with more ill-health in the more deprived areas.

There are differences between men and women; a much higher proportion of men than women are in the overweight category and a higher proportion of men than women are in the obese (excluding morbidly obese) category; however the proportion of morbidly obese women has been consistently higher than men. Also, a higher proportion of women than men are classified as underweight.

Obesity prevalence is lower in younger age-bands, and increases with age up to a point. HSE data from 2011-2013 shows that obesity prevalence in women, it increases with age from 16 to 74, but then decreases in those aged 75+. In men, it peaked in the 45-54 age-band. Trend data since 1993 has shown an upward shift across all age groups.

There is evidence that obesity is more prevalent among certain ethnic groups, particularly African Caribbean and Pakistani women. There is also evidence that adults from some ethnic groups are at an equivalent risk of diabetes, other health conditions or mortality at a lower BMI than the white European population (NICE, 2013a; NICE, 2014c; NOO, 2011a). There are known associations between ethnicity and area deprivation, and deprived urban areas in England tend to have a higher proportion of individuals from non-White ethnic groups, so it is likely that there are confounding factors which affect obesity prevalence by ethnic group. However, even when confounding factors such as deprivation and urban environment are controlled for, there are still differences between ethnic groups.

There are also links between being overweight or obese, and mental health and well-being, including stigmatisation, poor self-esteem, depression, bullying and social exclusion. Good mental health is a protective factor against obesity (NOO, 2011b).

Obesity in pregnancy can have an adverse effect on pregnancy outcomes for mothers and babies, and increases pressure on, and cost of, services.
Obesity is more common in people with learning disabilities than in the general population (HSCIC, 2010); children with a limiting illness are more likely to be obese or overweight, particularly if they also have a learning disability. Although there is an established link with weight gain associated with medication, poor diet and lack of exercise are also contributing factors. Access and support for children and adults with physical disabilities to participate in sport and physical activities will impact on fitness and the risk of being overweight or obese.

2) LEVEL OF NEED IN THE NATIONAL POPULATION

2.1 BMI definition
Weight categories are defined using Body Mass Index (BMI), which is calculated by dividing weight (in kilograms) by height (in metres) squared. Table 1 shows BMI values for each weight category. In this JSNA chapter, unless stated otherwise, “obese” means a BMI of 30 or over (and includes those who are morbidly obese with a BMI of 40 or over). Occasionally, figures for the morbidly obese category are shown separately.

Table 1: Body Mass Index (BMI) Classification

<table>
<thead>
<tr>
<th>BMI Classification</th>
<th>BMI (kg/m(^2))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Under 18.5</td>
</tr>
<tr>
<td>Healthy Weight</td>
<td>18.5 to 24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25 to 29.9</td>
</tr>
<tr>
<td>Obese (including morbidly obese)</td>
<td>30 or over</td>
</tr>
<tr>
<td>Morbidly obese</td>
<td>40 or over</td>
</tr>
</tbody>
</table>

2.2 Data Sources
Estimates of obesity/overweight are taken from four main data sources; the Health Survey for England (HSE), the Public Health Outcomes Framework (PHOF; DH, 2012), the Warrington Health and Wellbeing (H&WB) Survey 2013 (WBC, 2013), and the Quality Outcomes Framework (QOF 2013/14) of patients registered with Warrington GP practices. These all give different estimates of overweight/obesity, and figures are not directly comparable to each other due to the different data sources and different data collection and analysis methodologies. Table 2 illustrates the variation in obesity estimates from different sources.

- **Health Survey for England** is conducted annually, and is available at a national level but not at Local Authority. Survey participants are aged 16 and over. Measurements of actual height, weight and waist circumference are taken by an interviewer (i.e. this data is not self-reported). In the 2011 survey, in order to compare actual weights/heights and self-reported weights/heights, the HSE participants were asked to provide their weight and height, as well as being accurately weighed and measured by an interviewer. The HSCIC report (HSCIC, 2012, p9) states that “self-reported estimates of height and weight were often inaccurate, with both sexes tending to over-estimate their height and under-estimate their weight; men particularly tended to over-estimate height and women to under-estimate their weight. The effect of these inaccurate estimates leads to under-estimation of BMI, and therefore to under-representation of the proportion who are overweight or obese” and that “Using self-reported estimates, 17% of men and 20% of women were obese. Thus there was a difference of 6 percentage points in the proportions who were obese based on self-reported figures rather than interviewer-measured.”

- **Public Health Outcomes Framework (PHOF).** Public Health England (PHE) monitors many health-related indicators, including excess weight in adults (aged 16+), at a local
authority level in the Public Health Outcomes Framework (DH, 2012b). The data has been collected via questions in the Active People Survey by Sport England since January 2012.

- **Quality Outcomes Framework (QOF)** data is available at both national and local levels. As part of their contract, GP practices reported prevalence of a number of health conditions, including obesity in patients aged 16 and over. Recording of obesity prevalence is not complete on GP records as not all patients registered at each GP are weighed and measured routinely, and so prevalence estimates are much lower than estimates from surveys. (N.B. The GP registered population is not the same as the resident population because some Warrington residents are registered with non-Warrington GP practices, and some non-Warrington residents are registered with Warrington GP practices).

- **Warrington Health and Wellbeing (H&WB) Survey** (WBC, 2013) is available for Warrington only, and is the only data source that can be analysed at a sub-Warrington level in order to look at differences between sub-groups of the Warrington population. However, there is no direct national comparator. A comprehensive, large scale survey of Warrington residents aged 18 and over was undertaken early in 2013 to update information from previous local lifestyle surveys done in 2001 and 2006. The survey collected information on a wide range of factors that impact on an individual's health and wellbeing. Data was self-reported, i.e. respondents were not weighed and measured; they supplied their height and weight, from which BMI and weight category were calculated.

**Table 2: Illustration of the range of estimates of overweight/obesity prevalence for men and women in Warrington and England**

(No single estimate is “correct” – they are all calculated using different methodologies and have different limitations. Estimates from different data sources cannot be directly compared. Estimates from the SAME data source can be directly compared. Some data sources cover different time periods.)

<table>
<thead>
<tr>
<th>Data Source</th>
<th>OBESITY PREVALENCE</th>
<th>ALL EXCESS WEIGHT (OVERWEIGHT/OBESE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Warrington</td>
<td>England</td>
</tr>
<tr>
<td>Health Survey for England 2011 (measured by interviewer)</td>
<td>16+</td>
<td>n/a</td>
</tr>
<tr>
<td>Health Survey for England 2011 (self-reported by participant)</td>
<td>16+</td>
<td>n/a</td>
</tr>
<tr>
<td>Public Health Outcomes Framework (PHOF) 2012/13</td>
<td>16+</td>
<td>n/a</td>
</tr>
<tr>
<td>Quality Outcomes Framework (QOF: GP recorded) 2013/14</td>
<td>17+</td>
<td>n/a</td>
</tr>
<tr>
<td>Warrington Health and Wellbeing (H&amp;WB) Survey 2013</td>
<td>18+</td>
<td>19.0%</td>
</tr>
<tr>
<td>Health Survey for England 2011 (measured by interviewer)</td>
<td>16+</td>
<td>n/a</td>
</tr>
<tr>
<td>Health Survey for England 2011 (self-reported by participant)</td>
<td>16+</td>
<td>n/a</td>
</tr>
<tr>
<td>Public Health Outcomes Framework (PHOF) 2012/13</td>
<td>16+</td>
<td>n/a</td>
</tr>
<tr>
<td>Quality Outcomes Framework (QOF) 2013/14</td>
<td>17+</td>
<td>n/a</td>
</tr>
<tr>
<td>Warrington Health and Wellbeing (H&amp;WB) Survey 2013</td>
<td>18+</td>
<td>62.4%</td>
</tr>
</tbody>
</table>
2.3 Trend of National Prevalence of Overweight and Obesity

Obesity prevalence in England has more than doubled in the last 25 years. According to Health Survey for England (HSE) data for 2013, in England, the proportion of adults (aged 16 and over) of a healthy weight decreased between 1993 and 2013, from 41% to 31% among men and from 49% to 41% among women. There was a corresponding rise in obesity from 13% to 26% in men and 16% to 24% in women. The proportion of the population who are overweight has remained relatively stable during this time, suggesting that roughly the same number of people have moved from the normal to the overweight category as have moved from the overweight to the obese category.

The increase has not been steady (see chart 1); in adults overall, it increased sharply from 14.9% in 1993 to 22.5% 2002, but then showed a much more gradual increase from 22.6% in 2003 to 24.9% in 2013.

Chart 1: Trend of Overweight/Obesity Prevalence
The percentage of morbidly obese (a BMI of 40 or more) women has been consistently higher than men; in men estimates have gradually but steadily increased from 0.2% in 1993 to 1.6% in 2013; in women, it gradually increased from 1.4% in 1993 to 3.9% in 2013 (see Table 3).

Overall, HSE data 2013 suggests that in England, 37.2% of people aged 16 and over were overweight, 22.2% were obese (excluding morbidly obese), and 2.7% were morbidly obese (see Table 3).

### Table 3: BMI Distribution for Adults in England (HSE, 2013)

<table>
<thead>
<tr>
<th>BMI Classification</th>
<th>BMI (kg/m²)</th>
<th>Men</th>
<th>Women</th>
<th>All adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>Under 18.5</td>
<td>1.7%</td>
<td>2.1%</td>
<td>1.9%</td>
</tr>
<tr>
<td>Healthy Weight</td>
<td>18.5 to 24.9</td>
<td>31.2%</td>
<td>40.8%</td>
<td>36.0%</td>
</tr>
<tr>
<td>Overweight</td>
<td>25 to 29.9</td>
<td>41.1%</td>
<td>33.3%</td>
<td>37.2%</td>
</tr>
<tr>
<td>Obese (including morbidly obese)</td>
<td>30 or over</td>
<td>26.0%</td>
<td>23.8%</td>
<td>24.9%</td>
</tr>
<tr>
<td>Morbidly obese</td>
<td>40 or over</td>
<td>1.6%</td>
<td>3.9%</td>
<td>2.7%</td>
</tr>
<tr>
<td>All excess weight (overweight and obese)</td>
<td>25 or over</td>
<td>67.1%</td>
<td>57.2%</td>
<td>62.1%</td>
</tr>
</tbody>
</table>

*Data Source: Health Survey for England, 2013*

Prevalence rates differ for different population sub-groups, as described below.

#### 2.4 Differences between men and women, and between age-bands

In 2013, there was a higher proportion of men (24.4%) than women (19.9%) in the obese (excluding morbidly obese) category, and a much higher proportion of men (41.1%) than women (33.3%) in the overweight category. However, a higher proportion of women (3.9%) than men (1.6%) are morbidly obese. Also, a higher proportion of women (2.1%) than men (1.7%) are classified as underweight.

The previous chart (trend chart 1) shows a consistently slightly higher proportion of obese (including morbidly obese) women than men, and a consistently much higher proportion of men than women in the overweight category.

HSE 3-year pooled data for 2011-2013, analysed by PHE, shows that obesity prevalence varies by age and sex (chart 2); in women, it increases with age from 16 to 74, but then decreases in those aged 75+. In men, it peaked in the 45-54 age-band at 32.6%, whereas in women it peaked in the 65-74 age-band at 32.4%. Trend data since 1993 has shown an upward shift across all age groups.
For people classed as obese, the risks to health increase greatly as BMI increases. Table 4 shows the proportion of morbidly obese (BMI of 40 or more) men and women. In all age-bands, a higher proportion of women than men are morbidly obese.

**Table 4: Proportion of Morbidly Obese Men and Women by Age-band, 2013**

<table>
<thead>
<tr>
<th>Age-band</th>
<th>% Morbidly Obese, HSE 2013</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(BMI of 40 or more)</td>
</tr>
<tr>
<td>16 - 24</td>
<td>1.1%</td>
</tr>
<tr>
<td>25 - 34</td>
<td>1.5%</td>
</tr>
<tr>
<td>35 - 44</td>
<td>1.9%</td>
</tr>
<tr>
<td>45 - 54</td>
<td>2.2%</td>
</tr>
<tr>
<td>55 - 64</td>
<td>1.8%</td>
</tr>
<tr>
<td>65 - 74</td>
<td>1.4%</td>
</tr>
<tr>
<td>75 and over</td>
<td>0.5%</td>
</tr>
<tr>
<td>All ages</td>
<td>1.6%</td>
</tr>
</tbody>
</table>

Data source: HSE 2013
2.5) Deprivation and Social Class Differences

Public Health England (PHE, 2014a) identified that nationally, in women there are highly significant differences between levels of deprivation, with obesity prevalence increasing steeply as deprivation levels increase. In men, differences are not statistically significant. There is a similar trend when differences between social classes are examined.

PHE analysis of HSE national data shows that obesity prevalence in both men and women, in all social classes has risen between 1994 and 2013 (see chart 3). For both men and women, prevalence is consistently lowest in the professional social class (NB the dip in prevalence in women in this group between 2001 and 2006 may be due to the small sample sizes of women in this group in those years). In men, prevalence is consistently highest in the skilled manual social class, whereas in women, it is consistently highest in the unskilled manual social class.

In women, there is a very wide spread in prevalence between social classes; in 2013, from 15% in the professional class to 35% in unskilled manual class. In men, the spread is much narrower; in 2013, from 21% in the professional class to 31% in the skilled manual class.

![Chart 3: Trend in Obesity Prevalence by Social Class](image)

2.6) Parental Obesity

There is an increased risk of children being overweight or obesity where one or both parents are obese. One study (McLoone et al, 2012) of children aged 2 to 15, found that 26% of children with at least one obese parent were obese, compared to 12% of children with at least one overweight (but not obese) parent, and 12% of children whose parents were of a healthy weight (or underweight). (If BMI was known for both parents, then the highest BMI was used to categorise parental BMI). Parents and carers have huge influence over their children’s weight, diet and physical activity. Obesity during pregnancy increases the health risks for the mother and child during and after pregnancy. These points, along with information relating to weight management in children, are discussed in more depth in the Children and Young People’s Healthy Weight and the Children 0-5 Chapters.
2.7) Ethnicity
The National Obesity Observatory publication *Obesity and ethnicity* (NOO, 2011a) highlights the large gaps in knowledge around excess weight, and the differing associated health problems in different ethnic groups. It summarises information on prevalence in different ethnic groups and states that:

- There is no straightforward relationship between obesity and ethnicity, with a complex interplay of factors affecting health in minority ethnic communities in the UK.
- There is little nationally representative data on obesity prevalence in adults from minority ethnic groups in the UK.
- There is continuing debate about the validity of using current definitions of obesity for non-white ethnic groups, for both adults and children. Different ethnic groups are associated with a range of different body shapes, and different physiological responses to fat storage. Revised BMI thresholds and waist circumference measures have been recommended for South Asian populations who are at risk of chronic diseases and mortality at lower levels than European populations. The Chinese population has been highlighted at particular risk with elevated blood pressure levels at significantly lower BMI values compared to European populations.
- The publication gathers information on 3 measures of excess weight (BMI, waist circumference and waist to hip ratio), and there is wide variation for each of the measures between ethnic groups, and between men and women in each group.
- For children, the picture is more complicated than it is for adults. There is not a worldwide-accepted definition of obesity for children and there are no ethnically adapted definitions. As with adults, child obesity prevalence has been shown to vary substantially between ethnic groups.
- Health behaviours, both across and within minority ethnic groups within the UK, vary widely according to different religious, cultural and socioeconomic factors, as well as geography.
- Migration, racism, discrimination, differences in culture and lifestyles, biological susceptibility, and poor delivery and take-up of health care, all impact on the health of minority ethnic groups in the UK. These groups are also influenced by the same barriers to engaging in a healthy lifestyle as the White population.

Age-standardised Health Survey for England data for 2006-2010 has been analysed by Public Health England (PHE, 2014a) and suggests very high obesity prevalence in Black African women (31.6%), Pakistani women (26.2%) and Black Caribbean women (25.5%). In men, there is much less variation between ethnic groups. However, these estimates are based on the same definitions of obesity for all ethnic groups, which as described above is not necessarily appropriate.

2.8) Obesity and Health Risks
There is substantial evidence to show that adult obesity has a major impact on health and can lead to a number of both chronic and severe medical problems. BMI does not distinguish between mass due to body fat and mass due to muscular physique. Nor does it take account of the distribution of fat. Waist circumference and waist to hip ratio (WHR) are other possible measures to help identify those with a health risk from being overweight.

For people classed as obese, the risks to health increase greatly as BMI increases. NICE clinical guidelines (NICE, 2006) highlight the impact of excess weight on the risk of developing other long-term health problems such as coronary heart disease, Type 2 diabetes, osteoarthritis and some cancers. These guidelines give an assessment of the health risk on a combination of
BMI category and waist circumference, as shown in table 5 (HSCIC, 2014b). In 2013 HSE data, 34% of men and 44% of women had a very high waist circumference (defined to be more than 102cm for men and more than 88cm for women).

<table>
<thead>
<tr>
<th>BMI classification</th>
<th>BMI (kg/m²)</th>
<th>Low (Men less than 94cm; women less than 80cm)</th>
<th>High (Men 94-102cm; women 80-88cm)</th>
<th>Very high (Men more than 102cm; women more than 88cm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal weight</td>
<td>18.5 to less than 25</td>
<td>No increased risk</td>
<td>No increased risk</td>
<td>No increased risk</td>
</tr>
<tr>
<td>Overweight</td>
<td>25 to less than 30</td>
<td>No increased risk</td>
<td>Increased risk</td>
<td>High risk</td>
</tr>
<tr>
<td>Obesity I</td>
<td>30 to less than 35</td>
<td>Increased risk</td>
<td>High risk</td>
<td>Very high risk</td>
</tr>
<tr>
<td>Obesity II</td>
<td>35 to less than 40</td>
<td>Very high risk</td>
<td>Very high risk</td>
<td>Very high risk</td>
</tr>
<tr>
<td>Obesity III</td>
<td>40 or more</td>
<td>Very high risk</td>
<td>Very high risk</td>
<td>Very high risk</td>
</tr>
</tbody>
</table>

Combining BMI category and waist circumference category, 2013 HSE data suggests that 23% of men and 23% of women are at very high risk, and a further 13% of men and 18% of women are at high risk (see table 6).

<table>
<thead>
<tr>
<th>No increased risk</th>
<th>Men</th>
<th>Women</th>
<th>All</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>44%</td>
<td>42%</td>
<td>43%</td>
</tr>
<tr>
<td>Increased risk</td>
<td>18%</td>
<td>14%</td>
<td>16%</td>
</tr>
<tr>
<td>High risk</td>
<td>13%</td>
<td>18%</td>
<td>16%</td>
</tr>
<tr>
<td>Very high risk</td>
<td>23%</td>
<td>23%</td>
<td>23%</td>
</tr>
</tbody>
</table>

Table 6: Health risk using NICE classifications of BMI category and waist circumference

Data source: Health Survey for England 2013

The HSCIC publication “Statistics on Obesity, Physical Activity and Diet” (HSCIC, 2015), lists “the extent to which obesity increases the risks of developing a number of diseases relative to the non-obese population, e.g. it is estimated that an obese woman is almost 13 times more likely to develop type 2 diabetes than a woman who is not obese. These relative risks are based on a comprehensive review of international literature carried out by the National Audit Office to provide the best estimates that could be applied to England” (table 7). NB The National Audit Office report was published in 2001, but there is little, more recent, similar information collated.

<table>
<thead>
<tr>
<th>Type 2 diabetes</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>2.6</td>
<td>4.2</td>
</tr>
<tr>
<td>Myocardial infarction</td>
<td>1.5</td>
<td>3.2</td>
</tr>
<tr>
<td>Cancer of the colon</td>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>Angina</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Gall bladder diseases</td>
<td>1.8</td>
<td>1.8</td>
</tr>
<tr>
<td>Ovarian cancer</td>
<td>-</td>
<td>1.7</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>1.9</td>
<td>1.4</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.3</td>
<td>1.3</td>
</tr>
</tbody>
</table>

Table 7: Relative Risk Factors of Obese People (Compared to Non-obese People)
2.9) Life Expectancy and Long-term Conditions Linked to Obesity

**Life Expectancy:** An analysis of a number of international studies, reported in the Lancet (Prospective Studies Collaboration, 2009), found that BMI is a strong predictor of life expectancy among adults. Overall, moderate obesity (BMI 30-35) was found to reduce life expectancy by an average of three years, while morbid obesity (BMI 40-50) reduces life expectancy by eight to ten years. This eight to ten year loss of life is equivalent to the effects of lifelong smoking.

**Type 2 Diabetes:** Being overweight or obese is the main modifiable risk factor for type 2 diabetes. The Diabetes UK report (Diabetes UK, 2012, p9) states that “Obesity is the most potent risk factor for Type 2 diabetes. It accounts for 80–85 per cent of the overall risk of developing Type 2 diabetes and underlies the current global spread of the condition.” Figures available from the Health and Social Care Information Centre (HSCIC, 2008) estimate that 10% of the obese population, and 5% of the overweight population, have diagnosed diabetes. National Diabetes Audit (NDA) data suggests that in 2009/10, of adults aged 16-54 with Type 2 diabetes, only 10% were of a healthy weight or underweight, 27% were overweight, and 63% were obese (PHE, 2014b).

The Yorkshire and Humberside Public Health Observatory (YHPHO, 2012) have produced a diabetes prevalence model, which estimates diabetes prevalence (both diagnosed and undiagnosed) by local authority and by clinical commissioning group (CCG), by using the distribution of BMI in 2010 Health Survey for England data. It also shows the potential impact of increasing prevalence of overweight and obesity on diabetes prevalence.

**Circulatory Diseases, including Hypertension (High Blood Pressure):** Being overweight or obese increases the risk of hypertension (high blood pressure), which is itself a risk factor for coronary heart disease and stroke and can contribute to other conditions such as renal failure. Analysis of 2013 HSE data (HSCIC, 2015) found that 41% of obese men had high blood pressure compared to 30% of overweight men and 17% of men of a healthy weight; the equivalent figures for women were 33%, 24% and 19%. The risk of coronary heart disease (including heart attacks and heart failure) and stroke are both substantially increased. Risks of deep vein thrombosis and pulmonary embolism are also increased.

**Metabolic Syndrome** is a combination of disorders including high blood glucose, high blood pressure and high cholesterol levels. It is more common in obese individuals and is associated with significant risks of coronary heart disease and type 2 diabetes.

**Osteoarthritis and Musculoskeletal System:** Raised body weight puts strain on the body's joints, especially the knees, increasing the risk of osteoarthritis (degeneration of cartilage and underlying bone within a joint). There is also an increased risk of lower back pain.

**Cancer:** The risk of several cancers is higher in obese people, including endometrial, breast and colon cancers.

**Respiratory Effects:** Overweight and obese people are at increased risk of sleep apnoea (interruptions to breathing while asleep) and other respiratory problems, such as asthma.

**Reproductive and Urological Problems:** Obese women are at greater risk of menstrual abnormalities, polycystic ovarian syndrome and infertility. Obese men are at a higher risk of erectile dysfunction and infertility. Maternal obesity is associated with health risks for the mother and the child, both during and after pregnancy.

**Mental Health and Social Problems:** Overweight and obese people may suffer from stress, low self-esteem, social disadvantage, depression and reduced libido.
The British Psychological Society Working Group on Obesity suggests the following (BPS, 2011, p67): “What is it that we have not understood about people’s eating behaviour that makes it so very difficult to achieve lasting weight loss? Life events and their emotional consequences often lead to abnormal food use .... a large number of obese people persistently use food for emotional regulation with the result that they become obese, and since it is part of their continuing survival strategy they will not surrender their eating behaviour until or unless they find some other or better way of managing their feelings....It is unlikely that all obese people are the same, psychologically speaking, or that all obese people will respond to a single approach.” and that “changing eating behaviour, for many people, is a psychologically and emotionally far more complex task than has so far been recognised.” Cognitive behaviour therapy (CBT) is a requirement of the multi-disciplinary approach at tier 3 level of weight services which are accessed when a person is of a weight which is deemed necessary for clinical intervention. Tier 3 also acts as an assessment for those people considering bariatric surgery, though they may be assessed as unsuitable for surgery at this stage. However, people will only be referred into tier 3 level services once their BMI has reached a certain threshold; at the time of writing, NICE clinical guidelines (NICE, 2014b) are a BMI of 40 kg/m² or more, or 35-40 kg/m² if there is other significant disease, for example, type 2 diabetes or high blood pressure, that could be improved if they lost weight. Future commissioning decisions should consider including CBT at tier 2 service level, in addition to the usual advice and interventions regarding diet and physical activity, as a way of preventing an individual’s weight issues escalating to the stage at which they need clinical intervention.

3) THE LEVEL OF NEED IN THE LOCAL POPULATION

3.1) Measuring Overweight and Obesity in Warrington

Estimates of obesity/overweight prevalence in Warrington are taken from three main data sources; the Public Health Outcomes Framework (PHOF), the Warrington Health and Wellbeing (H&WB) Survey 2013 (WBC, 2013), and the Quality Outcomes Framework (QOF) of patients registered with Warrington GP practices. These all give different estimates of overweight/obesity, and figures are not directly comparable to each other due to the different data sources and different data collection and analysis methodologies. Table 2 summarises the different obesity estimates.

3.1.1) Public Health Outcomes Framework (PHOF)

Public Health England (PHE) monitors many health-related indicators. PHOF indicator 2.12, excess weight in adults, is based on adjusted, self-reported height and weight measurements of adults (aged 16 years and over) which have been collected via questions in the Active People Survey by Sport England since January 2012. For 2012, this indicator was 70.0% in Warrington, higher than the North West (66.0%), and statistically significantly higher than England (63.8%). Applied to mid-2013 population estimates of adults aged 16+, a prevalence of 70.0% suggests that there could be approximately 116,000 obese adults aged 16+ in Warrington. (NB this estimate is much higher than that from the locally conducted Warrington Health and Wellbeing Survey – 88,500 adults aged 18+ (see section 3.1.3 below).

PHOF does not consider the obese and overweight categories separately. However, the Active People Survey estimates that obesity prevalence in Warrington (21.7%) is lower than England (23.0%), but the proportion of overweight adults in Warrington (48.3%) is higher than England (40.8%).
3.1.2) GP Recorded Obesity and Prevalence of Selected Conditions

Prevalence of a number of these health conditions are reported by GP practices as part of their contract. Recording of obesity prevalence is not complete on GP records as not all patients registered at each GP are weighed and measured routinely. In 2013/14, there were 15,409 patients on the obesity registers of the 26 GP practices in Warrington. This was 8.97% of the total population (aged 16 and over), and was lower than 9.42% across England. (NB The data is based on GP registered population, which is different to the resident population because some Warrington residents are registered with non-Warrington GP practices, and some non-Warrington residents are registered with Warrington GP practices).

Table 8 presents statistics for Warrington and England from the Primary Care Quality and Outcomes Framework (QOF) data. As described in Section 1, there are a number of adverse health effects associated with obesity. As table 8 indicates, Warrington has a higher reported prevalence of coronary heart disease (CHD) and asthma than England as a whole, but lower diabetes and hypertension. NB Lower QOF prevalence in Warrington than England, of a particular condition, can mean that there is genuinely lower prevalence, or can mean that there is under-reporting in Warrington, i.e. a higher proportion of people with that condition are as yet undiagnosed. Conversely, higher QOF prevalence in Warrington than England can mean there is a genuinely higher prevalence, or can mean that a higher proportion of people in Warrington with the condition have actually been diagnosed with it.

Table 8: Prevalence for Selected Conditions, QOF, 2013/14

<table>
<thead>
<tr>
<th></th>
<th>CHD</th>
<th>Diabetes (patients aged 17+)</th>
<th>Hypertension</th>
<th>Asthma</th>
<th>Heart Failure</th>
<th>Obesity (patients aged 16+)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Warrington</td>
<td>3.74%</td>
<td>6.16%</td>
<td>13.58%</td>
<td>6.10%</td>
<td>0.71%</td>
<td>8.97%</td>
</tr>
<tr>
<td>England</td>
<td>3.29%</td>
<td>6.21%</td>
<td>13.73%</td>
<td>5.93%</td>
<td>0.71%</td>
<td>9.42%</td>
</tr>
</tbody>
</table>

Data Source: HSCIC: Quality and Outcomes Framework (QOF) for April 2013 - March 2014

Yorkshire and Humberside Public Health Observatory (YHPHO) produced projections based on future population estimates, and on Health Survey for England 2010 overweight/obesity estimates, in order to show the potential impact of the increasing prevalence of overweight/obesity on diabetes prevalence. It suggested that if prevalence of overweight/obesity remained at 2010 levels, there would be an estimated 14,300 (7.9%) Warrington residents aged 16+ with diabetes; however, if overweight/obesity prevalence continues to increase, there would be an estimated 15,400 (8.5%) Warrington residents aged 16+ with diabetes.

3.1.3) Adult Overweight and Obesity Estimates from the Warrington Health and Wellbeing (H&WB) Surveys:

A comprehensive, large scale survey of Warrington residents aged 18 and over was undertaken early in 2013 to update information from previous local lifestyle surveys in 2001 and 2006. The survey collected information on a wide range of factors that impact on an individual’s health and wellbeing. Questionnaires were posted to a randomly selected sample of adults (aged 18+) living within the borough boundary. 6,673 valid returns were received in the 2013 survey.

In 2013, a similar proportion of men and women were obese, but a much higher proportion of men were in the overweight category. 43% males were overweight, and a further 19% were obese; 28% of women were overweight and a further 20% obese. Applied to the 2013 population of almost 161,000 adults aged 18+, these estimates suggest that in Warrington there were over 57,000 overweight adults and a further 31,000 who were obese, i.e. 88,000 with excess weight. (NB This is much lower than the PHOF estimate of 116,000 overweight/obese adults aged 16+ – see section 3.1.1 above).
It is important to note that respondents were not weighed or measured, i.e. height and weight were self-reported. Evidence in the 2011 Health Survey for England report (HSCIC, 2012, p9) showed that respondents tend to overestimate their height and underestimate their weight, resulting in a lower BMI; this means that prevalence calculated from self-reported data is lower than that calculated from interviewer-measured data. It is therefore likely that the Warrington estimates from the H&WB survey will be underestimates of true prevalence. However, the data from the Warrington H&WB survey is the only data source available that can be analysed at a sub-Warrington level to investigate differences between sub-groups of the Warrington population, e.g. men/women, or by age, ward, or level of deprivation. Even if rates are underestimates of true prevalence, the patterns between different sub-groups are likely to be genuine. (NB The results of the survey are not directly comparable to the Public Health Outcomes Framework (PHOF) data, due to different data sources, slightly different age-group of respondents, and different data collection and analysis methodologies. In fact prevalence rates from the H&WB survey and the PHOF data are very different; the PHOF estimate is 70% overweight/obese adults in Warrington, whereas the H&WB survey estimate is 55.1%).

3.1.4 Obesity in Warrington by Age, Sex and Socio-economic Deprivation

Deprivation is measured using the Index of Multiple Deprivation (IMD) 2010. Deprivation covers a broad range of issues - this index uses data on income, employment, health and disability, education and skills, barriers to housing and services, crime, and living environment to calculate an overall deprivation score. Lower Super Output Areas (LSOAs) are the lowest geographical units for which deprivation indices are calculated. All LSOAs in England are ordered by IMD score, and then split into 5 equal sized groups (called quintiles), or into 10 equal sized groups (called deciles). There are 127 LSOAs within Warrington, and these LSOAs ‘nest’ within Warrington’s 22 electoral wards. These 127 LSOAs are grouped according to which national quintile or decile they are in. See the JSNA chapter on socio-economic deprivation for more detail (WBC, 2012).

Map 1 shows levels of deprivation across Warrington (using the Index of Multiple Deprivation 2010). The most deprived areas are shaded dark blue, and the least deprived dark yellow. The most deprived areas tend to be in the centre of Warrington borough, plus the Oakwood area located in Birchwood ward.
Map 1: Warrington by Index of Multiple Deprivation (IMD2010)

Data source: Department of Communities and Local Government (DCLG), Indices of Deprivation 2010, © Crown Copyright.
Wide variation was apparent within Warrington, which followed the pattern of socio-economic deprivation, with higher obesity prevalence in the more deprived areas (see table 9). There were also large differences between men and women and between age-bands (see table 10).

**Overweight:** A significantly higher proportion of men were overweight; 43.3% compared to 28.2% of women. In women, overweight prevalence was highest amongst those aged 65+ (35.3%); in men, the 40-64 age-band (46.9%) and the 65+ age-band (45.9%) both had very high prevalence. Overweight prevalence did not show the usual correlation with deprivation (highest levels were seen in Quintiles 2 and 3).

**Obesity:** Obesity prevalence increased from 18.2% in 2006 to 19.3% in 2013. It was very similar in men (19.0%) and in women (19.6%). By age-band, obesity prevalence was highest in people aged 40-64 (22.6%) and those aged 65+ (20.7%), and lowest amongst those aged 18-39 (14.3%). In each age-band, prevalence in men and women was very similar. Unlike overweight, obesity prevalence was strongly correlated with deprivation (see table 9 and chart 4). Prevalence in Quintile 1 (most deprived) was almost 26%, compared to 15% in Quintile 5 (least deprived). In particular, obesity prevalence in women was almost double in the most deprived quintile (25%), compared to the least deprived (14%).

**All Excess Weight:** Results from the surveys estimated that the percentage of overweight and obese residents (BMI of over 25) increased from 53.2% in 2006, to 55.1% in 2013. A prevalence of 55.1%, applied to the 2013 Warrington borough population estimate (ONS) of approximately 166,000 adults aged 16 and over, gives an estimate of around 90,000 overweight or obese adults at that point. A higher proportion of men were overweight or obese, (62.4% compared to 47.8% of women), with highest prevalence amongst men in the 40-64 age-band (almost 70%). There was a distinction between the 60% most deprived areas (quintiles 1, 2 and 3) which had a substantially higher proportion of adults with excess weight, than the 40% least deprived areas (quintiles 4 and 5).

---

**Chart 4: Obesity Prevalence in Men and Women, by Socio-economic Deprivation**

(Data source: Warrington Health & Wellbeing (Lifestyle) Survey 2013)
## Table 9: Warrington Health and Wellbeing Survey 2013 by Sex and Deprivation Quintile

<table>
<thead>
<tr>
<th></th>
<th>Deprivation Quintile</th>
<th>Total Valid Answers</th>
<th>Weight Category</th>
<th>Statistical Significance</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Under weight</td>
<td>Healthy weight</td>
<td>Overweight</td>
</tr>
<tr>
<td>Women</td>
<td>Q1 (most)</td>
<td>522</td>
<td>2%</td>
<td>48%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>Q2</td>
<td>518</td>
<td>2%</td>
<td>47%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Q3</td>
<td>383</td>
<td>1%</td>
<td>48%</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Q4</td>
<td>746</td>
<td>1%</td>
<td>51%</td>
<td>30%</td>
</tr>
<tr>
<td></td>
<td>Q5 (least)</td>
<td>1007</td>
<td>2%</td>
<td>60%</td>
<td>27%</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>3176</td>
<td>2%</td>
<td>52%</td>
<td>28%</td>
</tr>
<tr>
<td></td>
<td>Q1 (most)</td>
<td>530</td>
<td>2%</td>
<td>48%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Q2</td>
<td>524</td>
<td>2%</td>
<td>47%</td>
<td>48%</td>
</tr>
<tr>
<td></td>
<td>Q3</td>
<td>383</td>
<td>0%</td>
<td>48%</td>
<td>48%</td>
</tr>
<tr>
<td></td>
<td>Q4</td>
<td>715</td>
<td>1%</td>
<td>51%</td>
<td>40%</td>
</tr>
<tr>
<td></td>
<td>Q5 (least)</td>
<td>999</td>
<td>1%</td>
<td>60%</td>
<td>44%</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>3151</td>
<td>1%</td>
<td>52%</td>
<td>43%</td>
</tr>
<tr>
<td>Men</td>
<td>Q1 (most)</td>
<td>1053</td>
<td>2%</td>
<td>48%</td>
<td>32%</td>
</tr>
<tr>
<td></td>
<td>Q2</td>
<td>1042</td>
<td>2%</td>
<td>47%</td>
<td>38%</td>
</tr>
<tr>
<td></td>
<td>Q3</td>
<td>766</td>
<td>1%</td>
<td>48%</td>
<td>39%</td>
</tr>
<tr>
<td></td>
<td>Q4</td>
<td>1460</td>
<td>1%</td>
<td>51%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>Q5 (least)</td>
<td>2006</td>
<td>2%</td>
<td>60%</td>
<td>35%</td>
</tr>
<tr>
<td></td>
<td>All</td>
<td>6327</td>
<td>2%</td>
<td>52%</td>
<td>36%</td>
</tr>
</tbody>
</table>
Table 10: Warrington Health and Wellbeing Survey 2013 by Sex and Age

<table>
<thead>
<tr>
<th>Age-band</th>
<th>Total Valid Answers</th>
<th>Weight Category</th>
<th>Statistical Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Obesity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Under weight</td>
<td>Healthy weight</td>
</tr>
<tr>
<td>Women</td>
<td></td>
<td>15%</td>
<td>36%</td>
</tr>
<tr>
<td>18-39</td>
<td>1084</td>
<td>3%</td>
<td>61%</td>
</tr>
<tr>
<td>40-64</td>
<td>1375</td>
<td>1%</td>
<td>47%</td>
</tr>
<tr>
<td>65+</td>
<td>717</td>
<td>1%</td>
<td>42%</td>
</tr>
<tr>
<td>All</td>
<td>3176</td>
<td>2%</td>
<td>50%</td>
</tr>
<tr>
<td>Men</td>
<td></td>
<td>15%</td>
<td>36%</td>
</tr>
<tr>
<td>18-39</td>
<td>1110</td>
<td>2%</td>
<td>47%</td>
</tr>
<tr>
<td>40-64</td>
<td>1442</td>
<td>1%</td>
<td>29%</td>
</tr>
<tr>
<td>65+</td>
<td>600</td>
<td>1%</td>
<td>33%</td>
</tr>
<tr>
<td>All</td>
<td>3151</td>
<td>1%</td>
<td>36%</td>
</tr>
<tr>
<td>All People</td>
<td></td>
<td>15%</td>
<td>36%</td>
</tr>
<tr>
<td>18-39</td>
<td>2193</td>
<td>3%</td>
<td>54%</td>
</tr>
<tr>
<td>40-64</td>
<td>2816</td>
<td>1%</td>
<td>38%</td>
</tr>
<tr>
<td>65+</td>
<td>1317</td>
<td>1%</td>
<td>38%</td>
</tr>
<tr>
<td>All</td>
<td>6327</td>
<td>2%</td>
<td>43%</td>
</tr>
</tbody>
</table>

3.1.5) Ethnicity

There is national evidence that obesity is more prevalent amongst certain ethnic groups (NICE, 2013a; NICE, 2014c; NOO, 2011a). Warrington’s ethnic minority population is relatively small, and although the local Health and Wellbeing survey 2013 contained a question on ethnicity, there were not enough respondents in most ethnic groups to allow reliable robust analysis. However, there is no reason to believe that the variation seen nationally would be any different in Warrington.
3.1.6) Obesity Prevalence by Electoral Ward and Neighbourhood Coordination Area (NCA)

Table 11 shows weight category by ward and Neighbourhood Coordination Area (NCA), with associated statistical confidence intervals. It also shows whether each ward or NCA was significantly higher or lower than Warrington overall for obesity prevalence and for prevalence of overweight/obese combined. Map 2 shows the geographical spread across Warrington of obesity prevalence at ward level. Compared to Warrington overall, Central NCA has significantly higher obesity prevalence (although there was wide variation between the Central wards, from 19% in Fairfield and Howley to 32% in Poplars and Hulme), and South NCA has significantly lower. At an individual ward level, Birchwood and Poplars & Hulme had significantly higher obesity prevalence than Warrington overall; Appleton, Lymm, Stockton Heath, and Culcheth, Glazebury & Croft had significantly lower. NB. Obesity prevalence in Orford ward (24.6%) is not significantly different to Warrington overall. However, it is much higher in women (31.3%) than in men (17.7%); prevalence in Orford women is statistically significantly higher than Warrington overall.

Table 11: Obesity Prevalence by Ward and Neighbourhood Coordination Area
Map 2: Obesity Prevalence by Warrington Ward 2013
(Data source: Warrington Health and Wellbeing Survey)
3.2) Morbidly Obese (a BMI of 40 or more).
As previously described, for people classed as obese, the risks to health increase greatly as BMI increases. Health Survey for England 2013 estimates suggest that in England, 1.6% of men and 3.9% of women aged 16 and over, are morbidly obese. If Warrington has similar rates to England, then applied to 2013 population estimates, there could be an estimated 1,300 morbidly obese men and 3,300 morbidly obese women in Warrington.

3.3) Childhood Obesity Prevalence
Childhood Obesity Prevalence is looked at in greater depth in the Children’s and Young People’s Healthy Weight Chapter. Data suggests that the Warrington figures are lower than the England average. Figures from the National Child Measurement Programme for the academic year 2013/14 show that, in Warrington, 7.8% of Reception (aged 4-5 years) pupils and 16.2% of Year 6 pupils (aged 10-11) in Warrington schools were obese, compared with 9.5% and 19.1% respectively in England.

3.4) Parental Obesity
There is an increased risk of children being overweight or obese where one or both parents are obese. There is no data source at a Warrington level regarding children’s weight and the weight of their parents/carers, other than maternal weight during pregnancy.

3.5) Maternal Obesity in Pregnancy
Obesity in pregnancy can have an adverse effect on pregnancy outcomes for mothers and babies, and increases pressure on, and cost of, services. Obesity, diabetes and pregnancy hypertension are known risk factors for pregnancy complications, including premature delivery and associated neonatal morbidity (Spiegler et al, 2013). Numbers of women reaching maternity services with a high BMI are increasing. NICE guidance (NICE, 2010) states that weight loss programmes are not recommended during pregnancy as they may harm the health of the unborn child, but stresses the importance of helping women to achieve/maintain a healthy weight before and after pregnancy. NICE produced commissioning guidelines for weight management before, during and after pregnancy (NICE, 2011a). For further information see the JSNA Chapter on Children 0-5.

During 2013, 3,408 pregnant women had their Body Mass Index (BMI) recorded at antenatal clinics in Warrington hospital. Of these women, 2,181 provided a valid Warrington postcode (from which level of deprivation in the area of residence could be determined); analysis of data from these 2,181 women showed that:

- 22% were obese and a further 26% were overweight, i.e. 48% were of excess weight.
- Obesity was higher in those who had given birth previously (24.7%) when compared to those who had not (18.3%). Further, as the number of previous births increased, the percentage of obese women also increased. Almost a third (30.7%) of women who had 2 or more previous births were obese.
- The percentage of overweight women did not vary much by deprivation quintile (ranging from 25% to 29%). There were bigger differences between quintiles in the percentage of obese women; 14% in quintile 1 (least deprived) compared to between 20% and 29% in the other quintiles.
- Grouped by the age-bands under-19, 20-24, 25-29, 30-34, 35-39 and 40+, only the under-19 age-band was substantially different. 19% of the under-19s were overweight compared to between 24% and 28% of the 20+ age-bands. 15% of the under-19s were obese compared to between 21% and 26% of the 20+ age-bands. In terms of all excess weight, 35% of the under-19s were overweight/obese; the other age-bands were fairly similar at approximately 50%.
Results from the Warrington Health and Wellbeing survey 2013 (WBC, 2013), a large scale survey of almost 6,700 Warrington residents, estimated that 14.9% of Warrington women aged 18-39 (the age-band that most closely fits women of childbearing age) were obese. However there were differences across Warrington; 21.0% of those living in the most deprived areas (quintile 1) were obese, compared to 7.6% in the least deprived areas (quintile 5).

3.6) Estimates of Health Eating:

The Public Health Outcomes Framework (PHOF) contains 3 indicators regarding healthy diet. They are sourced from the Active People Survey by Sport England, and are not available at a sub-Warrington level. In 2014, for all 3 indicators, Warrington estimates were significantly worse than England.

- PHOF 2.11i: Fruit and Veg '5-a-day'. In Warrington, an estimated 55.1% of people ate at least 5 portions of fruit/veg per day, compared to 56.3% in England. (Across Local Authorities, estimates ranged from 39.8% to 64.5%).
- PHOF 2.11ii: Average portions of fruit eaten. In Warrington, the estimate was 2.48 portions compared to 2.64 in England. (Across Local Authorities, estimates ranged from 2.23 to 2.92).
- PHOF 2.11iii: Average portions of vegetables eaten. In Warrington, the estimate was 2.22 portions compared to 2.36 in England. (Across Local Authorities, estimates ranged from 1.80 to 2.64).

The Warrington Health and Wellbeing Survey 2013 contained questions on fruit and vegetable consumption, takeaway food and convenience foods. This data can be analysed at a sub-Warrington level, e.g. by age, sex and levels of deprivation.

- Overall, 57% reported eating the recommended 5 or more portions of fruit/vegetables. This was higher in women (60%) than men (54%), and was higher in less deprived areas (ranging from 51% in the most deprived quintile to 61% in the least deprived). It increased with age (52% of 18-39 year-olds, 57% of 40-64 year-olds and 64% of those aged 65 and over).
- Men aged 18-39 and 40-64 were significantly less likely than Warrington overall to eat the recommended portions (52%). The most deprived quintiles had significantly lower rates (51% in Quintile 1 and 52% in Quintile 2), and this particularly applied to the younger age-bands.
- Overall, 29% reported eating takeaway food at least once a week. This was much lower in women (23%) than men (35%), and lower in less deprived areas (ranging from 26% in the least deprived quintile to 34% in the most deprived). There were large differences between age-bands, with younger people most likely to have takeaway food at least once a week (38% of 18-39 year-olds, 25% of 40-64 year-olds and 20% of those aged 65 and over). Men aged 18-39 had a very high rate, with 44% having takeaways at least weekly (in particular, men aged 18-39 in the least deprived quintile had the highest rate of all, at 49%).
- Overall, 15% reported eating at least 3 convenience foods in the previous week. This was more than double in men (21%) compared to women (10%). It increased with deprivation, ranging from 12% in the least deprived quintile to 20% in the most deprived. There were very large differences between age-bands, with younger people most likely to have eaten at least 3 convenience foods in the previous week (23% of 18-39 year-olds, 12% of 40-64 year-olds and 8% of those aged 65 and over). Men aged 18-39 had by far the highest rates, with 30.6% eating 3 or more convenience foods per week.
- Combining these 3 diet behaviours, chart 5 shows the proportion of people who reported at least 2 of them. In each age-band, men (were much more likely than women to report 2 or more poor diet behaviours (across all ages, this was 28% of men and 16% of...
women). There were very large differences between age-bands, with younger people much more likely to report 2 or more poor diet behaviours; 31% of 18-39 year-olds, 18% of 40-64 year-olds and only 12% of those aged 65 and over. Of the age/sex sub-groups, the proportions ranged from only 8% of women aged 65+ to 38% in men aged 18-39.

- There is considerable variation across Warrington which follows the pattern of deprivation, with lower consumption of fruit and veg and higher rates takeaway and convenience food consumption in the more deprived areas.

3.7) Physical Activity: The Chief Medical Officer’s (CMO) latest guidance states that adults should aim to be active daily, and that activity should add up to the equivalent of at least 150 minutes of moderate intensity activity, in bouts of 10 minutes or more, over a week. (Moderate intensity activity is defined as any activity that causes you to get warmer and breathe a little harder).

Sedentary behaviour is not simply a lack of physical activity but is a cluster of individual behaviours involving sitting or lying which require very little energy expenditure. Sedentary behaviours include screen-time (TV viewing, computer use), motorised transport, and sitting to read, talk, do homework, or listen to music. Even among individuals who meet current physical activity guidelines, high levels of sedentary behaviour may lead to negative health outcomes.

3.7.1) Public Health Outcomes Framework (PHOF) indicators: Public Health England (PHE) monitors many health-related indicators, including levels of physical activity in adults (aged 16+), at a local authority level (PHOF). The data has been collected via questions in the Active People Survey by Sport England since January 2012, and the latest figures are shown below:

- PHOF 2.13i - percentage of physically active adults is defined as at least 150 minutes of physical activity per week in accordance with the CMO guidelines. The most recent PHOF data (2013) suggests that 54.8% of adults in Warrington were physically active, slightly worse than England (56.0%) but slightly better than the North West (53.5%). These differences were not statistically different.
- PHOF 2.13ii - percentage of physically inactive adults is defined as less than 30 “equivalent” minutes of at least moderate intensity physical activity per week in bouts of 10 minutes or more. The most recent PHOF data (2013) suggests that 27.2% of adults
in Warrington were physically inactive, slightly worse than England (28.3%) but better than the North West (31.3). These differences were not statistically different.

3.7.2 Adult Physical Activity Estimates from the Warrington Health and Wellbeing Survey:

Respondents were asked to quantify the amount of moderate and vigorous physical activity they do in an average week. NB The results of the survey are very different to, and not directly comparable to, the PHOF data above due to different data sources and different data collection and analysis methodologies. However, the data from the Warrington Health and Wellbeing Survey is the only data source available that can be analysed at a sub-Warrington level to look at patterns and variation in different sub-groups of the Warrington population.

Overall, 76% of residents reported doing enough physical activity to achieve the CMO’s recommended guidelines. As may be expected, prevalence decreased with age; 81% of 18-39 years are active compared to 69% of those aged 65+. Men reported being more active than women; 80% of men and 73% of women met the CMO’s recommendations. Level of physical activity was associated with socio-economic deprivation; 70% of residents of Quintile 1 (most deprived) reported meeting CMO guidelines compared to 80% of Quintile 5 (least deprived).

For more detailed information, including reasons that respondents gave for not doing more physical activity, see the physical activity JSNA chapter. More detailed information on physical activity can be found in the Warrington Sport & Physical Activity Profile 2014 (WBC, 2014b).

4) CURRENT SERVICES IN RELATION TO NEED

4.1) Weight Management Service Structure
The following diagram shows the four tiers of weight management services.
4.2) **Tier 1 Weight Management (Warrington Borough Council Public Health)**. Tier 1 services are aimed at all residents, and centres around prevention messages and promoting healthy lifestyle behaviours by influencing choice. The majority of this work is targeted at areas of deprivation and vulnerable groups, via neighbourhood plans and public health targets. There is a focus on expanding this level of intervention with the intention of equipping more people with practical skills to make changes to the way they shop, cook and eat as well as offering free or affordable opportunities for becoming more active. There are three elements to the expansion of this prevention work:

- The local roll-out of the national Change 4 Life programme,
- The local healthy eating and weight management offer at tier 1 has been expanded to include a number of ‘Change 4 Life activity boxes’ which contain resources designed to be used by a professionals in number of job roles who have direct contact with individuals and families in the community. These boxes encourage discussion and participation in a standardised approach with both individuals and group work;
- A community cooking course for families who need more intensive support to plan and prepare healthy meals.

4.3) **Tier 2 - Warrington Healthy Weight Service** Warrington Borough Council currently commissions Livewire to deliver weight loss programmes targeted at those most in need. The team can offer group drop-in and one-to-one weight management sessions throughout Warrington. An advisor will discuss which weight loss solutions work best for an individual’s goal. It offers a supportive and safe approach for clients, and incorporates healthy eating advice, exercise, behavioural techniques and cooking skills over a 12 week programme.

There were 1378 referrals to the weight service between April 2014 and March 2015 (clients can self-refer into the service, or be referred by a health professional). Of the 1378 referrals, 482 (35%) participants completed the course (defined as at least 60% attendance). The Healthy Weight ‘drop in’ activity for the same period was 345 attendances. This completion rate of 35% suggests that the healthy weight service and commissioners need to investigate why clients choose not to complete the course, and to continue to find new ways of engaging with clients to encourage them to complete the course. Of the 482 who did complete the course:

- 36% achieved a weight loss of at least 5% after 6 months.
- 68% reported a positive self-esteem change.
- 83% reported positive diet change score.
- 56 (33%) clients attending the 12 week programme were from the 20% most deprived LSOAs. 37% of these achieved a weight loss of at least 5% 6 months after their start date.

There has also been a pilot programme running at the tier 2 level of provision that offers an intensive exercise programme that incorporates advice about eating and cooking to stay strong and healthy. These groups are single sex sessions of about 30 to 45 people, meeting three times a week at the local rugby stadium. The pilot programme indicated that this was an effective method of engaging and maintaining local people into a weight loss initiative that will work alongside the more traditional model of weight management services.

4.4) **Tier 3 and Tier 4 Services**. From April 2016 Warrington Clinical Commissioning Group (CCG) will be responsible for both tier 3 and 4 services. Public Health and the CCG will work together to agree a weight management service pathway that meets the needs of the local population and ensure effective interventions. A new tier 3 service commissioned by Warrington CCG is planned to commence by November 2015, for a maximum of 35 people per annum. However, data from 2014 showed that 375 people with a BMI of 40 and above (i.e. morbidly
obese) were referred into the tier 2 services with a further 389 people with a BMI between 35 and 40. This would indicate that tier 2 will need to include weight loss options suitable for very obese clients and a review of tier 3 would need to be reviewed after the initial year.

4.5) Warrington Healthy Weight Strategy 2014-18 is Warrington Borough Council’s strategy to address prevention and management of obesity (WBC, 2014a). The strategy is monitored by a Healthy Weight Strategy Group which oversees the two operational groups; one for adults and one for children. All three groups meet quarterly and activity update reports are available from the Public Health Team. The strategy aims to target the life course of children and adults in order to positively influence healthy lifestyles and health inequalities.

4.6) An Active Warrington Strategy (WBC, 2012) has now been extended to run until 2020. The latest version of the strategy is available at: http://www.warrington.gov.uk/download/downloads/id/2054/active_warrington_strategy

4.7) Warrington Wolves Rugby League Club - Healthy Stadia As part of the European Healthy Stadia Network, The Warrington Wolves Rugby League Club recognise the contribution of health promoting policies and practices in influencing the lifestyle behaviours of the local population and as such are key contributors in addressing some of the most prominent Public Health concerns. Working alongside colleagues from local, regional and national agencies a comprehensive programme of match day health campaigns is devised throughout the season specifically targeting supporters from the top 20% most deprived local areas to promote key health improvement services and messages.

4.8) ‘Healthier Together Award’: the Regulation & Protection team’s Food Officer at Warrington Borough Council manages the ‘Healthier Together Award’ for council and privately run child nurseries, to ensure that the meals served to children have balanced nutrition with safe levels of sugar and salt.

4.9) Current services are being developed around weight management care pathways for overweight and obese pregnant mothers, and for obese children and their families. Breastfeeding and maternal health is covered in the Children 0-5 JSNA chapter. There are a number of initiatives linked to healthy weight, for example, healthy eating week, healthy eating campaigns and physical activity, Change for Life, and cook and taste sessions.

5) PROJECTED SERVICE USE AND OUTCOMES

5.1) Projected Trends

Trends from the Warrington Health and Wellbeing Survey cannot be used to calculate robust estimates of future local prevalence, because there are only 3 time periods from which calculate projections (2001, 2006 and 2013). Health Survey for England (HSE) data, available from 1993, can be used to calculate projections of national prevalence. A slowing down in the rate of increase of prevalence was seen around 2001, and a change in methodology in the calculation of prevalence occurred in 2003; therefore projections have been based on data from 2003 – 2012. These projections are based on the assumption that trends over those years will continue at the same rate. (NB Previous national projections were based on the Foresight report (Butland et al, 2007); projections calculated at that time were based on HSE data from 1993 to 2004 and predicted a much steeper increase than projections calculated from more recent data (2003-2011), which shows a less steep slope.)
Chart 6 suggests that obesity prevalence for both men and women will continue to rise, but that the percentage of men and women who are overweight will very slightly decrease. Chart 7 suggests that the percentage of women with excess weight (overweight/obese combined) will continue to slowly rise; for men it will have practically stabilised at around 66%.

Chart 6: Projections of National Estimates of Overweight and Obesity Prevalence

The increasing trends over time in the prevalence of obesity and of morbid obesity will create additional demands on weight management services including bariatric surgery.
6) EVIDENCE OF WHAT WORKS

The National Obesity Observatory website is regularly updated with relevant information, research and evidence, national reports and policies, and various other resources and tools.

6.1) National and Regional Strategies and Reports

Public Health campaigns to affect individuals’ lifestyle behaviour can never match how much the food industry spends on advertising. However, population-level interventions, including both national legislation and local strategies, e.g. regulating the pricing and availability of unhealthy foods, and the redesigning of environments to promote physical activity, can have a major effect. In its inquiry on the impact of physical activity and diet on health in 2014, the House of Commons Select Committee for Health (HCSCH, 2015) summarised the importance of population-level measures to support individual behaviour-change: “Diet, obesity, and physical activity all have important impacts on health. For too long however, physical activity has been seen merely in the light of its benefits in tackling obesity, but there is compelling evidence that physical activity in its own right has huge health benefits totally independent of a person’s weight. The importance of this……needs to be clearly communicated. Interventions focused on encouraging individuals to change their behaviour with regard to diet and physical activity need to be underpinned by broader, population-level measures. Whilst both are important, population-level interventions have the advantage of impacting on far greater numbers than could ever benefit from individual interventions. The Committee recommends that the next Government prioritises prevention, health promotion and early intervention to tackle the health inequalities and avoidable harm resulting from poor diet and physical inactivity. Tackling these problems will require action at all levels and must also be core business for the NHS and local authorities. The Committee regards it as inexplicable and unacceptable that the NHS is now spending more on bariatric surgery for obesity than on a national roll-out of intensive lifestyle intervention programmes that were first shown to cut obesity and prevent diabetes over a decade ago. All tiers of weight management services should be universally available and individual clinicians should use every opportunity to help their patients to recognise and address the problems caused by obesity and poor diet, and to promote the benefits of physical activity.”

Obesity was identified by the Department of Health as a key priority, and Healthy Weight, Healthy Lives: a cross-government strategy for England (DH, 2008) set out a plan for action to achieve healthy weight, including prevention, identification, management and treatment of obesity. Guidance included promised action on advertising and promotion of foods to children, simplified food labelling, obesity education and prevention, and nutritional standards in schools, hospitals and the workplace. Interventions at a local level need to also incorporate direction from the Marmot Review (2010), which suggests that actions need to focus on the wider social determinants of health. The review also calls for a reduction in the steepness of the gradient in health inequalities associated with socio-economic deprivation (i.e. the inequality in health between more and less deprived areas).

In recognition of the importance of tackling obesity, ‘Healthy Lives, Healthy People; a call to action on obesity in England’ (DH, 2011b) contained the following key elements:

- A focus on a lifecourse approach that tackles obesity in all age groups.
- Treatment for those who are already overweight or obese will be increasingly important alongside preventative action.
- In line with the Foresight Report (Butland et al, 2007), that a range of partners have responsibility to help individuals and address the many determinant factors in obesity.
- Increasing physical activity is important but, for most people who are overweight or obese, eating less is key to weight loss.
• A new level of ambition for children; a sustained downward trend in levels of excess weight in children by 2020. This ambition is underpinned by the obesity indicators in the Public Health Outcomes Framework (DH, 2012b).

Public Health England, in conjunction with the Local Government Association (LGA), has produced briefing papers aimed at local authorities, on topics including regulating the growth of fast food outlets (PHE, 2014c) and increasing physical activity and active travel (PHE, 2013b). Data by local authority shows a strong association with deprivation, with more deprived areas having a higher proportion of fast food outlets per head of population than others (PHE, 2014c).

A report by the Academy of Medical Royal Colleges (AOMRC, 2013) suggests 10 key steps for tackling the obesity crisis. These steps fall into three areas:

• Education of healthcare professionals, especially those who have most influence on patient behaviour, to have more confidence in discussing weight issues; increase provision of weight management programmes; improve nutritional standards of hospital food; and increase support for new parents regarding their child’s diet.

• Change the ‘obesogenic’ environment: improve nutritional standards in schools, and teach cooking and growing food skills, along with knowledge of the long-term effects of food on health; reduce the proximity of fast food outlets to schools, colleges, leisure centres and other places where children gather; and ban junk food advertising before 9pm.

• Make the healthy choice the easy choice: introduce a sugary drinks tax; improve food labelling and introduce calorie indicators for restaurants, especially fast food outlets; encourage active travel; protect or increase green spaces; and make local authority planning decisions subject to a mandatory health impact assessment, in order to evaluate potential impact on the populations’ health.

There is good evidence, documented by the National Obesity Observatory (NOO, 2011c), to suggest that multi-component approaches, which provide support on increasing physical activity, improving eating behaviour and the quality of diet energy intake together, produce more effective outcomes for weight management programmes than single component interventions. The NOO provides guidance suggesting that weight management components of behaviour change interventions should focus on helping the individual decide what best suits their circumstances and what they may be able to sustain in the long-term, including a motivational interviewing approach. NOO further suggests that the physical activity component should focus on activities that fit easily into people’s everyday lives and are tailored to individual circumstances. The dietary component should bring together a number of components, such as targeted advice, dietary modification and goal setting, to create an individual and flexible approach tailored towards achieving a balanced, healthy diet in the long-term. Changing behaviours such as poor diet requires a long-term commitment to changing complex behaviours (Boyce et al, 2008).

In its review of the cost-effectiveness of individual level behaviour change interventions, the North West Public Health Observatory (NWPHO, 2011, p10) states that “There are many individual barriers to preventing obesity and achieving healthy weight. Possible barriers include lack of time, lack of knowledge about the effect of diet and exercise on health, buying and cooking healthy foods, the cost and availability of healthy foods and opportunities for exercising, personal tastes, the views of family and community members, low levels of fitness, disabilities and low self-esteem (NICE 2006). NICE recommends that weight management programmes should include multicomponent behaviour change strategies aimed at increasing physical activity levels, improving eating behaviour, and the quality of diet energy intake”. The NWPHO cite that studies have found interventions to be most effective amongst older, high income and male participants and least effective among lower income groups, school students and smokers.
Increasing the price of unhealthy foods and beverages through taxes is a potential policy measure to discourage over-consumption. The debate in the UK is ongoing. In Europe, this type of tax is already applied in Finland, France and Hungary. Preliminary evidence suggests that it has been effective in reducing purchases, but the long-run impact on consumption and population health has yet to be evaluated. Also, it is argued that there is too little available evidence on what will be consumed instead and whether these food substitutions would undermine the hoped-for health benefits of the tax. (Cornelsen et al, 2014 and Cornelsen et al 2015)

6.2) Research and Evidence

A systematic review funded by the School for Public Health Research at the National Institute for Health Research (McGill et al, 2015) looked at interventions to promote healthy eating, and to identify whether the impact of these differ by socioeconomic position (SEP). The World Health Organisation (WHO) define a healthy diet as achieving energy balance, limiting energy intake from total fats, free sugars and salt and increasing consumption of fruits and vegetables, legumes, whole grains and nuts. Lower SEP is associated with a higher intake of energy dense, nutrient poor foods (which are high in saturated fat and sugar), and with lower intake of fruit, vegetables and wholegrains. The review concluded that “upstream” interventions relating to price (e.g. taxing ‘unhealthy’ foods or subsidising ‘healthy’ foods such as vegetables) were most effective in groups with lower SEP, and appeared to decrease inequalities; “downstream” interventions relating to individuals making and sustaining behaviour change, especially dietary counselling, had a greater impact with increasing SEP, and seemed to increase inequalities. The authors suggested that when considering implementing a food policy at any level, those involved should consider the potential differential impact of these on health inequalities.

There is evidence to suggest that increasing numbers of men and women fail to recognise that they are overweight or obese. More men than women are overweight/obese, but weight management programmes in the UK, both NHS and commercial, have consistently shown an under-representation of men. Although fewer men join weight-loss programmes, once recruited they were less likely to drop out than women. A systematic review (Robertson et al, 2014) assessed evidence on whether weight loss programmes should be designed differently for men, and what can be done to encourage men to participate. It suggested that:

- Men may be more likely than women to misperceive their weight, less likely to consider their body weight a risk to their health and less likely to consider actively trying to manage their weight.
- Motivators amongst men were the perception of having a health problem (e.g. being defined as obese by a health professional), the impact of weight loss on health problems, and the desire to improve personal appearance without looking too thin. They may be less interested in gaining an ideal body weight, according to the medical definition, and more interested in physical activity and regaining fitness and a masculine body shape.
- A sporting context, where participants have a strong sense of affiliation, showed lower drop-out rates and higher satisfaction. Some evidence suggested that weight loss programmes may be better provided in social settings, e.g. sports clubs and workplaces, which may be more effective in engaging men.
- Men preferred interventions that were individualised, fact-based and flexible, which used business-like language and simple to understand information.
- Evidence was mixed on preferences for men-only versus mixed-sex programmes. Some men may view weight-loss programmes as feminised, and may distance themselves from what they view as the feminised realm of dieting.
Fear and embarrassment may deter men from taking part in weight-loss programmes; some may prefer one-to-one rather than group sessions, with some men expressing a preference for a male lifestyle advisor. However, some group-based programmes showed benefits by facilitating support for men with similar health problems.

Men may be less interested in weight-loss diets, which can be perceived as poor tasting and failing to satisfy the appetite.

The study concluded that weight loss in men is best achieved and maintained with the combination of a reducing diet, physical activity advice/programme, and behaviour change techniques, and that tailoring interventions and settings for men may enhance effectiveness. One limitation of this systematic review was that few of the studies were based in the UK; of those that were, evidence was mixed on preferences for NHS versus commercial programmes.

One study (Jolly et al, 2011) compared several different 12-week weight loss programmes in a Primary Care Trust in Birmingham. The 740 participants were obese/overweight men and women with a comorbid disorder. Participants were allocated to one of 8 groups: Weight Watchers; Slimming World; Rosemary Conley; group based, dietetics led programme (Size Down); one to one counselling at a GP practice; pharmacy led one to one counselling; choice of any of the six programmes; or (the comparator group) were provided with 12 vouchers enabling free entrance to a local leisure/fitness centre. Data on almost 90% of the participants was available at the end of the 12 weeks, and 70% after a year. All programmes achieved significant weight loss at 12 weeks, ranging from 1.37 kg (general practice) to 4.43 kg (Weight Watchers), and all except the general practice and pharmacy provision resulted in significant weight loss at one year. The study concluded that the commercially provided weight management services were more effective and cheaper than primary care based services led by specially trained staff.

Women were more likely than men to choose a commercial provider. Concerns have been raised in other studies about whether commercial programmes are acceptable to men because they are generally run by and attended by women. Some of the commercial groups were assigned as “male friendly” so that men would know that there would be other male attendees. Men in the group who could choose which programme they joined were more likely to select the NHS programmes, possibly because of the female image of commercial programmes, although almost half did select a commercial programme.

A qualitative evaluation of CHANGES, a Tier 3 specialist weight management service provided by 5 Boroughs Partnership was undertaken by Liverpool John Moores University (Brizell, 2012). Referrals into the service were made by health professionals such as GPs, practice nurses or hospital consultants. The programme included one to one sessions with a dietician, group sessions, and one-to-one or group sessions of cognitive behavioural therapy (CBT) if deemed necessary. Interviews were undertaken with current and past patients, and with stakeholders (service providers, commissioners, referrers and those providing supporting programmes). On the whole stakeholders were positive about the CHANGES programme overall, and in particular thought the CBT was beneficial to patient wellbeing, as patients may need to address underlying issues before they could make lifestyle changes, and that CBT was one of the most important parts of the programme for some complex patients. Many patients had experienced problems with their weight for most of their lives. Most had already tried alternative ways to lose weight, including commercial weight loss programmes and weight loss drugs. Many had lost weight whilst on these programmes but most had been unable to maintain the weight loss. Many were aware of reasons behind their weight increase which differed greatly between participants and included amongst other things, the way in which they had been brought up, bearing children, bereavement, medication, illness, and lack of mobility. Patients were very aware of whether or not they felt they needed CBT; some felt there were underlying reasons behind their weight gain but others felt they just ate the wrong foods at the wrong times. Many who had CBT felt it helped them change the way they thought about food, addressing underlying issues relating to why they overate, e.g. realising that they did not have to turn to food in an emotional crisis. However, some felt that the group CBT sessions were not suitable
for them because the information they were given was too general, and that they required one-to-one sessions to address their psychological issues in more depth.

There is evidence that brief interventions undertaken in Primary Care can lead to at least short-term changes in behaviour and body weight if they: focus on both diet and physical activity, are delivered by practitioners trained in motivational, interviewing, incorporate behavioural techniques (especially self-monitoring), are tailored to individual circumstances, and encourage the individual or patient to seek support from other people. The National Obesity Observatory (NOO, 2011c) identify that more sustained changes in behaviour and body weight appear to require more intensive interventions conducted over an extended period.

The Department of Health (DH, 2013) has produced best practice guidance on developing a tier 2 lifestyle weight management service specification for adults and children.

Work by the North West Public Health Observatory (NWPHO) estimated that physical activity at work programmes can reduce absenteeism by up to 20% and improve employee satisfaction by between 10% and 25%. In an organisation of 3,000 people, a physical activity programme can produce benefits of £424,950 annually. Over the lifetime of a cohort of 1,000 sedentary individuals, physical activity interventions have been estimated to produce net cost savings to the NHS of between £292,388 and £484,944 by averting cases of CHD, stroke and type 2 diabetes. NICE guidance on promoting physical activity in the workplace (NICE, 2008b) recommends that employers develop an organisation-wide, multi-component programme to encourage employees to be more physically active, e.g. by walking/cycling part or all of the way to and from work, and by being more physically active during the working day, e.g. by using the stairs or walking to external meetings.

NICE (NICE, 2008b) recommends that workplaces should provide opportunities for staff to eat a healthy diet and be physically active, through: promotion of healthy choices in restaurants, hospitality, and vending machines; active travel policies for staff and visitors; a supportive physical environment, such as improvements to stairwells and providing showers and secure cycle parking; and recreational opportunities, such as supporting out-of-hours social activities, lunchtime walks and use of local leisure facilities.

6.3) NICE Guidance

NICE guidelines (NICE 2006) recommend regular audits of the implementation of the guidelines, including monitoring the implementation of the local obesity strategy (which should include the creation and management of safe spaces for incidental and planned physical activity in public places and in schools). This should also ensure that healthy eating policies and procedures are available and followed by NHS organisations and the Local Authority with regard to food supplies and procurement and catering provision.

NICE recommends that weight management programmes should include multi-component behaviour change strategies aimed at increasing physical activity levels, improving eating behaviour, and the quality of diet energy intake (NICE, 2006; NICE 2014b).

NICE guidelines relating to weight management include:

  NICE (2008a) Public Health Guidelines PH11: Maternal and child nutrition
7) COST EFFECTIVENESS

In its review of the cost-effectiveness of individual level behaviour change interventions, the North West Public Health Observatory (NWPHO, 2011, p10) states that “There are many individual barriers to preventing obesity and achieving healthy weight. Possible barriers include lack of time, lack of knowledge about the effect of diet and exercise on health, buying and cooking healthy foods, the cost and availability of healthy foods and opportunities for exercising, personal tastes, the views of family and community members, low levels of fitness, disabilities and low self-esteem (NICE 2006). There is good evidence to suggest that multicomponent approaches which provide support on both physical activity and diet together produce more effective weight outcomes than single component interventions (NOO, 2010b)”.

NOO have produced 3 Standard Evaluation Frameworks (SEFs) to support evaluation of weight management interventions (NOO, 2009), physical activity interventions (NOO, 2012a) and dietary interventions (NOO, 2012b). They give guidance on the principles of evaluation, and list essential criteria (the minimum recommended data for evaluating interventions) and desirable criteria (additional data that would enhance the evaluation). NOO has also gathered a selection of practical and validated questionnaires for assessing physical activity and diet in public health.
evaluations (NOO, 2011d). Each has strengths and limitations, and although NOO describes caveats around their use, it suggests that they represent strong options for the measurement of diet and physical activity in public health interventions.

Public Health England has developed a Weight Management Economic Assessment Tool to help make economic assessments of existing or planned weight management interventions (PHE, 2014e). (Phase One of the tool is available, and Phase Two will be available later in 2015.) PHE have also produced a guide to several online tools for evaluating physical activity, sport and obesity programmes (PHE, 2014e).

The NICE Physical Activity Return on Investment Tool (NICE, 2015d) has been developed to help decision making in physical activity programme planning. Users can evaluate a range of interventions in their geographical area and models the economic returns that can be expected in different payback timescales.

The World Health Organisation (WHO, 2011) developed a good practice appraisal tool to assess good practice elements of design, monitoring, evaluation and implementation of preventive programmes and interventions that aim to counteract obesity and improve nutrition and physical activity.

8) (TARGET) POPULATION/SERVICE USER VIEWS

Community engagement suggests that people are unaware of individual lifestyle services and intelligence suggests that a more integrated lifestyle service would help address lifestyle issues.

9) UNMET NEEDS AND SERVICE GAPS

Applied to the 2013 population of almost 161,000 adults aged 18+, estimates from the Warrington Health and Wellbeing Survey suggest that in Warrington there were over 57,000 overweight adults and a further 31,000 who were obese, i.e. 88,000 with excess weight. The rates of overweight and obese residents, in line with the national picture, have continued to increase year on year. This has meant commissioners and providers should continue to explore new ways of engaging with local people about food, exercise and weight issues.

Over recent years there have been no tier 3 services operating in Warrington. A tier 3 service is designed to help people whose weight has reached a level at which they require clinical intervention. The current national guidance stipulates a person who has a BMI of 40, or a BMI of 35 with co-morbidity such as diabetes, has reached the criteria for a tier 3 service. A tier 3 weight management service must be a multi-disciplinary team, and must include clinical oversight and the provision of Cognitive Behavioural Therapy. This level of service will also assess if a person is appropriate for weight loss surgery.

Over recent years the provision of tier 4 services, i.e. weight loss surgery, has also not been delivered within Warrington, because Warrington and Halton Hospital Foundation Trust no longer perform bariatric surgery. Instead, in theory local people had been able to access NHS England surgery provided by Countess of Chester Hospital. However with the absence of a tier 3 assessment in Warrington, only a small number of people have accessed this tier 4 weight loss surgery.

From April 2016 Warrington Clinical Commissioning Group (CCG) will be responsible for both tier 3 and 4 services. Public Health and the CCG will work together to agree a weight management service pathway that meets the needs of the local population and ensure effective interventions. A new tier 3 service commissioned by Warrington CCG is planned to commence
by November 2015, for a maximum of 35 people at any one time. However, 375 people with a BMI of 40 and above were referred into the tier 2 service in 2014, and a further 389 people with a BMI between 35 and 40, suggesting that there are likely to be many more people requiring Tier 3 services than places available.

There is currently a gap in addressing staff confidence and support for addressing lifestyle behaviour change. This is a recognised gap nationally and the Royal College of Physicians (RCP, 2010) state that the dramatic increase in the prevalence of overweight and obesity in the UK in the last 20 years has not been matched by a similar expansion of education and training in how to treat or care for obese patients. The Academy of Medical Royal Colleges reiterate this point (AOMRC, 2013). The RCP have partnered with Foresight to produce a report to guide health professionals on treating obesity. The report emphasises the importance of educating health professionals and lists in detail the knowledge and skills needed to be able to diagnose, manage and treat overweight and obese people.

Links need to be made to the Active Warrington Physical Activity Strategy (WBC, 2012), and physical activity programmes, to ensure they are evidence-based and needs-led.

Whilst there are several initiatives ongoing across Warrington which give advice and support to parents to help achieve or maintain a healthy weight while planning to become parents, while pregnant and going forward as a family. However, there is a lack of a coordinated approach to the delivery. There is currently Healthy Parents’ initiative. Warrington Public Health are working in partnership with Warrington CCG and the maternity services from the Warrington and Halton Foundation Trust to develop a new ‘Healthy Parents’ initiative across the town.

10) RECOMMENDATIONS FOR COMMISSIONING

- To ensure the Healthy Weight Operational Group continues to measure local work against the Warrington Healthy Weight Strategy which was written with reference to the Public Health White Paper, Healthy Lives, Healthy People (Department of Health, 2012a).
- To retain an integrated approach to preventing and managing obesity by maintaining multi-agency partnership work through strategic, operational and delivery groups. (NICE guidance, 2014a, PH53, recommendation 1).
- To ensure that a wide range of staff across partner organisations are supported to give basic messages about weight through the courses available through the Public Health Training catalogue. (NICE guidance, 2014a, PH53, recommendation 14).
- Action to modify the impact of an obesogenic environment at both a population and individual levels is needed. Local authorities have a range of legislative and policy levers at their disposal, alongside wider influences on healthy lifestyles that can help to create places where people are supported to maintain a healthy weight. The Healthy Weight Operational Group should work with colleagues across local authorities to use these and other approaches to maximise health benefits.
- To continue to focus prevention efforts within the more socio-economically deprived areas of Warrington to attempt to reduce the inequalities that exist between most and least deprived, in terms of unhealthy weight and resulting health issues. As part of this focussed effort, investigate what people feel are the barriers to healthier eating and more physical activity, and how they can be helped to overcome these barriers.
- For Warrington Borough Council to apply for the national ‘Workplace Charter Award’. To earn this, an organisation must provide evidence against a number of criteria which relate to physical activity and healthy eating, e.g. reviewing the specifications of commissioned
caterers and removal of unhealthy vending machines etc. Also, to encourage local businesses to achieve the national Workplace Wellbeing Charter Accreditation.

- To set outcome targets based on the Department of Health's Best Practice Management for Weight Management Services 2013 to ensure that clients' weight-loss targets are based on the knowledge of risk and likely co-morbidities and on subsequent potential for health gain and risk reduction, which differ according to BMI category.

- The Warrington Healthy Weight Service runs a 12 week programme of healthy eating advice, exercise, behavioural techniques and cooking skills. Less than half of clients starting the 12 week course actually complete it; this suggests that the service and commissioners need to investigate why clients choose not to complete the course, and to continue to find new ways of engaging with clients to encourage them to complete it. (NICE guidance, 2014a, PH53, recommendation 8).

- To review the current care pathway across all levels of provision, with the aim of ensuring that an appropriate evidence-based care pathway is in place, which is responsive to the needs of the local population based on local intelligence, and that NICE guidelines are implemented.

- The ‘Fit to Tackle’ lifestyle community programme, commissioned by Public Health and delivered by the current weight management services has shown early positive outcomes. This programme needs to continue to be monitored and evaluated to ensure weight loss happens on a safe way and helps to prevent weight gain. (NICE guidance, 2014a, PH53, recommendation 17).

- To embed a mandatory training requirement and continued professional development in all appropriate contract specifications. (NICE guidance, 2014a, PH53, recommendation 15).

- To use the Healthy Child programme contact points and the National Child Measurement Programme to provide an opportunity to target children and adults by addressing unhealthy lifestyle choices within the family. (NICE quality standard QS94).

- To further strengthen links between the healthy weight agenda and the Active Warrington Strategy action plan. This includes the work delivered by the Schools Sports Partnership, and the School PE & Sports Reference Group.

- Public Health commissioners need to continue to encourage innovation with regards to weight management services and initiatives in recognition that a ‘one-size-fits-all’ weight management programme is unlikely to suit all people attempting to lose weight. (NICE guidance, 2014a, PH53, recommendation 7).

11) RECOMMENDATIONS FOR NEEDS ASSESSMENT WORK

- A review of the tiered services is necessary to make sure that the correct provision is commissioned for the level of need.

- Revisit the Healthy Weight Healthy Lives insights into childhood obesity to inform service delivery. Helping adults to improve their diet and physical activity levels to achieve and maintain a healthy weight can also have a beneficial effect on the diet, physical activity levels and weight of their children.

- Conduct an evaluation of local community nutrition interventions.

Contacts
AnneMarie Carr, Health Improvement Specialist
Public Health Division, Families & Wellbeing Directorate
Warrington Borough Council, Buttermarket Street, Warrington, WA1 2NP
Tel: 01925 443057, email amcarr@warrington.gov.uk
References


AOMRC – see Academy of Medical Royal Colleges

BHF - see British Heart Foundation

BPS - see British Psychological Society


DCLG - see Department for Communities and Local Government


DH – see Department of Health


HCSCH – see House of Commons Select Committee for Health

HSCIC – see Health and Social Care Information Centre


NOO – see National Obesity Observatory


NWPHO – see North West Public Health Observatory


Warrington Borough Council (Public Health) (2013). *2013 Warrington Health and Wellbeing Survey data*


WBC – see Warrington Borough Council


YHPHO – see Yorkshire and Humberside Public Health Observatory
Other useful resources


Faculty of Public Health. Healthy Weight, Healthy Lives: A toolkit for developing local strategies. http://www.fph.org.uk/healthy_weight%2c_healthy_lives%3a_a_toolkit_for_developing_local_strategies

National Institute for Health and Clinical Excellence (NICE) http://www.nice.org.uk/

National Obesity Forum www.nationalobesityforum.org.uk/


NHS Evidence https://www.evidence.nhs.uk/

Obesity Learning Centre (OLC). http://www.ncdlinks.org/olc/