Obesity

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Executive summary

Introduction

Defining obesity: O*besity is "a term used to describe somebody who is very overweight, with a lot of body fat*" (NHS Choices 2014). The World Health Organisation's (WHO's) definition of overweight and obesity is "*abnormal or excessive fat accumulation that may impair health*". (WHO 2015) These definitions are important as they indicate what to measure when investigating obesity.

Measuring obesity: Body mass index (BMI) is a widely used measure of healthy weight for height. BMI is not used to definitively diagnose obesity – very muscular people sometimes have a high BMI, without excess fat – but for most people, it can be a useful indication of whether they may be overweight.
Adults with a body mass index (BMI) more than or equal to 30 kg/m2 are classified as obese, however people from Asian and other minority ethnic groups are at an equivalent risk of health conditions or mortality at a lower BMI than the white European population. (NICE [PH46] July 2013).
Children's BMI is classified using thresholds that vary to take into account the child's age and sex and those with a BMI over the 95th percentile – based on the 1990 UK reference population are classified as obese. (The Health and Social Care Information Centre 2012 NICE guidelines [PH42]).

What are the implications for health? The Chief Medical Officer considers the growing obesity problem to be so serious that the government needs to make tackling obesity in the whole population a national priority. Her report recommends that obesity be included in the government's national risk planning. (Chief Medical Officer 2014). The inequality in obesity prevalence by deprivation is widening. Obesity significantly increases the risk of diabetes, cardiovascular disease, certain cancers and premature mortality

What are the causes of obesity? The fundamental cause of obesity and overweight is an energy imbalance between calories consumed and calories expended. Factors

which have contributed to this increase include physiological factors, eating habits, activity levels and psychological influences which occur at an individual and societal level (Foresight, 2007). Globally, there has been an increased intake of energy-dense foods that are high in fat; and an increase in physical inactivity due to the increasingly sedentary nature of many forms of work, changing modes of transportation, and increasing urbanization (WHO 2015).

This chapter provides information about obesity in Nottingham in relation to the national picture. Specific information about physical activity and diet and nutrition are considered in separate chapters. To make it easier for people working with children, young people and adults to understand who is at risk and their needs, information is split within each section, where appropriate, between general information applicable to the whole population, children and young people (2 to 15 year olds) and adults.

Unmet need and gaps

General Issues

1. Obesity is estimated to affect around one in every four adults and around one in every five children aged 10 to 11 in the UK. (NHS Choices 2014). Almost a sixth of children (16%) aged 2 to 15 years were obese (The Health and Social Care Information Centre 2012).
2. Trends in national and local obesity prevalence suggest adult and child obesity rates are likely to continue rising for the foreseeable future and inequalities are likely to widen without intervention.
3. To be effective in tackling obesity, and particularly to help the poorest in society, activity needs to go beyond health messages and information to consumers. Actions need to be taken to address the structural drivers of obesity. To achieve sugar reduction, this would mean focusing on the environmental drivers e.g. advertising and marketing, price promotions, sugar levels in food and food availability. Price increases on specific high sugar products like sugar sweetened drinks (which has now happened), such as through fiscal measures like a tax or levy, if set high enough, would reduce purchasing at least in the short term.
4. Treating obesity and its consequences alone currently costs the NHS £5.1bn nationally every year (Public Health England 2015).
5. The family environment has a strong influence on a child's development, their eating and activity habits, and predisposition to overweight. Nottingham has high rates of adult obesity increasing the risk of child obesity.
6. Obesity in pregnancy increases the risk of complications for the mother and child during pregnancy and childbirth. The proportion of obese pregnant women in the city is estimated to be higher than the national average which has increased in the last decade.
7. There is a need to continue to expand provision of universal and targeted interventions in order to reduce long-term need for health services to tackle the complications of child and adult obesity.

Children and Young People's Issues

1. Having multiple early-life risk factors is associated with a more than four-fold increased risk of being overweight or obese in later childhood. (CMO 2014)
2. The prevalence of obesity at age 4-5 years and 10-11 years in Nottingham is significantly higher than the England average and is the second highest in the country at age 4-5 years.
3. The proportion of children that are obese doubles between age 4-5 years and 10-11 years.

4. Obesity in children and women is strongly associated with deprivation. In Nottingham where there are high levels of deprivation, this is a significant contributing factor.
5. There is a potential gap in weight management service provision for children aged 2-4 and for 5-15 year olds.
6. The commissioned (mainly adult) weight management service provided by Slimming World is poorly accessed by14-15 year olds.
7. The provision of free leisure provision for families on the Healthy Weight Support programme provided a positivity opportunity for families to be active. The 'activate' programme' is no longer offered as part of the programme which may have a detrimental impact on outcomes of the programme.
8. There is a need to increase capacity and capability ensuring all staff working with children and families are trained to consistently and sensitively raise the issue of weight and offer appropriate support in line with the care pathway and to promote consistent evidence based healthy eating and physical activity information.

Adults Issues

1. A greater proportion of people not working due to being sick or disabled are obese compared to those that are not obese.
2. Uptake of adult weight management services by Asian women is low in proportion to need.
3. The prevalence of obesity recorded in GP practices is higher in adults with learning disability than the general adult population.
    a. 39% of adults aged 18 years and over (38% of men and 40% of women) were overweight.
4. As obesity is the main risk factor for Type 2 diabetes, the associated health and care costs also rise.

Recommendations for consideration by commissioners

General: Overall Strategic Approach

1. The leadership role of the local authority in developing a workable whole systems approach is crucial. Doing so will contribute to helping local authorities and partners meet many priorities including improving quality of life, reducing expenditure and creating stronger communities.
2. In accordance with NICE Guidance PH42 (2012) the Health and wellbeing board should:
    a. ensure tackling obesity is one of the strategic priorities of the joint health and wellbeing strategy.
    b. develop a sustainable, community-wide approach to obesity in accordance with NICE guidelines [PH42] that is coherent, community-wide, and multi-agency in its approach to address obesity prevention and management. Activities should be integrated within the joint health and wellbeing strategy and broader regeneration and environmental strategies.
    c. through the performance infrastructure, should regularly (for example, annually) assess local partners' work to tackle obesity (taking account of any relevant evidence from monitoring and evaluation). In particular, they should ensure clinical commissioning group operational plans support the obesity agenda within the health and wellbeing strategy.
    d. optimise the positive impact (and mitigate any adverse impacts) of local policies on obesity levels. This includes strategies and policies that may have an indirect impact, for example:

   i. continue to develop opportunities that increase physical activity e.g. improve people's use of parks through park wardens and through encouraging active travel through the Local Transport Plan and reducing those which favour car use over other modes of transport.

3. Develop attractive safe open green spaces and build the urban environment to encourage active travel (walking, biking etc.).
4. Re-invigorate the Nottingham Healthy Weight Strategy.
5. New evidence about the impact of sugar on diet and health needs to be taken into account and addressed (PHE 2015). Consider options to support the population to reduce the consumption of sugar in their diets such as:
   a. attracting organisations to Nottingham that produce and sell healthy food products
   b. introducing local pricing mechanisms to make high sugar options less affordable
6. Develop a Healthy Workforce programme.
7. Develop, implement and evaluate the Healthy Weight Strategy and high level action plan with an emphasis on universal and targeted approaches to increase physical activity and improve the diet of the population. These approaches are more likely to reduce the average BMI of the population than high risk group approaches or weight management alone (see also recommendations in the physical activity and diet and nutrition chapters).
8. More research is required to understand underlying causes of obesity and effectiveness of interventions to tackle obesity. Interventions should therefore be rigorously evaluated
9. Joint working with Planning, Transport Planning, Policy and Development Management to ensure the potential for physical activity and healthy eating is maximised, for example, through protecting the places required for people to gain the necessary physical activity, creating a build environment that supports physical activity and active travel and protecting spaces for growing food locally.
10. Rigorously evaluate current interventions by including evaluation criteria from the Standard Evaluation Framework for Weight Management Interventions, (National Obesity Observatory, 2009) in contracts, and through research to inform future impact modelling and commissioning.

Children and Young People

1. Review the availability and accessibility (financial) of leisure activities for young people who are accessing weight management and explore ways to ensure adequate and accessible provision.
2. Prioritise early identification and prevention of obesity through the Healthy Child Programme by setting clear commissioning outcomes within Health Visiting, Family Nurse Partnership and Early Help service specifications.
3. Continue to ensure at least 90% participation in the National Child Measurement Programme.

Prevention: Universal and Targeted Approaches

General

Use the learning from the LSTF programme to plan future active travel programmes that measure the health benefits and identify the necessary resources to implement them.

Children

1. Implement the Nottingham Breastfeeding Framework for Action and ensure a co-ordinated programme of interventions across different settings to increase breastfeeding rates.
2. Ensure early identification and prevention of obesity through the Healthy Child Programme by setting clear commissioning outcomes.
3. Consider the feasibility of implementing Born to Move[1] in partnership with SSBC.
4. Work with nurseries and other early years providers to minimise sedentary behaviour in infants and children.
5. Consider the re-implementation of the Healthy Children's Centre Standard (based on the Healthy Schools Model).
6. Explore the opportunity for Early Help Services to support families around healthy weight (maternal and child obesity) through 'every contact counts'.
7. Explore the feasibility of providing parent interventions to address obesity in an accessible format (eg online).
8. Ensure that the involvement of whole families (parents and children) in interventions that promote both healthier diet and more physical activity are prioritised.
9. Evaluate the Food for Life Partnership to inform future commissioning decisions.
10. Develop family and child nutrition interventions and ensure integrated provision through Children's Centres, schools, and other community settings.
11. Consider expansion of cook and eat sessions provided through the Public Health Nutrition team and the Early Help service.
12. Continue to deliver and expand the school PE sport and adventurous activity programme targeted at children who are least active.
13. Develop local targets for increasing children's participation in high quality PE and sport in schools.
14. Continue universal provision of support to schools around healthy weight through the Healthy Schools team and Health Improvement Facilitators within school nursing.
15. Ensure that the development and improvement of school playgrounds is strategically planned.
16. Encourage secondary schools to prioritise the reduction of fizzy/energy drinks within the framework of Healthy Schools..

Specialist – Weight Management Services

1. Review the child obesity pathway to ensure there is sufficient targeted weight management provision for children and young people from age 2-15 years.
2. Improve access and referral route to Slimming World for Young People and their Families.
3. Ensure the early years workforce understand referral routes into the child obesity pathway.
4. Conduct robust evaluation of the healthy weight coordinator support package.

Adults

1. Prioritise and consider the needs of pregnant women and new mothers in the development of the adult healthy lifestyle programmes. Explore ways to increase the access of Asian women to weight management.
2. Ensure weight management is accessible to adults with learning disability

[1] Born to Move - is a home visiting programme for families with a child between the ages of nought to five that encourages parent and child active play to improve the child's motor co-ordination and support early language and literacy skills.

3. Continue to develop the weight management and care pathway for women, before, during and after pregnancy.
4. Evaluate the effectiveness of the NUH Maternal Obesity Programme (Bumps and Beyond) including equity of access.
5. Continue to build the capability of the workforce to ensure those working at a local level are clear about promoting the benefits of a healthy weight and feel confident in sensitively raising the issue with those who are overweight or obese.

Full JSNA report

What do we know?

1) Who is at risk and why?

General

- There is an association between all cause mortality and obesity. A BMI of 30-35 reduces life expectancy by 2-4 years while severe obesity is estimated to reduce life expectancy by 10 years. Obesity causes insulin insensitivity, which is an important causal factor in diabetes, heart disease, hypertension and stroke. Obesity is associated with the development of hormone-sensitive cancers; the increased mechanical load increases liability to osteoarthritis and sleep apnoea. Obesity also carries psychosocial penalties. http://fingertips.phe.org.uk/health-profiles#page/6/gid/1938132694/pat/6/par/E12000004/ati/102/are/E06000018/iid/90743/age/164/sex/4
- Being overweight or obese significantly increases the risks of developing and dying from cardiovascular disease, kidney and liver disease and cancer and the risk increases as BMI increases (Prospective Studies Collaboration, 2009).
- Diseases related to overweight and obesity are estimated to cost NHS Nottingham City £94.4 million by 2015 (Department of Health, 2008b).
- It is estimated that additional indirect costs due to lost earnings due to sickness and premature mortality would cost an additional £203 million in 2010 and £217 million by 2015 if current trends continue (Cansfield et al, 2011).
- The Chief Medical Officer report 2014 highlights obesity as one of the biggest risks to women's health, affecting all aspects of a woman's life from birth, family planning, pregnancy and right through to menopause and later life.

Children and Young People

- Obese children are at increased risk of psychosocial problems, including reduced self-esteem and increased risk of depression and social isolation (Doak et al, 2006).
- Obese children are at risk of becoming obese adults reducing life expectancy by an average of 9 years through a greatly increased risk of heart disease, cancer, diabetes and high blood pressure (APHO, 2005).
- Nationally, it is estimated that over one in five children at age 4-5 years are overweight/obese (21.9%) and more than one in three (33.2%) at age 10-11 years (NHS Information Centre, 2015).
- The proportion of obese children doubles between ages 4-5 years and 10-11 years (9.1 and 19.1% respectively) (NHS Information Centre, 2015).
- More boys than girls are obese in both year groups (4-5 years 9.5% boys, 8.7% girls; 10-11 years 20.7% boys, 17.4% girls) (NHS Information Centre, 2015).
- Rates of obesity in these age groups are similar in 2014-15 to 2006-07 (NHS Information Centre, 2015).
- Overweight and obesity is higher in children in deprived populations and there's a clear trend of increasing prevalence with increasing deprivation. (NHS Information Centre, 2015).
- Obesity is highest in the Black African, Bangladeshi, and Black Other groups among reception boys and Black African and Black Other ethnic groups among reception girls (Health and Social Care Information Centre, 2015).
- Obesity is more common in children with learning disabilities than in the general population. It is estimated that 24% of children with learning disabilities are obese (Kerr et al, 2006).

- Obesity is more common in children who have parents that are overweight or obese; the family environment has a strong influence on a child's development, their eating and activity habits, and predisposition to overweight (Finn et al, 2002).

Adults

- There is a bi-directional association between obesity and common mental health problems as obese persons have a 55% increased risk of developing depression, whereas patients with depression have a 58% increased risk of becoming obese (Luppino, F.S et al, 2010).
- People with morbid obesity live on average 8–10 years less than people who are a healthy weight - which is similar to the effects of life-long smoking (Prospective Studies Collaboration, 2009).
- Maternal obesity significantly increases risk of foetal congenital anomaly, prematurity, stillbirth and neonatal death (Confidential Enquiry into Maternal and Child Health, 2007).
- Nationally, the proportion of adults with a normal Body Mass Index (BMI) decreased between 1993 and 2012, from 41% to 32% among men and from 49% to 41% among women. Among both men and women there has been little change in the proportion that was overweight over the period (42% of men and 32% of women in 2012).
- Between 1993 and 2012, there has been a marked increase in the proportion of adults that were obese. *(Health Survey for England 2012).*
- There was a marked increase in the proportion of adults that were obese from 13.2 per cent in 1993 to 26.0 per cent in 2013 for men, and from 16.4 per cent to 23.8 per cent for women. (HSCIC 2015)
- The proportions that were overweight including obese increased from 57.6 per cent to 67.1 per cent in men and from 48.6 per cent to 57.2 per cent in women.
- In England, 56% of women aged 35 to 44 and 62% of women aged 45 to 54 were classified as overweight or obese in 2013, over 36% of women aged 16–24 and 50% of women aged 25–34 were overweight or obese. (CMO 2014)

2) Size of the issue locally

Children and Young People

Published results from the National Child Measurement Programme (NHS Information Centre 2015) undertaken during the 2014/15 academic year show that in Nottingham:

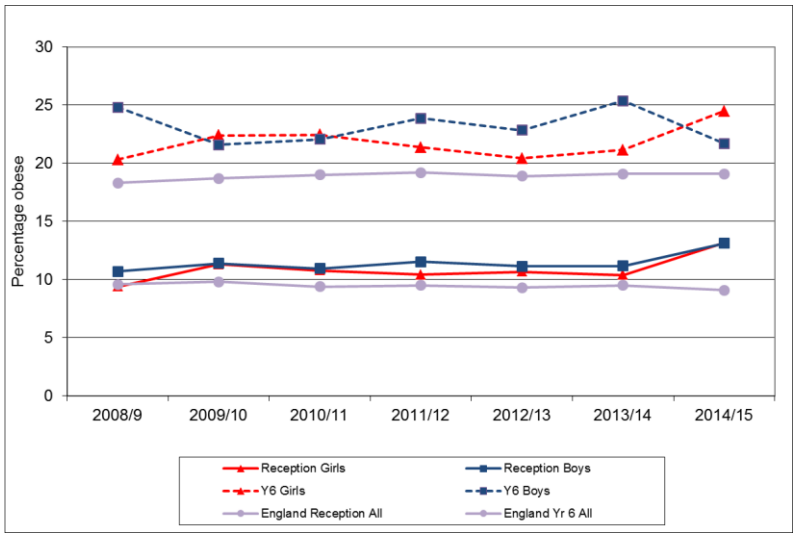
- In Reception (aged 4-5 years), 27.6% of children were overweight or obese
- In Year 6 (aged 10-11 years) 38.8% of children were overweight or obese.

Nottingham's children have a significantly higher prevalence of obesity compared to the England average at age 4 to 5 years (13.1% compared to 9.1%) and at age 10 to 11 years (23.1% compared to 19.1%) (Public Health England, 2015). Nottingham's child obesity prevalence in Reception was the second highest in the country in 2014/15 (after Barking and Dagenham).

Latest data presented in figure 2 show that obesity prevalence increased in both girls and boys in Reception after being static among both genders for several years. Between 2011/12

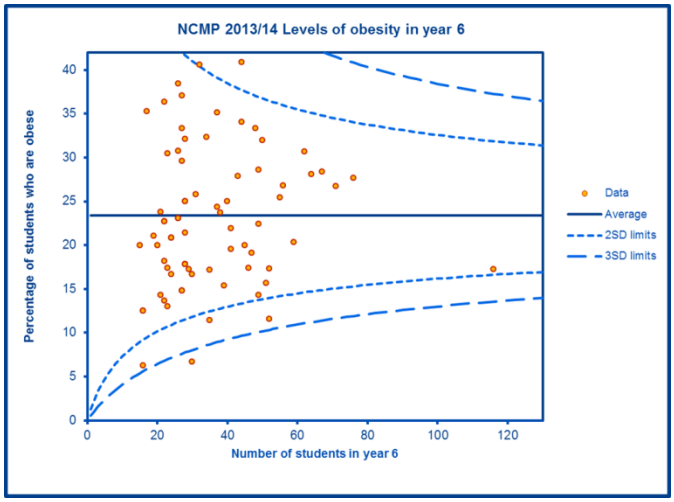
and 2013/14, obesity prevalence among Year 6 boys was higher than in Year 6 girls. In 2014/15 however, obesity prevalence was higher in Year 6 girls as there was a decline in prevalence among boys and an increase among girls. It is not clear whether these latest data are indicative of an upward trend in the obesity prevalence of Nottingham's children or are a result of statistical variation.

Figure 2. Proportion of children who are obese in Nottingham City schools Reception year (aged 4-5 years) and Year 6 (aged 10-11 years) 2008/9-2014/15 Source: NCMP



The variability in prevalence at a school level is illustrated in Figure 3 with each school represented by a point. There are widely varying rates between schools (from over 40% to less than 10%), however, almost all schools fall within the inner tramlines indicating that differences are within that expected by natural statistical variation.

Figure 3. *Funnel plot of percentage of Children Year 6 who are obese by school (2013/14)*



<u>Benchmarking child obesity prevalence</u>

Benchmarking Nottingham against similar areas shows child obesity prevalence in Reception was the highest of all its statistical neighbours in 2014/15; and appears to be statistically higher than 10 of the 11 neighbours (due to non-overlapping confidence

intervals) and similar to one area (Wolverhampton). Nottingham's statistical neighbour with the lowest reception obesity prevalence is Southampton (8.6%).

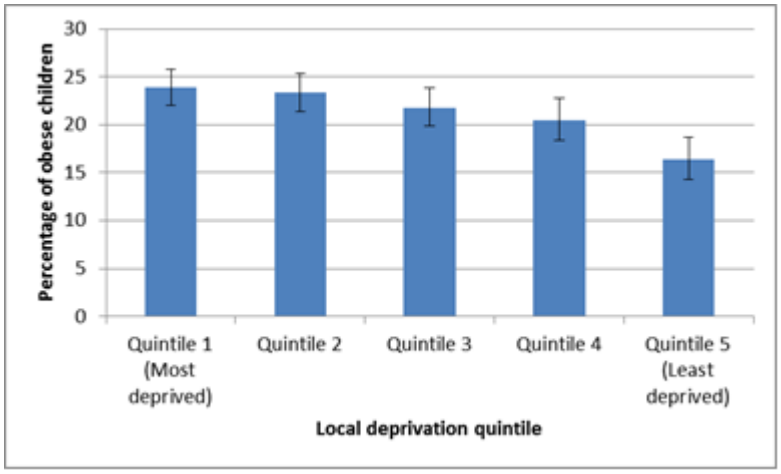
Nottingham's obesity prevalence in Year 6 is within the mid-lower range of its neighbours (Table 1). Bristol has the lowest prevalence of 20.7% and Wolverhampton has the highest (26.5%). The neighbour that appears to have made the greatest reduction in obesity prevalence since 2010/11 is Salford (23.1% to 21.2%).

Table 1. *Percentage of obese children aged 10-11 years: –Nottingham and Children's Services Statistical neighbours*

Area	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**
England average	19.0	19.2	18.9	19.1	19.1
Bristol	18.5	19.1	19.8	19.3	20.7
Southampton	19.8	18.9	20.3	21.8	20.7
Derby	18.9	19.2	19.8	20.5	20.8
Coventry	20.2	20.6	20.4	21.2	20.9
Salford	23.1	21.0	21.5	21.4	21.2
Kingston upon Hull	23.2	22.5	21.3	20.3	22.3
Nottingham	**22.2**	**22.9**	**21.7**	**23.3**	**23.1**
Manchester	23.7	23.6	24.7	25.0	24.1
Birmingham	23.4	24.4	23.4	23.9	24.2
Sandwell	25.9	25.2	24.8	24.5	25.8
Wolverhampton	23.8	24.2	24.4	26.3	26.5

Local inequalities by deprivation are illustrated further in which clearly mirrors the national trend of increasing levels of obesity with increasing deprivation. Children living in the most deprived 20% of the City are significantly more likely to be obese than children living in the least deprived 20% (Figure).

Figure 4. *Obesity prevalence (with 95% confidence intervals) in 10-11 year old children by local deprivation quintile: Nottingham pooled data 2011/12 to 2013/14*



Adults (people aged 16 years and over)

Data from the Active People Survey (2012-2014) published in the Public Health Outcomes framework indicates that 23.1% (95% confidence interval 20.8 – 25.3%) of Nottingham's adult population are obese and 62.3% either overweight or obese (95% CI 59.6 – 64.9%). This is slightly lower than the prevalence for England (64.6%) but not statistically significantly so. Nottingham compares favourably to its statistical neighbouring local authorities ranking fourth best out of 15. These data are adjusted to allow for self-reported underreporting, based on age and sex profiles of areas but are not adjusted for age (therefore the lower than England prevalence is likely to be due in part to our young population profile) , sex, ethnicity and deprivation. However given Nottingham's ethnicity and deprivation profile and the strong associations with obesity, it is encouraging that the overweight and obesity prevalence in the City is in line with comparators.

It is expected that the prevalence of overweight and obesity in the Nottingham City population will follow the same patterns by age, sex, deprivation and ethnicity as nationally as outlined above.

There are no data available to indicate the local obesity prevalence in adults by age, sex or ethnicity. In previous years these BMI data was available through Nottingham City's Citizens Survey. However, a fifth of those surveyed did not provide a response to the relevant question and summary statistics suggested individuals under-reported their weight. As a result these data were not valid in measuring BMI in the City and therefore are no longer in use.

Maternal obesity

- The proportion of pregnant women in England who are obese doubled between 1989 and 2007 from 8% to 16% (Heslehurst et al, 2010) (Figure 5). This represents a population who are at increased risk of pregnancy complications for both mother and baby (Confidential Enquiry into Maternal and Child Health, 2007).

Figure 5. BMI Distribution of pregnant women in England in 2007 (Heslehurst et al, 2010)

BMI Classification	BMI (kg/m^2)	Pregnant Women
Underweight	<18.5	4.9%
Healthy Weight	18.5-24.9	53.6%
Overweight	25-29.9	25.9%
Obese	≥ 30	15.6%
Morbidly obese	≥40	1.4%

- Obese pregnant women are more likely to live in the most deprived compared with the least deprived fifth of England (Heslehurst et al, 2010)
- Maternal obesity has been related to higher levels of infant mortality amongst lower socioeconomic groups. A reduction in the prevalence of obesity amongst this group has been modelled as an evidence-based intervention to reduce infant mortality (Department of Health, 2007).

Model based estimates for the proportion of women in the different BMI categories were calculated using unpublished data from the study by Heslehurst et al (2010) (figure 6). 2008/9 data was used as the study was conducted in 2007-9. Using this method it is estimated that obesity prevalence during pregnancy in the city (17.7%) is higher than the England average (15.6%). As with the adult obesity estimate, this higher obesity level

estimate amongst pregnant women is due to the high proportion of Nottingham City being within the most deprived fifth of England. BMI is now being systematically recorded by the NUH maternity services and will be reported in future JSNA updates.

Figure 6. Model based estimate of maternal BMI categories in Nottingham City compared with England (based on unpublished statistics from Heslehurst et al (2010)

BMI Category	England prevalence 2007	Local Estimated Prevalence
Underweight (BMI<18.5)	4.9%	5.3%
Healthy Weight (BMI ≥1 .5-24.9)	53.6%	50.7%
Overweight (BMI ≥25-29.9)	25.9%	26.3%
Obese (BMI ≥30)	15.6%	17.7%
Morbid obese (BMI≥40)	1.4%	2.1%

The inequalities in the city are also demonstrated by the higher prevalence of obesity amongst the Mosaic groups that make up the majority of the city's population, with the exception of the more younger, well-educated city dwellers (includes students and young professionals) (figure 7).

F*igure 7: Proportion of Mosaic groups with highest obesity index score in England and Nottingham*

	Group Name	% Nottm Population	% England population	Population index	Obesity index *
G	Young, well-educated city dwellers	26.7	9.4	285	55
O	Families in low-rise social housing with high levels of benefit need	16.5	4.9	334	119
I	Lower income workers in urban terraces in often diverse areas	11.3	8.2	138	119
K	Residents with sufficient incomes in right-to-buy social housing	10.9	8.5	128	119
M	Elderly people reliant on state support	5.4	4	133	129

*Experian have produce a "Mosaic Grand index" in which mosaic groups are ranked against the national average on specific issues using information from surveys and other data sources. The England average is a score of 100. The data source for the obesity index is the Healthy Survey for England.

Issues raised by Equality Impact Assessment
National and local data suggests a higher rate of obesity amongst children from Black and Minority Ethnic groups, and children living in deprived areas. The Healthy Weight Support programme is tailored to meet the individual needs of families and prioritises families living in the 10 most deprived Wards in the City.

Children

Mapping illustrates the extent to which obese children are concentrated in the more deprived City areas. Wards with the highest proportion of overweight and obese children are:

Arboretum, St Ann's, Basford and Aspley (Figure 9). In terms of service planning it is useful to examine which wards have the highest *number* of obese children. This shows a similar, yet slightly different picture with the highest numbers in the North of the City with the highest number in Aspley (Figure 8).

Figure 8: Number of overweight obese children in Year 6 2011-2014

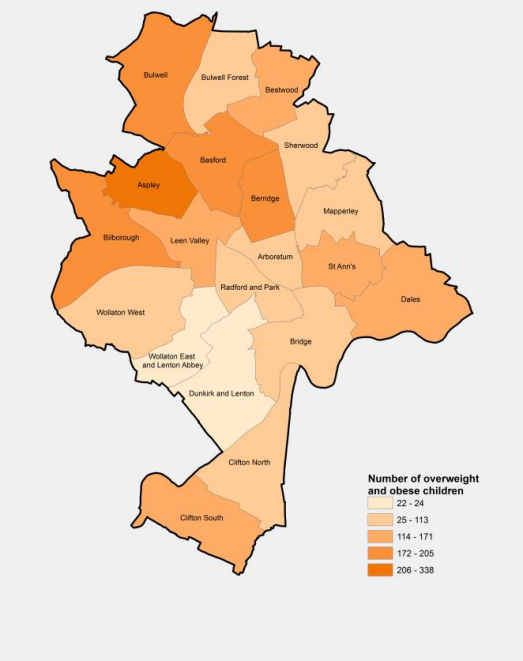
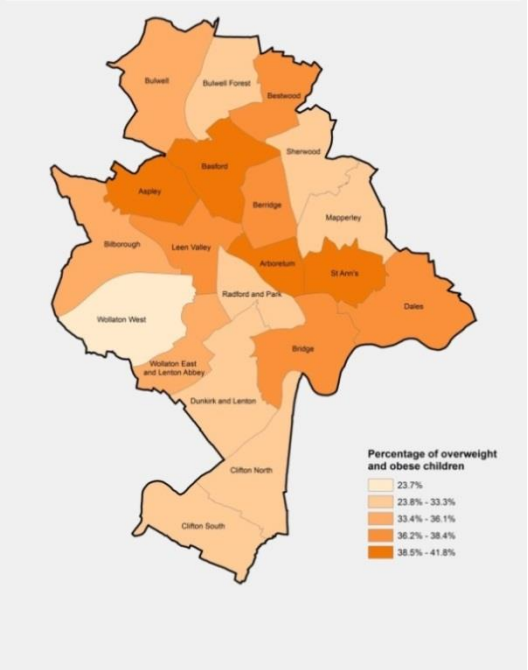


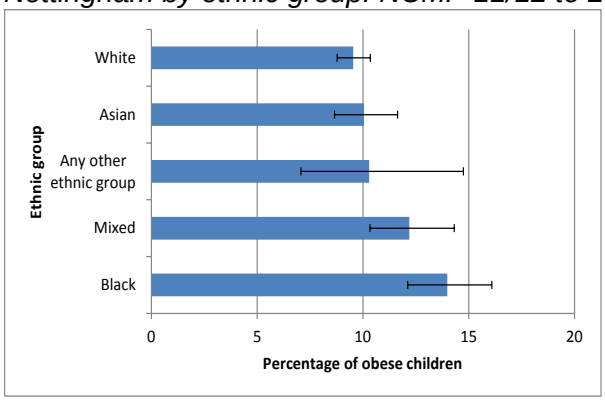
Figure 9: Percentage of obese children in Year 6 2011-2014

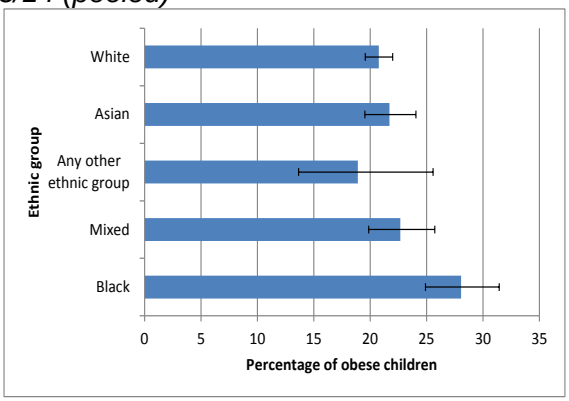


It appears that the national variation in child obesity prevalence by ethnicity may be mirrored locally. As shown in Figure 24, Reception aged children in the Black and ''Mixed ethnic groups appear to have a higher prevalence of obesity than the White ethnic group. Due to overlapping confidence intervals, it is not possible to determine whether these differences are true differences, except among the Black ethnic group where obesity prevalence is significantly higher than in the White ethnic group. It appears that these ethnic differences are also apparent among Year 6; children; again those in the Black group are significantly more likely to be obese as children in the White group. However, there are known associations between ethnicity and area deprivation (National Obesity Observatory, 2008). Deprived urban areas in England tend to also have a higher proportion of individuals from non-White ethnic groups, so when socio-economic circumstances are taken into account, ethnic differences may not be great. However, cultural issues are important for management and prevention.

As part of the GP practice audit for the NHS Nottingham City learning disability self-assessment it was found that 47% of the registered population, with identified learning disability aged 18 years and over, in the 42 GP practices that responded had their BMI recorded. Of these, 41% had a BMI of 30 or greater which is a larger proportion than the general adult population (27%).

Figure 10: Prevalence of obesity among all children in Reception (left) and Year 6 (right) for Nottingham by ethnic group: NCMP 11/12 to 2013/14 (pooled)





3) Targets and performance

National Guidance

Data by Public Health England (PHE) are available for prevalence of excess weight (overweight including obesity, BMI ≥25kg/m2) in adults (aged 16 and over) at local authority level. These data are an indicator in the Public Health Outcomes Framework (PHOF) Health Improvement domain. PHE also produced a set of supporting indicators for adult underweight, healthy weight, overweight, and obesity prevalence.

Obesity by Local Authority: Public Health England regularly publishes information about a range of health indicators. The health indicators most relevant to overweight and obesity are:

2.12 Excess weight in adults: Proportion of adults classified as overweight or obese. The number of adults who are classified as overweight or obese with valid recorded height and weight.

14: Obese adults: Defined as Adults with a BMI greater than or equal to 30kg/m2. Indicator and Data source: Active People Survey, Sport England. Number of adults with a BMI classified as obese, calculated from the adjusted height and weight variables. Data are from APS6 quarter 2 to APS9 quarter 1 (mid-Jan 2012 to mid-Jan 2015).

NHS Indicators Quality and Outcomes Framework (QOF): includes an indicator which rewards GP practices for maintaining an obesity register of patients (aged 18 and over) with a BMI greater than or equal to 30 kg/m2, recorded in the previous 12 months. (HSCIC May 2015).

NICE (2006) recommends that overweight and obese adults should aim for a realistic 5-10% weight loss. This is because there is strong evidence that this can significantly reduce cardiovascular and metabolic risk (SIGN, 2010). SIGN (2010) recommends that adults with a BMI ≥ 35 kg/m^2 may require a greater proportion of weight loss which will always be above 10 kg.

Sources of data:

- The Health Survey for England is published annually. http://www.hscic.gov.uk/Article/1685
- National Child Measurement Programme (NCMP) http://www.hscic.gov.uk/ncmp
- There is not a comprehensive measurement programme for body mass index in adults as there is in children. The Active People Survey commissioned by Sport England is a

telephone survey conducted by Ipsos MORI with the objective of measuring participation in sport and active recreation (walking and cycling). It relies on self reported recall and doesn't measure activities of daily living (e.g. climbing stairs) and active transport (walking and cycling for transport purposes).

- Locally, data on adult weight and height is collected through the Nottingham Citizen Survey and through primary care. Local obesity prevalence has also been modelled for each local authority area in the country by the Association of Public Health Observatories (APHO) and a local estimate has also been made. Each of these estimates has methodological limitations.

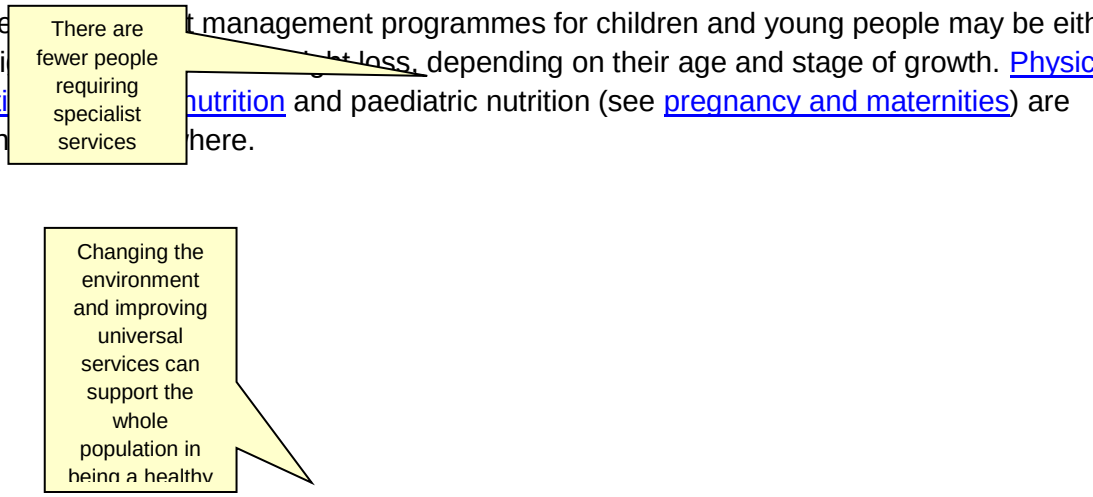
4) Current activity, service provision and assets

Nottingham City has a healthy weight strategy that was developed in 2010 to set out how the city would work in partnership to deliver the Nottingham Plan to 2020 targets for child and adult obesity.

Addressing Physical Activity, Obesity and Nutrition is now part of the city's Joint Healthy and Wellbeing Strategy 2016-2020. A new broad Physical Activity, Obesity and Nutrition strategy is being developed in 2016 to build on from the 2010 Healthy Weight Strategy.

The strategy framework for delivery is set out as a diagram below:

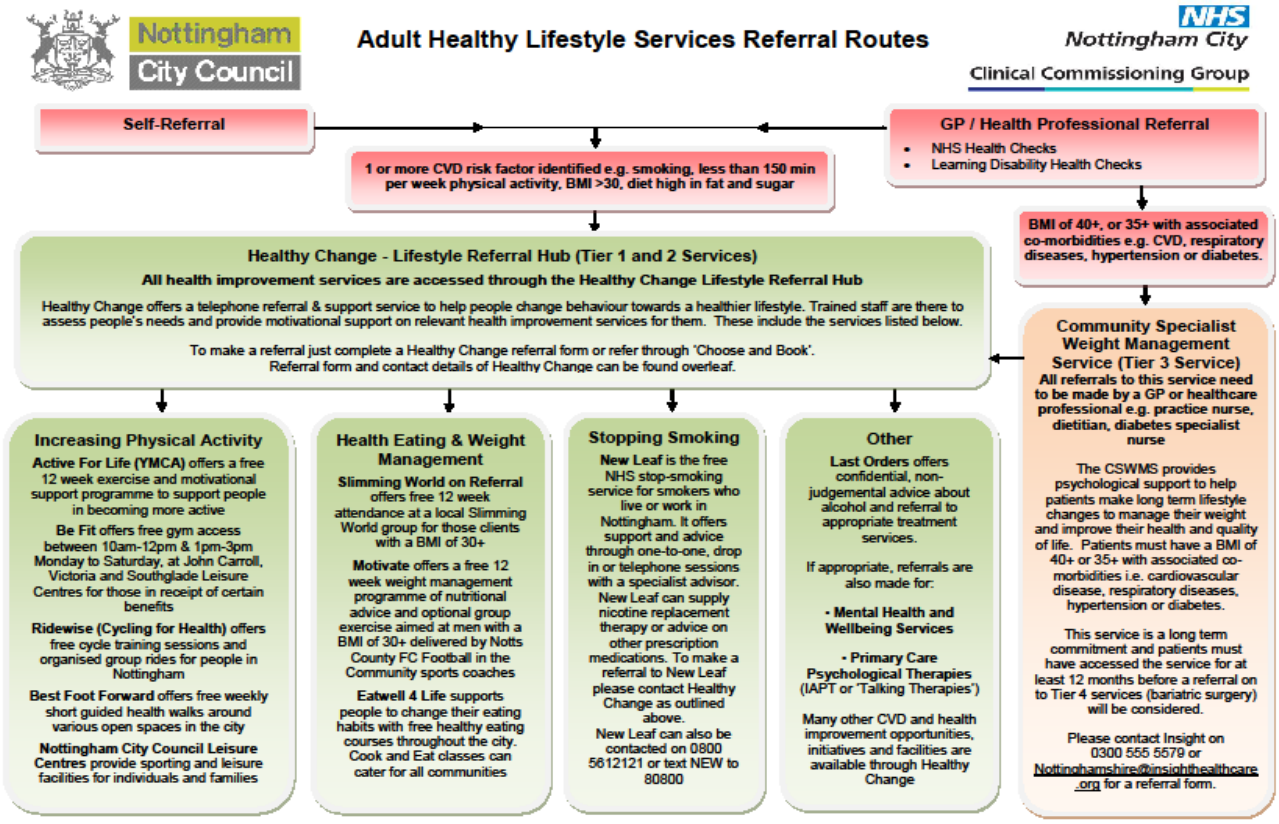
Figure 11 Strategic Framework Diagram (with some examples)



The t management programmes for children and young people may be either wei ght loss, depending on their age and stage of growth. Physical acti nutrition and paediatric nutrition (see pregnancy and maternities) are con here.

Figure 12: Adult Healthy Lifestyle Services Referral Routes (Source: Nottingham City CCG 2015)

These services are being re-commissioned in 2016.



Listed below are examples of identified universal, targeted and specialist interventions. Some of the activity that will help to reduce obesity at a population level is inherent within current general provision. This should be monitored and evaluated in terms of the contribution made to the management of obesity.

<table>
<tr><th colspan="4">Specialist interventions/services for children, families and adults who are overweight and obese (using 91st & 98th centile cut offs for children)
Add in Tier 3 and 4 services</th></tr>
<tr><td>Age Group</td><td>Estimated Number</td><td>Estimated number eligible for intervention[2]</td><td>Services in relation to need</td></tr>
<tr><td>2 - 4 years</td><td>2467
(1357 overweight & 1110 obese)[3]</td><td>136 eligible for Level 1 intervention
*179 eligible for Level 2 intervention
*This includes obese children plus a proportion of overweight children who have had unsuccessful Level 1 intervention</td><td>Healthy Child Programme (Level 1)
• Families of overweight children receive brief intervention and intensive support including signposting to local healthy living opportunities by Health Visitors, Family Nurse Practitioners, GPs and Practice Nurses.
• There is capacity for all eligible families.

There is no specific intervention provided for level 2 – 4 year olds who are identified as obese other than support offered through the Healthy Child Programme by health visiting.</td></tr>
<tr><td rowspan="2">5 - 16 years</td><td rowspan="2">9750

(5000 over weight & 4750 obese)</td><td rowspan="2">500 eligible for Level 1 intervention

*730 eligible for Level 2 intervention

This includes obese children plus a proportion of overweight children who have had unsuccessful Level 1 intervention)</td><td>Brief Intervention (Level 1)
• Overweight children/families receive brief intervention and intensive support including signposting to local health living opportunities by school nurses, GPs and practice nurses. There is capacity for all eligible families through the School Nursing Service (Healthy Child Programme, 5-19 years).</td></tr>
<tr><td>Healthy Weight Support Programme
• Nottingham’s Healthy Weight Support Programme is an evidenced based targeted weight management service provided by Nottingham CityCare School Nursing service which encourages children and families to establish and maintain healthy lifestyles by promoting skills and knowledge around nutrition, physical activity and behaviour change. The service consists of an individually tailored package of support including home visits/assessment and 3 follow up sessions with school nursing. This service launched in September 2014.
• There is capacity for 80 children/families to have a 3-month package of support per year.

Team Nottingham v Obesity (age 5-13 years)
This is a Lottery funded programme delivered by Notts County Football in the Community in collaboration with other professional sports clubs</td></tr>
</table>

[2] Estimation based on assumption that approximately 10% will be committed and motivated to change
[3] Based on HSE Obesity data for 2-4 years olds (2013)

			(Nottingham Forest, Ice Arena, Beeston Hockey Club, Nottingham Rugby, Trent Cricket Club). The programme is delivered over 12 week blocks, each sessions lasting 1 ½ hours and consists of food based workshops and physical activity sessions. The programme is mainly delivered with targeted schools. The criteria for taking part includes being inactive and of an unhealthy weight. The programme is offered to both Nottingham City and Nottinghamshire County schools. Since March 2015 until October 2015, 535 young people have taken part. <u>The project will end December 2015.</u> **Slimming World on referral** (Level 2) • Young people aged 11-15 can be referred with an accompanying parent. • During 2014/15, 10 young people attended.
16+	69000	4000 (assumes (10% of female and 1% of male population)	**Slimming World on referral (**BMI of ≥ 30) 2800 adults accessed the programme in 2011/12 and 3600 12 week courses have been utilised. Twenty six percent of obese patients are achieving at least 5% weight loss.
18+	750	340 (assumes 45% of pop)	**Weight management pathway for women during pregnancy (**BMI of ≥ 30) Maternity services are able to refer women to Slimming World and other targeted prevention services via Healthy Change.
18+	6000	600 (assumes 10% population)	**Nottingham Community Nutrition and Dietetic Service (BMI of ≥ 35)**The service provides community dietetic clinics for patients with a BMI 35 kg/m^2 and co-morbidities. This includes one to one consultations for therapeutic dietetic referrals and/or structured therapeutic advice and support for patients by telephone.
18+			**Community specialist weight management service (Tier 3 service)BMI≥40 or 35+ with associated co-morbidities i.e. cardiovascular disease, respiratory disease, hypertension or diabetes..** This service provides psychological and dietetic support to help patients make long term lifestyle changes to manage their weight and improve their health and quality of life. Patients All patients will also be offered an appointment with a metabolic consultant to assess their suitability for surgery. This service is a long term commitment and patients must have accessed the service for at least 12 months before a referral on to Tier 4 services (bariatric surgery) will be considered.
18+	900	35 (assumes 4% uptake (EMSCG)=35 procedures	**Bariatric surgery (BMI of ≥ 50 or 45 with co-morbidities)** The majority of procedures for Nottingham patients are conducted at Derby Hospitals NHS Trust with a few additional procedures being conducted in Leeds or elsewhere. There were 29 procedures in 2009/10, 23 in 2010/11 and 28 in 2011/12 (up to February 2012).

Targeted Interventions for those most at risk of overweight and obesity	
Healthy Child Programme (0-5 and 5-19) (progressive programme)	The HCP seeks to reduce health inequalities and meet the needs of the most at-risk children, young people and families through a progressive universal model. Parents of overweight and obese children receive appropriate information and signposting to further sources of advice/ support; and referral to appropriate weight management services.
Breastfeeding peer support (targeted) & social marketing campaign	CityCare Partnership has provided a breastfeeding peer support programme since September 2012. This service offers targeted one-one support for mothers aged under 25 years by paid peer supporters. A breastfeeding social marketing campaign (Be A Star) was launched in October 2012. Midwives, health visitors and peer supporters distribute breastfeeding materials to young mothers.
Active Families	This is an intervention which provides family physical activity sessions in city leisure centres and community settings offering a variety of activities suitable for the whole family
Healthy Start - Free vouchers for fruit and vegetables	Healthy Start is open to pregnant women and families with children under 4 years. Vouchers are provided to exchange for fresh fruit and vegetables as well as milk and infant formula milk.
Healthy Weaning Programme CityCare	Healthy weaning education targeting those living in deprived areas of the City.
Cook and Eat sessions – practical cooking skills Citycare	Practical cook and eat sessions for parents to increase cooking skills and promote healthy eating incorporating behaviour change techniques targeting those living in deprived areas of the City e.g. Eatwell for life
Healthy Community Centre Cafes	Ten community centres in the City aim to increase the availability of healthy options. Working with cooks to increase knowledge and skills in cooking healthier options
LTC/CVD Prevention Pathway	The target people aged 40 and over and/or at high risk of cardiovascular disease from identified priority areas. Interventions include Healthy Change, Physical Activity on Referral Service, Best Foot Forward Walks and BE Fit scheme in Leisure Centres.
Maternal obesity pathway	Work has been undertaken with NUH maternity services to improve pathways for the care of obese women during pregnancy. It is focused around enabling community midwives to refer to Slimming World. A new weight management programme for obese pregnant women (Bumps and Beyond) will be launched by NUH in October 2015. . The role of primary care in the preconception period requires further investigation.

Universal Approaches	
Change4Life	Change4Life is the national social marketing programme focusing on promoting healthy weight across the life course. Locally elements of the national programme are utilised through, the NCMP, CityCare Public Health Nutrition team, Sport and Leisure and School Sports.
Baby Friendly Initiative (BFI) in Maternity and Community Health Services	BFI accredits maternity and community health care facilities that have implemented best practice for breastfeeding through implementation of evidence based standards. The accreditation process is in stages which take approximately 5 years to achieve. Nottingham started this process in 2010 and has achieved full accreditation in 2014 and 2015 in both maternity and community health services
Breastfeeding Peer Support (universal)	Nottingham CityCare Partnership provide universal peer support groups for all mothers by volunteer peer supporters. These are delivered in Children's Centres and other community venues. Some groups are also supported by Family Support Workers.
Healthy Child Programme 0-5 (universal programme)	The early identification and prevention of obesity is a key priority in the HCP which is delivered in partnership by NUH midwifery, CityCare Health Visiting/FNP, Early Help services and other early years providers. All families are given information and advice around breastfeeding, healthy weaning, healthy eating and active play/physical activity.
Healthy Child Programme 5-19 (universal programme)	School nurses lead the implementation of the HCP for school aged children. The early identification and prevention of obesity is a key priority in the HCP which is delivered in partnership by school nurses, play and youth and schools/education, All children/parents are offered information and advice about nutrition, physical activity and healthy weight during universal health assessments at school entry, Year 7 and Year 9.
National Child Measurement Programme (NCMP)	The local NCMP is delivered by Nottingham CityCare Partnership school nursing service. Nurses records height and weight measurements of all children in state-maintained schools in reception (aged 4–5 years) and year 6 (aged 10–11 years). Parents/ carers of all children are sent a results letter for their child along with information, advice and support as required.
School Food Action Group	The group aimed to promote and facilitate a whole school approach to healthy eating, the prevention of childhood obesity and the promotion of good nutrition.
Whole School approach to Food	Food for Life have been commissioned to work with 40 schools in Nottingham to give school pupils and their families the confidence, skills and knowledge they need to cook, grow and enjoy good quality, affordable food. To use healthy school meals and the school dining experience as a way to improve nutrition behaviours, positive social interaction and learning opportunities within schools and in the related community.
Sport Nottingham Programme	The Sport Nottingham programme is delivered by NCC Education Partnership and seeks to inspire all children and young people to lead more active, healthier and successful lives, through lifelong participation and achievement in physical activity, physical education and sport.
Healthy Children's Centres	The Healthy Children's Centre standards are due to be re-launched by NCC Education Partnership during 2015. Children's Centres will work towards achieving best practice criteria within four core themes of Personal, Social and Emotional Development, Healthy Eating, Physical Activity and Play and Emotional Health & Wellbeing.
The Cares for Kids Breakfast Clubs	The Cares for Kids charity supports 44 Breakfast Clubs in Nottingham City schools, providing a free breakfast for 1200 children every day.
PSHE Advisory Service (previously known as	NCC's PSHE Advisory Service provides a free universal advisory service for schools within the City. The key objectives of the service are:

Healthy Schools)	• To support City schools' to achieve/maintain their Local Healthy School Status (HSS) (based on the national criteria) within a 3 year Plan-do–Review cycle • To support City schools who wish to develop a more targeted/needs led approach to pupil health and welfare through implementing the Health and Well-being Improvement Model (HWBIM). Schools are supported to achieve best practice criteria within the four core themes of PSHE, Healthy Eating, Physical Activity and Emotional Health and Wellbeing in order to achieve Healthy School Status. The Health and Well-being Improvement Model (HWBIM) offers schools the opportunity to focus on a key health theme, including 'Healthy Weight', and identify measurable outcomes for children and young people.
Nottingham Play Strategy	A strategic framework to enable "All children in the City of Nottingham to access a wide range of appropriate, freely chosen, self directed play opportunities".
Food Health and Environment Strategy	A comprehensive "Food for Thought" strategy for improving food, health and environment in Nottingham was developed through the Food Initiatives Group. The strategy provides a local attempt at an integrated approach to food policies and practices – bringing together local health, environmental, economic, cultural and social issues. This will be updated through the Sustainable Food Cities initiative, that is part of the Health and Wellbeing Board's Sustainable Development local implementation plan.
Leisure Centre Transformation programme	Programme to improve the Leisure Centre Facilities in the city and the services provided.
Active Travel: Transport investment programmes through Local Transport Plan, Local Growth Fund and external funding opportunities such as Cycle Ambition funding.	LTP and Local Sustainable Transport Fund has supported significant programmes of activities from 2011/12 – 2015/16 including creating places for people by improving public realm (e.g. 20 mile per hour limits, Nottingham Cycle Design Guide) and local transport infrastructure (e.g. commuter cycle routes, Citycard Cycle Hubs) combined with active travel services, events and information (e.g. annual Footprints walking challenge for primary schools, Bikeabilty and Lifecycle cycle training, Cycle Centres, Citycard cycle hire, Ucycle project in hospital, universities and colleges, journey planning, community rides and walks) to support travel behaviour change and promote uptake of sustainable transport, walking and cycling. Future funding opportunities through LGR are focused on capital funding with limited revenue funding available.
Active Travel	Through its LSTF programme Nottingham City Council has established 3 Community Smarter Travel Hubs serving the North, Central and South localities of the City providing an innovative community engagement approach to travel behaviour change with a focus on services to support walking and cycling. Funding bids are being progressed to continue the Hubs services with a focus on access to employment for 2016/17 onwards.
Breathing Spaces Strategy	The Strategy sets out proposals for the strengthening of local community engagement in the management and improvement of open and green space to achieve better quality, sustainable open and green spaces that are accessible and inviting to use e.g. 5 new outdoor gyms being developed in 2012.
Core Strategy and the Local Plan	Joint working to ensure that the built environment supports and encourages physical activity and healthy eating.
Healthy Workforce	There is an established Healthy Workforce programme at Nottingham University Hospital Trusts called QActive.

Summary of services in relation to need – children and young people

There are approximately 49,600 children aged 2 - 15 years resident in Nottingham City. It is estimated (using NCMP data 2013/14) that approximately 4200 children/families would potentially benefit from targeted weight management services. Assuming that a minimum of 10% of these is motivated and committed to change if offered the opportunity, sufficient capacity for at least 420 specialist programme places per annum is required via a child obesity pathway. Currently sufficient capacity is provided, however following April 2016 when the Team Nottingham v Obesity programme funding ends, capacity will reduce to 80 places plus a small number of places for young people through Slimming World.

Specialist Services for children and young people (level 3)

Overweight children who have co-morbidities or complex needs are referred for Paediatrician assessment and management. Present services meet demand but further work may be required to ensure appropriate uptake and referral is taking place in the future.

Assets

Sports Participation: Nottingham City Council currently manages 10 leisure centres throughout the City, with 8 swimming pools across the 10 sites.

Active Travel: Through its LSTF programme Nottingham City Council has established 3 Community Smarter Travel Hubs serving the North, Central and South localities of the City providing an innovative community engagement approach to travel behaviour change with a focus on services to support walking and cycling. Funding bids are being progressed to continue the Hubs services with a focus on access to employment for 2016/17 onwards.

-Nottingham City Council delivers a programme of cycle training in schools supported by local cycle training providers. Bikeability levels 1 and 2 and Lifecycle activities will be continued in primary schools in 2016/17 but there is currently no funding for provision in secondary schools once the LSTF funding ends in March 2016.

Areas / groups who are proactive in developing activity in Nottingham: One example of a group that are extremely proactive in promoting sport and physical activity is the Karimia Institute in Bobbersmill. They activity encourage physical activity and sport programmes in their local community and work in partnership with Nottingham City Council Sport and Leisure service to develop programmes for people aged 5 years upwards including football sessions, cycling sessions and are also part of the successful Diversity Academy which has won a national award at the first Asian Football Awards in February 2012.

Sustrans / Sustainable Travel Collective / RideWise: provides support to families and children to learn to cycle with confidence.

Nottingham's parks, open space and allotments

- There are approximately 1500 hectares of green space in the City (almost 700 sites).
- Approximately 25% of the City is green space by area.

- Nottingham City Council manages 126 playgrounds, 10 outdoor gyms (with 4 more on the way), 5 skateparks and approximately 35 Multi Purpose Games Areas.
- There are15 Green Flag award winning parks and 11 Local Nature Reserves in the City.
- During the last 5 years, 42 playgrounds have been developed or refurbished.
- During 2011/12, almost 1500 volunteers from more than 40 community groups and corporate partners were involved in the Park Ranger Service volunteering sessions.
- There are 3,100 individual allotment plots. These are spread over more than 60 sites,
- There is significant local interest in food growing -there are approximately 200 people on the allotment waiting list.

The number, size, usage and typology of green spaces across the city is described in the Breathing Places Strategy.

5) Evidence of what works

The simple definition of obesity doesn't adequately explain and define the complex societal and environmental factors which have contributed to the rapid increase in the prevalence of obesity in the last 20-30 years. Factors which have contributed to this increase include physiological factors, eating habits, activity levels and psychological influences which occur at an individual and societal level (Foresight, 2007).

It is very difficult to estimate cost effectiveness as effect of interventions are usually indirectly related to outcome and are difficult to measure over long-term scales. However, given the high costs of managing obesity and related health conditions and the high and rising prevalence it is likely that the return on investment is high. At present a small fraction of expenditure is on prevention when compared with dealing with consequences of obesity.

> "Tackling obesity is fundamentally an issue about healthy and sustainable living for current and future generations. This is only likely to be achieved if there is a paradigm shift in thinking, not just by Government but by individuals, families, business and society as a whole. There is therefore an urgent need for leadership, vision and, above all, sustained commitment. The case for action can be strengthened by identifying potential synergies and complementarities with other policy goals, such as climate change, to provide multiple benefits. Alignment with these other issues is crucial if the prospect of the majority of the UK adult population being obese in less than 50 years, with its attendant costs, is to be prevented from becoming a reality." Foresight (2007)

Physical activity has been limited by insufficient access to environments conducive to physical activity. It is necessary to take action to make a healthy lifestyle more accessible to more people. Nationally 8.9 million people are currently active outdoors, of these 2.8 million want to do more. Furthermore, 18.2 million people are not currently active outdoors but want to re-engage and participate in the next 12 months. (Sport England 2015). This provides a real opportunity to get more people active and engaging with the natural environment. Nottingham has 2 Outdoor Activity centres and a track record in supporting active travel.

Eating habits have been affected by the rapid increase in food availability over the last decades, especially food with high energy density. At the same time as enabling people in Nottingham to eat more healthily to reduce their risk of obesity and the illnesses associated with it, we can link our efforts with other initiatives in line with international guidance e.g. the

2005 Giessen Declaration, signed by the President of the International Union of Nutrition Scientists and the editor of the journal Public Health Nutrition, with others, called for:

> *"nutrition science to incorporate a more comprehensive understanding of food systems which 'shape and are shaped by biological, social and environmental relationships and interactions. How food is grown, processed, distributed, sold, prepared, cooked and consumed, is crucial to its quality & nature, & to its effect on well-being and health, society and the environment." (Lang et al. 2009 page 121).*

The following NICE guidance have recommendations relevant to the prevention and treatment of obesity:

	Obesity pathway: the prevention, identification, assessment and management of obesity in adults and children http://pathways.nice.org.uk/pathways/obesity#content=view-info-category%3Aview-about-menu	
CG43	Obesity Prevention http://www.nice.org.uk/guidance/CG43	2006
CG43	In the balance : Development of a model Occupational Health system based on the NICE Obesity Guidance for detecting, assessing and managing overweight and obesity in NHS staff in an Acute Hospital Trust.	2011
CG189	Obesity: identification, assessment and management http://www.nice.org.uk/guidance/CG189	2014
PH02	Four commonly used methods to increase physical activity: brief interventions in primary care, exercise referral schemes, pedometers and community-based exercise programmes for walking and cycling.	2006
PH08	Physical Activity and the Environment.	2008
PH11	Maternal and child nutrition.	2008
PH13	Promoting Physical Activity in the workplace on.	2008
PH17	Promoting physical activity, active play and sport for pre-school and school-age children and young people in family, pre-school, school and community settings.	2009
PH25	Prevention of cardiovascular disease.	2008
PH27	Weight management before, during and after pregnancy.	2010
PH46	Assessing body mass index and waist circumference thresholds for intervening to prevent ill health and premature death among adults from black, Asian and other minority ethnic groups in the UK	2013
IPG 471	Implantation of a duodenal–jejunal bypass sleeve for managing obesity http://www.nice.org.uk/guidance/IPG471	2013
IPG 432	Laparoscopic gastric plication for the treatment of severe obesity http://www.nice.org.uk/guidance/IPG432	2012
NG7	Preventing Excess Weight Gain http://www.nice.org.uk/guidance/NG7	2015
	Obesity: working with local communities	2012
QS94	Obesity in children and young people: prevention and lifestyle weight management programmes http://www.nice.org.uk/guidance/QS94	2015
QS111	Obesity in adults: prevention and lifestyle weight management programmes http://www.nice.org.uk/guidance/QS111	2016

Public Health England put forward the five pillars for action to tackle obesity as illustrated in Figure 13

Figure 13 (Source: Public Health England)



6) What is on the horizon?

General

A national Change4life campaign is planned by Public Health England for 2016.

Children

National child obesity strategy: Tackling obesity, particularly in children is one of this Government's major priorities. A new national strategy for childhood obesity is to be published in 2016.

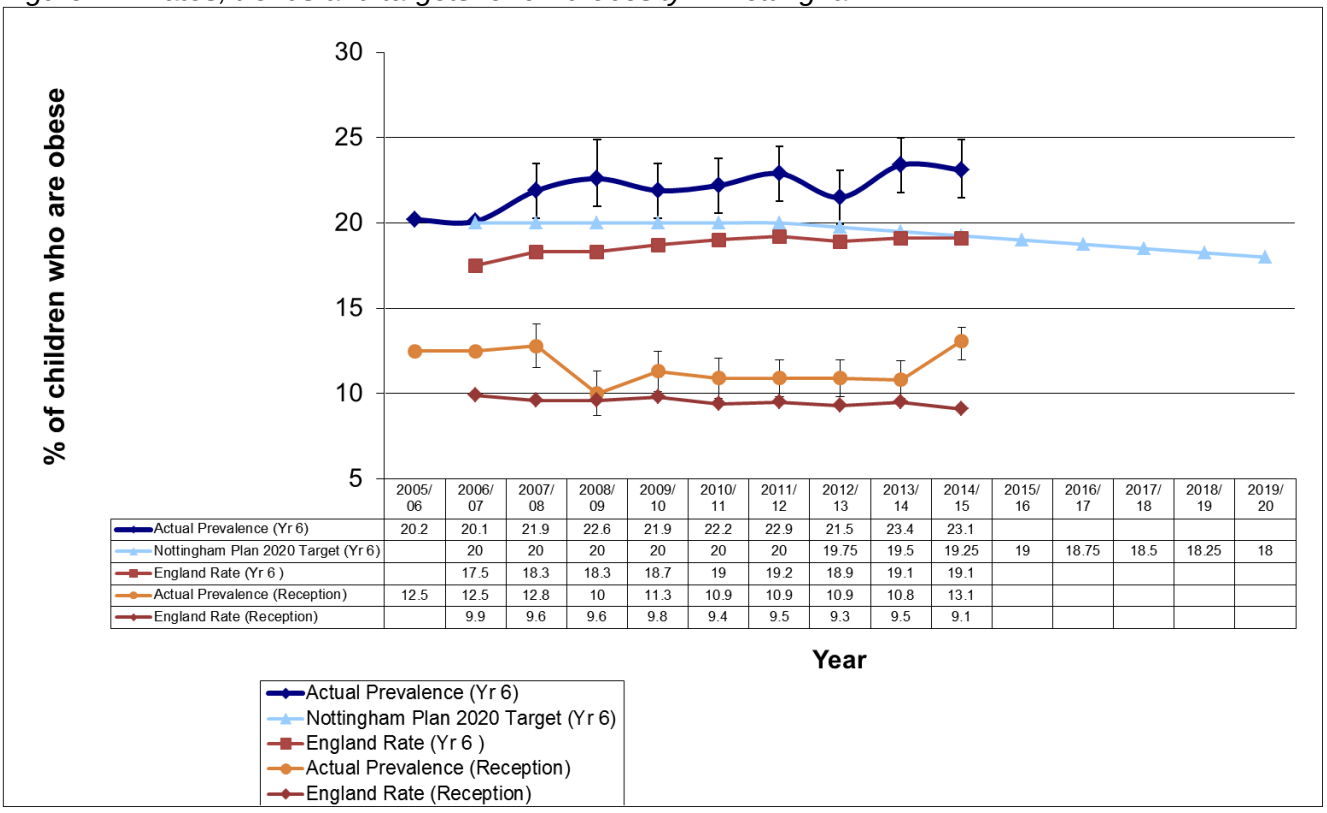
Children and Young People: The commissioning of 0-5 children's public health transferred from NHS England to local authorities in October 2015. This includes health visiting and Family Nurse Partnership ((FNP) targeted services for teenage mothers). One of the high impact areas for the Healthy Child Programme is healthy weight, healthy nutrition (to include physical activity)

When looking at excess weight (overweight and obesity), Nottingham's prevalence of excess weight in Reception aged children appeared to be levelling off, if not declining, however in 2014/15, prevalence was higher than it has been since the NCMP began in 2006. Prevalence in Year 6 children also appears to be increasing and the inequality gap between the England average also appears to be increasing. Please refer back to figure 1.

When looking just at obesity (excluding overweight), obesity prevalence in Reception aged children, increased by 3.2% points in 2014/15 after appearing to be static for five years. This translates to an additional 80 Reception children being obese in 2014/15 to that in 2013/14 (428 compared to 348). The cause of this increase is unknown. National obesity prevalence at Reception was the lowest it has been since the NCMP started in 2006/7 and Nottingham's statistical neighbours did not have a similar increase in prevalence. Due to the strong correlation of obesity to deprivation, it is plausible that increasing levels of deprivation in Nottingham may be a contributing factor. The increasing proportion of school aged children from BME groups may also have contributed to this increase. It is also possible that the increase in 2014/15 may be due to random variation and therefore close monitoring of data is required.

Obesity prevalence in Year 6 appears to have risen in 2013/14 and remained at a similar level in 2014/15. This trend makes achievement of the 2020 target appear increasingly challenging.

Figure 14: Rates, trends and targets for child obesity in Nottingham

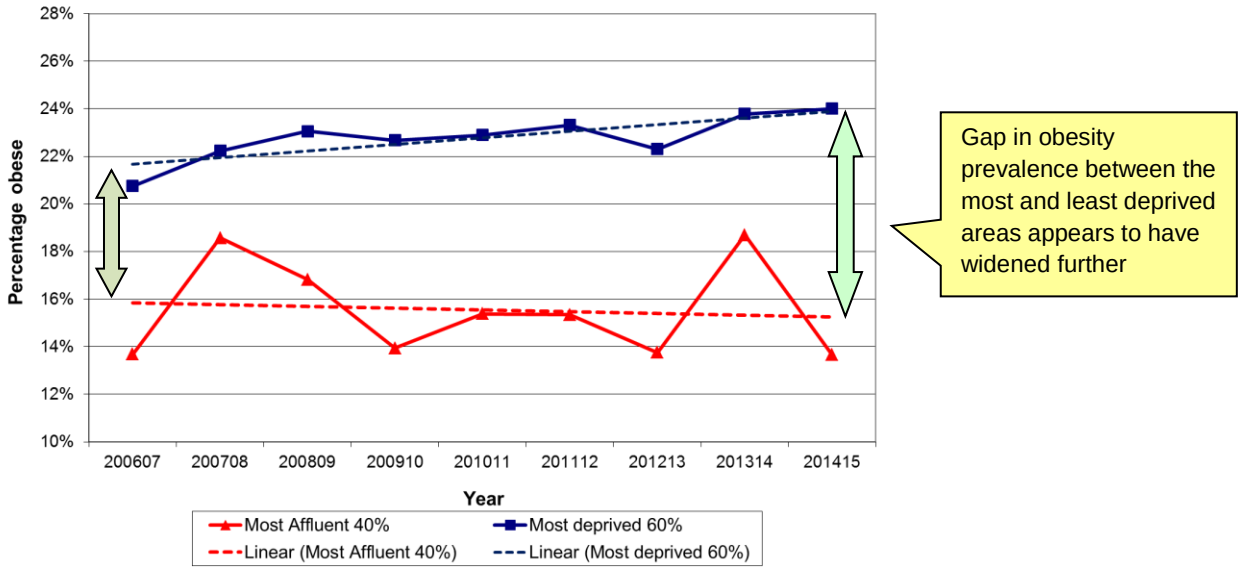


	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Actual Prevalence (Yr 6)	20.2	20.1	21.9	22.6	21.9	22.2	22.9	21.5	23.4	23.1					
Nottingham Plan 2020 Target (Yr 6)		20	20	20	20	20	20	19.75	19.5	19.25	19	18.75	18.5	18.25	18
England Rate (Yr 6)		17.5	18.3	18.3	18.7	19	19.2	18.9	19.1	19.1					
Actual Prevalence (Reception)	12.5	12.5	12.8	10	11.3	10.9	10.9	10.9	10.8	13.1					
England Rate (Reception)		9.9	9.6	9.6	9.8	9.4	9.5	9.3	9.5	9.1					

Trend in widening health inequalities

Nationally, the NCMP data shows the inequalities gap in child obesity appears to be widening among both Reception and Year 6 children (PHE, 2015). 2013/14 data suggest obesity prevalence may be stabilising among the least deprived children, but continuing to increase among the most deprived. Figure 14 illustrates a clear inequality gap between the most deprived 60% and least deprived 40% of the local population. Similar to that seen nationally, the trend in obesity prevalence in the most deprived 40% of Nottingham Year 6 children appears to be increasing over time whilst prevalence in the most affluent appears to be declining; therefore the inequality gap in obesity is widening.

Figure 15: Trends in obesity prevalence in year 6 children by deprivation: Nottingham 2006/7 to 2014/15



Due to the high level of deprivation in Nottingham and the increasing proportion of children from BME groups, these national and local trends suggest that child obesity prevalence is likely to continue to increase in Nottingham and inequalities are expected to widen.

Adults

Predictions of future obesity prevalence are available from the Foresight Modelling Obesities report (McPherson et al, 2007). By 2025, 47% and 36% respectively are estimated to be obese, and by 2050 the proportion of the population estimated to be obese will be 60% of males and 50% of females. These estimates have high degrees of uncertainty and the trend may vary from this and now generally accepted to be excessively high.

- If the number of obese adults does increase in line with these predictions, this will place increased demand on healthcare services, particularly for diabetes services as the number of people with diabetes is predicted to increase as the proportion of obese adults increases.
- When considering whether or not we can afford to fund obesity prevention services, we should consider that “In England, the National Audit Office estimated in 2001 that obesity cost the NHS an annual £480 million (720million Euros) and the wider economy a further £2.1 billion (3.2 billion Euros). By 2004 that cost was estimated to have risen to £3.3-3.7 billion (4.95-5.5 billion Euros) for obesity alone and £6.6-7.4 billion (9.9-11.1 billion Euros) for obesity plus overweight.” (Lang et al. 2009 p111).
- LSTF funding ends in March 2016. This provided a major boost in supporting citizens to travel by walking or cycling which provides free exercise. Future funding opportunities through LGR are focused on capital funding with limited revenue funding available.
- Nottingham is a Cycling City between 2015 and 2017.

7) Local Views

Children and Young People

Parents of the 17 children who had completed the 3 month Healthy Weight Support Programme (September 2014 – March 2015) were sent satisfaction questionnaires. Three (18%) were returned. All parents rated the service as 'excellent'. Parents particularly liked the free leisure provision provided through leisure centres, visual aids, the sugar and fat kits and sample meal images. Parents talked about the difference the programme had made to the whole family. The key suggested improvement to the programme was to improve the leisure offer to children aged over 8 years, especially teenagers. Caution must be exercised in interpreting these views as being representative of all users, due there only being three responses.

Adults
A Nottinghamshire County Health and Wellbeing Board seminar held in October 2015 focused on how the planning system can promote healthy communities, ensure adequate healthcare infrastructure and reduce health inequalities. It was held as part of a national programme of seminars and examined the planning and commissioning of healthcare infrastructure. It provided some useful insights for County colleagues and a similar event for the City would be beneficial for improving understanding between professionals to enable the planning of an environment conducive to reducing obesity.

Focus Group: 9 Your City, Your Say Nottingham Citizens' Panel members took part in a focus group to help identify sensible approaches to tackling obesity, what could help citizens to maintain a healthy weight in Nottingham and how to communicate these. The group provided some valuable insights from a citizens perspective.

The following key areas emerged from the discussion:

- A key theme was environment versus individualism:
  "Some areas like the council estate I live on for last 10 years is one of the lowest statistics for many things. We have constant take away menus and poor access to fresh fruit and veg and meat. There needs to be local community place to access these run by a charity or community non-profit complete with lists of cheap fresh meals from scratch"

- Individuals are impacted by their environment and if their environment is obesogenic then it is harder to lose weight:
  "Many of the key points we made – and I made them as much as anyone else – seem on reflection to be putting the onus of responsibility upon the individual. This ignores the fact that the individual is a largely powerless figure in today's mass society, yet, it is a style of thought that has grown in our society since approximately the mid 1980's"

- Citizens with existing health conditions experience side effects of some medication of 'weight gain' and people who give up smoking may gain weight due to improved absorption of food and increase in appetite.
  "Mental health 'victims' need a softer approach, often weight gain is a side effect of medication, as with some pain relief etc."

  "The media are telling people things regarding "obesity". Whether that information is correct or not is a moot point. Much of it seems to regard people as a kind of dodgy, shiftless mass, wandering blindly to their own destruction, as, to be fair, does most of the suggestions that we made. It does not take into account other causes, for example, medication and non-smoking."

  "I believe that much of my own weight gain is down to two main factors:

a) The use of amytriptyline which I was first prescribed xx 7 years previously xx, and
b) Stopping smoking, which I believe does a lot of good early in life - and virtually none when you are older as I am now. Weight gain is certainly related to it, and many people have given up smoking in recent years."

- Carers were identified as an unseen 'at risk' group:
  "One high group of obese people are often carers (not the paid type who do it for a job) due to demand and lack of sleep as well as stress and injury. These people need more help either via schools, carer's federation or support groups of health/social. Many of these and disabled often have less access to shopping or just one pair of hands to do everything - they are often a forgotten part of society and their own health need gets seriously neglected, wrongly labelled by professionals"

- Access to physical activity opportunities need to be inclusive.
  "I do think it needs highlighting the lack of specific information for disabled people with impaired mobility / movement. Nottingham has more disabled people than the National Average and there are more disabled people with weight / obesity difficulties than non-disabled people. Yet there remains no quality, specific or even targeted information / support around diet, nutrition and appropriate focused physical activity."

- Council to encourage new and change of use building developers to include washing and changing facilities and cycle parking at places of work through planning guidance and tax reduction incentives.
- Expand/promote vegetable growing projects – children and families connected with the earth and benefitting from fresh fruit and vegetables
- Timing and personal support is crucial – "You can use neon posters 30' square that flash with dancing gorillas and the message will still be missed! " Female respondent.
- Positive messages – 'real life' stories work best
- For many people the cause of their obesity cannot easily be addressed by the individual without professional help. Awareness needs to be raised about the causes and practical information about how to tackle obesity.
- There is an overemphasis on ease of weight loss e.g. through exercise. Information is needed about the best way to lose weight.
  "Some areas like the council estate I live on for last 10 years is one of the lowest statistics for many things. We have constant take away menus and poor access to fresh fruit and veg and meat. There needs to be local community place to access these run by a charity or community non-profit complete with lists of cheap fresh meals from scratch"

  "People need to see who they are, and shown what they could be. Many lack major skills. Many have life stories to tell. Listen to them, accept them and educate them."

Men's attitudes to healthy weight and weight management: Qualitative interviews were commissioned in 2011 to provide insight into developing healthy living interventions aimed at men aged 40 and over who were overweight (DH Insight, 2011). Amongst 39 participants this demonstrated the understanding of the need to lose weight and understanding of how to do this. They felt they had a lack of motivation to do so and that traditional dieting was not for them as it did not fit in with the male psyche. The research has provided insight to inform the commissioning of these services.

Pregnant women

Maternity services staff conducted a focus group with 8 women with a pre-pregnancy BMI of 30 or over in March 2012. Key themes identified were:

- Inconsistencies in being weighed or during pregnancy or having high BMI explained.
- Patients wanting to know the risk of their excess weight to their pregnancy and labour.
- Cultural barriers to eating healthily in pregnancy and postnatal amongst Asian women, where women can be encouraged to 'eat for two' and be nurtured with food.
- Patients wanting consistent advice and support about healthy eating throughout pregnancy.
- Confusion in being told not to exercise during pregnancy due to medical problems and then gaining weight.
- Need for accessible/available exercise groups.
- Interest in being able to access Slimming World during pregnancy.

What does this tell us?

8) Unmet needs and service gaps

General Issues

8. Obesity is estimated to affect around one in every four adults and around one in every five children aged 10 to 11 in the UK. (NHS Choices 2014). Almost a sixth of children (16%) aged 2 to 15 years were obese (The Health and Social Care Information Centre 2012).
9. Trends in national and local obesity prevalence suggest adult and child obesity rates are likely to continue rising for the foreseeable future and inequalities are likely to widen without intervention.
10. To be effective in tackling obesity, and particularly to help the poorest in society, activity needs to go beyond health messages and information to consumers. Actions need to be taken to address the structural drivers of obesity. To achieve sugar reduction, this would mean focusing on the environmental drivers e.g. advertising and marketing, price promotions, sugar levels in food and food availability. Price increases on specific high sugar products like sugar sweetened drinks (which has now happened), such as through fiscal measures like a tax or levy, if set high enough, would reduce purchasing at least in the short term.
11. Treating obesity and its consequences alone currently costs the NHS £5.1bn nationally every year (Public Health England 2015).
12. The family environment has a strong influence on a child's development, their eating and activity habits, and predisposition to overweight. Nottingham has high rates of adult obesity increasing the risk of child obesity.
13. Obesity in pregnancy increases the risk of complications for the mother and child during pregnancy and childbirth. The proportion of obese pregnant women in the city is estimated to be higher than the national average which has increased in the last decade.
14. There is a need to continue to expand provision of universal and targeted interventions in order to reduce long-term need for health services to tackle the complications of child and adult obesity.

Children and Young People's Issues

9. Having multiple early-life risk factors is associated with a more than four-fold increased risk of being overweight or obese in later childhood. (CMO 2014)
10. The prevalence of obesity at age 4-5 years and 10-11 years in Nottingham is significantly higher than the England average and is the second highest in the country at age 4-5 years.
11. The proportion of children that are obese doubles between age 4-5 years and 10-11 years.
12. Obesity in children and women is strongly associated with deprivation. In Nottingham where there are high levels of deprivation, this is a significant contributing factor.
13. There is a potential gap in weight management service provision for children aged 2-4 and for 5-15 year olds.
14. The commissioned (mainly adult) weight management service provided by Slimming World is poorly accessed by14-15 year olds.
15. The provision of free leisure provision for families on the Healthy Weight Support programme provided a positivity opportunity for families to be active. The 'activate' programme' is no longer offered as part of the programme which may have a detrimental impact on outcomes of the programme.
16. There is a need to increase capacity and capability ensuring all staff working with children and families are trained to consistently and sensitively raise the issue of

weight and offer appropriate support in line with the care pathway and to promote consistent evidence based healthy eating and physical activity information.

Adults Issues

5. A greater proportion of people not working due to being sick or disabled are obese compared to those that are not obese.
6. Uptake of adult weight management services by Asian women is low in proportion to need.
7. The prevalence of obesity recorded in GP practices is higher in adults with learning disability than the general adult population.
    a. 39% of adults aged 18 years and over (38% of men and 40% of women) were overweight.
8. As obesity is the main risk factor for Type 2 diabetes, the associated health and care costs also rise.

9) Knowledge gaps

1. There is a gap in data on the prevalence of obesity amongst children with learning disabilities and Looked After Children.
2. The national roll out of the Diabetes Prevention Project is anticipated to be 2016/17. It is unclear at present how it will complement and link with existing commissioned services.
3. Evidence of effectiveness of interventions to tackle obesity is lacking and more research is required to understand underlying causes and what works.
4. It would be useful to conduct research into the correlation between environmental factors and obesity levels.
5. Research into effectiveness of obesity prevention interventions in families from disadvantaged communities.
6. Bring together data on a range of obesity indicators and provide at a locality level where possible and share with all partners.
7. Share learning regarding successful interventions for promoting active travel behaviour from the evaluation of the Nottingham Urban Area Local Sustainable Transport Fund programme. The evaluation report will be available in January 2016 and will include the outcome of the WHO HEAT tool analysis. http://www.heatwalkingcycling.org/
8. Carry out further data collation and analysis to understand the trends and patterns of child obesity and also to understand the uptake of services in relation to need with a particular focus on children with learning disabilities and Looked After Children.
9. Improve quality, specific and targeted information / support around diet, nutrition and appropriate focused physical activity for people with physical disabilities and impaired mobility / movement.
10. Consider carrying out a literature review / research into weight gain in citizens who take prescribed medicines such as amitriptyline, stopped smoking and who have been on Healthy Eating and increased physical activity programmes. Is it a common experience for people to gain weight in these circumstances?

What should we do next?

10) Recommendations for consideration by commissioners

General: Overall Strategic Approach

11. The leadership role of the local authority in developing a workable whole systems approach is crucial. Doing so will contribute to helping local authorities and partners meet many priorities including improving quality of life, reducing expenditure and creating stronger communities.
12. In accordance with NICE Guidance PH42 (2012) the Health and wellbeing board should:
    a. ensure tackling obesity is one of the strategic priorities of the joint health and wellbeing strategy.
    b. develop a sustainable, community-wide approach to obesity in accordance with NICE guidelines [PH42] that is coherent, community-wide, and multi-agency in its approach to address obesity prevention and management. Activities should be integrated within the joint health and wellbeing strategy and broader regeneration and environmental strategies.
    c. through the performance infrastructure, should regularly (for example, annually) assess local partners' work to tackle obesity (taking account of any relevant evidence from monitoring and evaluation). In particular, they should ensure clinical commissioning group operational plans support the obesity agenda within the health and wellbeing strategy.
    d. optimise the positive impact (and mitigate any adverse impacts) of local policies on obesity levels. This includes strategies and policies that may have an indirect impact, for example:
        i. continue to develop opportunities that increase physical activity e.g. improve people's use of parks through park wardens and through encouraging active travel through the Local Transport Plan and reducing those which favour car use over other modes of transport.
13. Develop attractive safe open green spaces and build the urban environment to encourage active travel (walking, biking etc.).
14. Re-invigorate the Nottingham Healthy Weight Strategy.
15. New evidence about the impact of sugar on diet and health needs to be taken into account and addressed (PHE 2015). Consider options to support the population to reduce the consumption of sugar in their diets such as:
    a. attracting organisations to Nottingham that produce and sell healthy food products
    b. introducing local pricing mechanisms to make high sugar options less affordable
16. Develop a Healthy Workforce programme.
17. Develop, implement and evaluate the Healthy Weight Strategy and high level action plan with an emphasis on universal and targeted approaches to increase physical activity and improve the diet of the population. These approaches are more likely to reduce the average BMI of the population than high risk group approaches or weight management alone (see also recommendations in the physical activity and diet and nutrition chapters).
18. More research is required to understand underlying causes of obesity and effectiveness of interventions to tackle obesity. Interventions should therefore be rigorously evaluated
19. Joint working with Planning, Transport Planning, Policy and Development Management to ensure the potential for physical activity and healthy eating is maximised, for example, through protecting the places required for people to gain the necessary physical activity, creating a build environment that supports physical activity and active travel and protecting spaces for growing food locally.
20. Rigorously evaluate current interventions by including evaluation criteria from the Standard Evaluation Framework for Weight Management Interventions, (National Obesity Observatory, 2009) in contracts, and through research to inform future impact modelling and commissioning.

Children and Young People

4. Review the availability and accessibility (financial) of leisure activities for young people who are accessing weight management and explore ways to ensure adequate and accessible provision.
5. Prioritise early identification and prevention of obesity through the Healthy Child Programme by setting clear commissioning outcomes within Health Visiting, Family Nurse Partnership and Early Help service specifications.
6. Continue to ensure at least 90% participation in the National Child Measurement Programme.

Prevention: Universal and Targeted Approaches

General

Use the learning from the LSTF programme to plan future active travel programmes that measure the health benefits and identify the necessary resources to implement them.

Children

17. Implement the Nottingham Breastfeeding Framework for Action and ensure a co-ordinated programme of interventions across different settings to increase breastfeeding rates.
18. Ensure early identification and prevention of obesity through the Healthy Child Programme by setting clear commissioning outcomes.
19. Consider the feasibility of implementing Born to Move[4] in partnership with SSBC.
20. Work with nurseries and other early years providers to minimise sedentary behaviour in infants and children.
21. Consider the re-implementation of the Healthy Children's Centre Standard (based on the Healthy Schools Model).
22. Explore the opportunity for Early Help Services to support families around healthy weight (maternal and child obesity) through 'every contact counts'.
23. Explore the feasibility of providing parent interventions to address obesity in an accessible format (eg online).
24. Ensure that the involvement of whole families (parents and children) in interventions that promote both healthier diet and more physical activity are prioritised.
25. Evaluate the Food for Life Partnership to inform future commissioning decisions.
26. Develop family and child nutrition interventions and ensure integrated provision through Children's Centres, schools, and other community settings.
27. Consider expansion of cook and eat sessions provided through the Public Health Nutrition team and the Early Help service.
28. Continue to deliver and expand the school PE sport and adventurous activity programme targeted at children who are least active.
29. Develop local targets for increasing children's participation in high quality PE and sport in schools.
30. Continue universal provision of support to schools around healthy weight through the Healthy Schools team and Health Improvement Facilitators within school nursing.
31. Ensure that the development and improvement of school playgrounds is strategically planned.
32. Encourage secondary schools to prioritise the reduction of fizzy/energy drinks within the framework of Healthy Schools..

Specialist – Weight Management Services

5. Review the child obesity pathway to ensure there is sufficient targeted weight management provision for children and young people from age 2-15 years.

[4] Born to Move - is a home visiting programme for families with a child between the ages of nought to five that encourages parent and child active play to improve the child's motor co-ordination and support early language and literacy skills.

6. Improve access and referral route to Slimming World for Young People and their Families.
7. Ensure the early years workforce understand referral routes into the child obesity pathway.
8. Conduct robust evaluation of the healthy weight coordinator support package.

Adults

6. Prioritise and consider the needs of pregnant women and new mothers in the development of the adult healthy lifestyle programmes. Explore ways to increase the access of Asian women to weight management.
7. Ensure weight management is accessible to adults with learning disability
8. Continue to develop the weight management and care pathway for women, before, during and after pregnancy.
9. Evaluate the effectiveness of the NUH Maternal Obesity Programme (Bumps and Beyond) including equity of access.
10. Continue to build the capability of the workforce to ensure those working at a local level are clear about promoting the benefits of a healthy weight and feel confident in sensitively raising the issue with those who are overweight or obese.

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