

JSNA: Childhood obesity

Introduction

Obesity represents the point where weight gain poses a serious threat to health. It results from an energy imbalance, taking in more energy than is used. Getting the right balance in children is difficult as a child's growth is only possible if energy intake (food and drink) exceeds the energy spent. If the intake exceeds that needed for growth, then the excess is stored as fat and the child becomes overweight.

The World Health Organisation (WHO) have described obesity as an epidemic in the developed world and is a major risk factor for many chronic illnesses including Type 2 diabetes, cardiovascular disease (CVD), hypertension, stroke, and some types of cancer. Furthermore, the WHO identifies childhood obesity as one of the most serious Public Health challenges of this century¹.

Nationally, almost a third of children are either overweight or obese and projections by the Government Office for Science *Foresight* programme demonstrate that without serious action, this figure will rise to two thirds by 2050. *'Healthy Lives, Healthy People: A call to action on obesity in England'* includes an ambitious goals to achieve a 'sustained downward trend in the level of excess weight in children by 2020'². However, the rise in obesity is a global issue and is the result of a complex fusion of societal and individual factors. This presents a considerable challenge to local services and partners.

The financial burden of overweight and obesity to NHS Bolton is set to rise significantly. The estimated annual cost is £81.3 million in 2010 (an increase from £78.3 million in 2007) and this will rise to £86.9 million in 2015³. Unless action is taken this financial burden is set to grow in the future.

Implications for commissioning

Bolton's Healthy Weight Strategy 2012-2017 forwards a top ten recommendations for tackling obesity locally:

1. Restrict the number and sittings of new takeaways;
2. Introduce an award scheme to improve the health offer of existing catering establishments;

¹ World Health Organisation (2013)
<http://www.who.int/topics/obesity/en/>

² Department of Health (2011) *Healthy Lives, Healthy People: A call to action on obesity in England*, DoH.

³ Foresight (2007) *Tackling Obesity: Future Choices*, Foresight.

3. Improve breastfeeding initiation and maintenance rates;
4. Implement a HEYS award (Healthy Early Years Setting Award) in Bolton;
5. Ensure a specific focus on active play and physical activity for children aged under 5 and families;
6. Ensure there is a strategic approach to improving physical activity levels across the borough and physical activity interventions are delivered alongside health eating ones;
7. Galvanise support for the 'Farnworth Project' – a multi-agency targeted approach to tackling obesity in an area;
8. Proactively follow up children identified as overweight and obese through the National Child Measurement Programme;
9. Ensure weight management services for obese pregnant women are commissioned;
10. Formally commission a weight management service for those aged 5-7 years in the borough.

For recommendations specific to organisations, commissioners, and services in Bolton, as well as those related cross-cutting themes, please see the full Strategy – available [here](#).

Who's at risk and why?

Childhood obesity is influenced by age, gender, ethnicity, and socioeconomic deprivation. Families most at risk are those where one or both parents are overweight or obese, and so prevalence is further influenced by the parallel increases in adult obesity.

As such, with the exception of age, gender, and ethnicity many of the risk factors for childhood obesity are modifiable and centre upon healthy lifestyle changes towards a healthier diet and more physical activity in everyday life supported by environment where the healthy choice becomes the easy choice.

In addition, evidence suggests that there is a reduced incidence of obesity at 5 years old in breast-fed babies compared to bottle-fed⁴.

Children with mental illness have an additional level of need as they are more likely to lead unhealthy lifestyles, take little exercise, and become obese as a direct result of the symptoms and treatment associated with their illness.

⁴ Foresight (2007) *Tackling Obesity: Future Choices*, Foresight.

The level of need in the population

Impact on life expectancy

Obesity has a significant impact on morbidity, especially Type 2 diabetes which influences healthy life expectancy in particular.

Mortality

Obesity increases the risk of many diseases including CVD and cancer – the two biggest killers in Bolton.

Prevalence

Childhood obesity is measured through the National Childhood Measurement Programme (NCMP) whereby local health teams go into schools and weigh and measure children in Reception and Year 6. In Bolton, we have a high participation rate for this programme.

Bolton's Reception age children generally have a healthier weight than the North West and England, but are more likely to be underweight, which is associated with Bolton's South Asian population. However, this relatively positive picture changes by Year 6 where Bolton performs poorly across all weight categories. In Year 6 Bolton has a higher prevalence of underweight (2.0%), and obese (20.7%) than is average for both the North West region and England as a whole. Comparatively, 8.8% of Bolton's Reception children are obese but this increases to 20.7% in Year 6, and this is consistent with the pattern seen nationally. Obesity in Bolton's Year 6 children is the only weight category to increase significantly over the period of the NCMP.

Whilst not significant, prevalence of obesity has reduced slightly in Bolton's Reception children and in 2011/12 year 6 obesity and overweight did not increase for the first time since 2008/09. In general, since 2006/07 when the NCMP began Reception shows a slow decline in the number obese while the opposite is true for Year 6 children. However, for Reception children the prevalence of those overweight is greater than those obese and this picture is reversed by Year 6 – this reflects the national trend. Children of South Asian origin in Bolton are more likely to be underweight, while the Asian Pakistani population is more likely to be obese compared to the Asian Indian population.

While those in the most deprived quintile are far more likely to be underweight, obesity is highest in children from quintile 3, with the most deprived and quintile 2 also having a high prevalence. This maps geographically across Bolton where with some exceptions, children are more likely to be obese in the deprived South East and East of the borough. In particular, the Children Centre Reach Areas of Lord Street & Grosvenor, Oxford Grove, The Orchards, and Tonge have been found to have significant proportions of obese children.

In 2011/12 67.6% of Bolton mothers were initiated to breastfeed their new-born child. This is higher than average across the North West (62.0%) but lower than England (74.0%). Breastfeeding prevalence at 6-8 weeks in Bolton is 36.0% which is a significant increase since the start of the NCMP.

The Healthy Weight, Healthy Lives Obesity Segmentation Tool shows the largest proportion of Bolton families to be in cluster 5: 'Strong family values and parenting skills but need to make changes to their diet and activity levels'. Large proportions of Bolton's families are also clustered into groups 4 – 'Living Healthy' – and 1 – 'Struggling parents who lack confidence, knowledge, time, and money'. Analysis demonstrates that over a third of Bolton families in cluster 5 and half of families in cluster 1 reside in the most deprived neighbourhoods of the borough⁵.

Key JSNA Indicator Sheets

CHILD AND MATERNAL HEALTH: NCMP Reception Children

CHILD AND MATERNAL HEALTH: NCMP Year 6 Children

CHILD AND MATERNAL HEALTH: Breastfeeding

Current services in relation to need

Bolton has a high participation rate for the NCMP programme and this should be maintained in the future for consistent monitoring of childhood obesity levels.

The Children's Healthy Weight Team delivers weight management services for children from the ages of 0-18 years (19 years if learning disability). The main focus of the service is the MEND (Mind, Exercise, Nutrition...Do It!) programme which is an evidence-based, 10-week, family healthy lifestyle programme for children above a healthy weight. The team currently delivers three MEND 7-13 (for 7-13 year olds) programmes each year which reaches a maximum of 42 children. Families are further supported as part of a two year support strategy post programme through the graduate scheme which includes regular healthy growth checks, weekly activity sessions, MEND world website, Active Young Bolton website, and a quarterly magazine, to help sustain changes made.

More complex cases are seen by a specialist children's dietician. Referral criteria for this clinic is a BMI >99.6th centile +3.5 standard deviation score (sds) or a BMI >99.6th centile with co-morbidities, extensive learning difficulties or safeguarding concerns. A joint assessment clinic is conducted by the dietitian and Advanced Nurse Practitioner to allow new patients to be assessed holistically and referred onto other services if appropriate. Children with

⁵ National Obesity Observatory (2009) *Healthy Weight, Healthy Lives: Market Segmentation and Mapping*, NOO.

unusual blood results are sent to Manchester Children's Hospital which runs four clinics per year.

More than 96% of schools in Bolton are Healthy Schools. Once this status is achieved, schools are then invited to join the enhanced Healthy Schools programme. This requires each school to work in depth on two of Bolton's priority areas, one of which is Healthy Weight and demands a whole school approach to tackling the issue that includes clear school policy, leadership, teaching and learning, school culture, support services such as school nurse drop-in, and ensuring a pupil voice on the issue amongst others. There are 13 schools on the enhanced programme who have chosen Healthy Weight as one of their priority areas.

For the younger age group, the Food and Health Team deliver weaning parties and the 'Happy Healthy Toddler Group' for 2-4 year olds. The 'Happy Healthy Toddler Group' is an eight week programme that supports the key principles of the Change4Life campaign.

Bolton has a large South Asian community (10.3%) and this population group has susceptibility for obesity and Type 2 diabetes. Research has shown that once socioeconomic deprivation is controlled for (and its associated factors such as parental knowledge, confidence, and time) the differences between ethnic groups may not be that great. However, appreciation of cultural issues is vital for appropriate management of childhood obesity, as well as successful prevention.

Social marketing research should continue to be used to increase the appropriate targeting and take up of initiatives for at risk groups.

In Farnworth there is currently a pilot to test whether a successful French community intervention called EPODE (Ensemble prévenons l'obésité des enfants)⁶ which saw reductions in childhood obesity levels could be replicated. The key to EPODEs success was coordinated activity of a number food and physical activity programmes which tackled obesity at the individual, community, and environment level. The rationale for selecting Farnworth are the high levels of obesity in both children and adults, and deprivation. The pilot includes a focus of activities delivered, in 12 Farnworth/Little Lever schools, by a range of organisations including Oral Health, Healthy Schools, Bolton Wanders Community Foundation Trust, Bolton Market, Bolton Arena, Sports and Active Living Service and MEND. In addition the schools are working towards enhanced Healthy Schools focusing on healthy weight and are introducing whole-school changes to support healthy weight. The five year pilot is currently in its second year. The impact of the project is being measured in part by weighing and measuring all Farnworth primary school children every year, this is in addition

⁶ EPODE (2013)
<http://www.epode.fr/>

to the normal weighing and measuring of Reception and Year 6 pupils through the NCMP. The primary results from project year 1 to project year 2 have shown a significant decrease in obesity of 8% for pupils in Year 2 (6 and 7 year olds). Next Steps...

- We are currently undertaking an evaluation of the project to capture and share good practice around changes the schools, parents, and children might have made as a result of being part of the project and their experiences of being part of the project. This will take the form of focus groups with schools, parents and school councils. It is anticipated that the findings will lead to further improvements in the delivering of the project next year;
- It is also the ambition to extend the project into the wider Farnworth community and ensure that there is a focus of resources in the Farnworth area. For example in the early years it is anticipated that the Children Centres and other early years providers will also take part in and promote healthy eating and physical activities and in the future enrol in the Bolton HEYS (Healthy Early Years Settings) award;
- In relation to tackling the obesogenic environment it is proposed that Farnworth will be a test bed for projects such as the takeaways project and the proposed healthy catering award.

Cost effectiveness

There are few examples of child obesity interventions that have been subject to economic evaluation. NICE recognises:

“...a paucity of data on the cost effectiveness of interventions, particularly interventions undertaken in the UK and with more than 1-year follow-up”⁷

Despite this, NICE concludes that non-pharmacological interventions (chiefly around diet, behaviour, and physical activity) appeared to be a cost-effective use of resources. However, in order to find evidence of what is effective it is necessary to look internationally where interventions have been evaluated using cost-benefit analysis. A recent study by the Organisation for Economic Cooperation and Development (OECD)⁸ considered the health outcomes of a range of interventions based on additional life years in good health (DALYs). There are limitations to this work (modelled on work in different OECD countries, some interventions not aimed solely at children, as well as others) but those beneath the UK threshold for cost-effectiveness as determined by NICE (£30,000 per life year gained) were fiscal based measures, followed by targeted physician-dietician counselling, and food labelling. School based interventions proved to be the least cost-effective when evaluated over ten years, but improved significantly when evaluated over 100 years. This is because

⁷ National Institute of Clinical Excellence (2010) *Obesity: Guidance on the prevention, identification, assessment and management of overweight and obesity in adults and children*, NICE.

⁸ Organisation for Economic Cooperation and Development (2010) *Obesity and the economics of prevention: Fit not fat*, OECD.

benefits may not be apparent immediately, but will accrue over the life course of the child. However, interventions combining a range of determinants of poor health (in addition to obesity) and aimed at a range of age groups carried out in schools show improved cost-effectiveness.

The most comprehensive study prior to the OECD one above was carried out by the Victorian Government Department of Health Services in 2006⁹. This study found that the interventions which were least cost-effective were all school-related programmes to increase child activity such as walking school bus, programmes aimed at addressing travelling to and from school, and after school activities. The most cost-effective included TV advertising restrictions for high fat/sugar foods and drinks, and school-based programmes to reduce consumption of sweetened carbonated drinks and similar aimed at reducing TV viewing.

Finally, individual evaluation from the UK and US found a range of intervention programmes to be cost-effective and included in this is the MEND programme which we have in Bolton. MEND is a community based programme that has been implemented throughout England. Evidence proves the MEND programme is cost-effective (£1,672 per QALY (Quality adjusted life year)) and the reasons cited include the involvement of both children and parents, high participation rates, the combination of healthy eating and physical activity, and its community based delivery which is accepted, non-stigmatising, and low cost.

Projected service use and outcomes

Obesity amongst 2-10 year olds has increased significantly between 1990 and 2010 but there are growing indications that the previous upwards trend in childhood obesity may now be flattening out. However, it is still too early to accurately judge whether this represents a long-term change in the trend, particularly for older boys and younger girls¹⁰.

In addition, prevalence in adult obesity has been increasing rapidly and if left unchecked can be expected to continue into the future, having a negative effect on the level of childhood obesity in the borough.

Evidence of what works

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

⁹ Victorian Government Department of Human Services (2006) *ACE-Obesity: Assessing Cost-effectiveness of obesity interventions in children and adolescents*, State of Victoria.

¹⁰ National Obesity Observatory (2013)
<http://www.noo.org.uk/>

Community views and priorities

National Child Measurement Programme Pilot feedback to parents – Parents' Views

This consultation was conducted by Bolton Community and Voluntary Service and gathered the views of parents with regards to how their child's height and weight could be fed back and what support could be offered.

Parents also identified wider issues which affected their children's ability to maintain a healthy weight including:

1. Game consoles;
2. A lack of facilities in certain areas, particularly Farnworth;
3. Cost and pressure from advertising, and what other children were eating;
4. Large number of takeaways in the area, particularly in Rumworth, and the extensive advertising of these;
5. Parents wanting a ban of junk food advertising around the school area.

The report recommended the following:

1. The production of one leaflet for each area of activities for children, to include park facilities, leisure facilities and after schools activities;
2. Provide activities at a local level which include parents, for example, cook and taste sessions that are not necessarily targeted only at children who are overweight;
3. Identify gaps in provision of healthy activities during and after school across all primary schools in Bolton;
4. Where possible a range of activities should be offered to parents to encourage healthy lifestyles in addition to the Mend programme.

Healthy Weight Strategy meeting July 2010– The Professionals' views

A wide range of stakeholders were invited to the strategy meeting reflecting the breadth and complexity of the agenda. A life-course approach was taken and stakeholders were asked to map a day in the life of a Boltonian identifying what the challenges and barriers to maintaining a healthy weight are, and what the top priorities should be to tackle these. The following were identified.

The under 5s:

1. Investment in the obesity agenda particularly focusing on the early years e.g. health visitors;

2. Breastfeeding;
3. A campaign to reduce screen time i.e. TV/Computer.

Those aged 5-18 years:

1. Enhanced Healthy Schools model - a package of support with a wide range of opportunities/activities including school travel plans, after school clubs (prevention), extended school programme, bike ability etc. Parental involvement and education is vital;
2. Active Parks at the weekends. Play grounds. Free swimming for the under 16s and over 65s;
3. Interventions in place for very obese;
4. Advertising legislation.

Adults:

1. Accessibility and affordability of fresh fruit and vegetables;
2. The importance of breakfast and how the workplace can positively support this;

A cultural, physical and social environment that supports healthy weight.

Equality impact assessments

No recent local equality impact assessments have been carried out that we are aware of. If you are aware of any such work locally please let us know at [Bolton Health Matters](#).

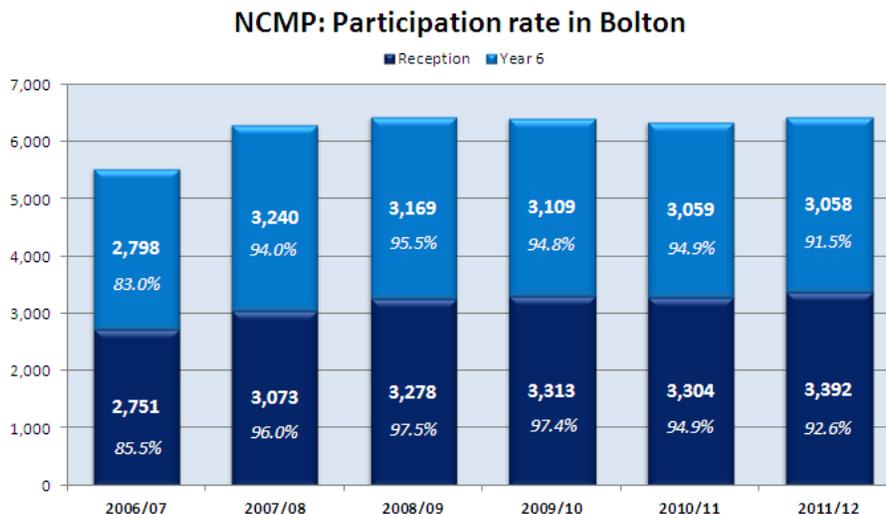
Unmet needs and service gaps

Nationally and locally the proportion spent on prevention of obesity is small when compared to the costs involved in dealing with the management and consequences of obesity in the long-term.

Nationally, at a population level the decreases in obesity prevalence and the changes in the distribution of BMI among Reception children has been a 'healthy' change. However, obesity prevalence has decreased most among the least deprived children and has shown little change among the most deprived. There is evidence that prevalence of obesity in some of the Reception population is increasing – especially for Indian boys.

Nationally, Year 6 obesity is moving in an 'unhealthy' direction – meaning that the risk of future obesity related ill health among children this age has increased over recent years. Again, this is not distributed evenly – the rate of increase is higher in more deprived areas and is Asian ethnic groups, especially Asian girls.

Historically in Bolton, the participation rate in the NCMP has been lower in Year 6 children compared to Reception children and in 2010/11 the Reception participation rate fell to the level of that seen in Year 6 for the first time. In 2011/2012 the rates fell again; Reception participation rate was 92.6% and Year 6 participation was 91.5%.



Children are currently measured at the two year health check carried out by Health Visiting. At present there is no robust pathway in place or a mechanism for recording, sharing, and analysis of this data - therefore this is a piece of work that needs to be undertaken as part of the development of the Healthy Child Programme. It is important that locally we identify high risk children as early as possible and invest in interventions to prevent the development of obesity focusing on maternity and even pre-conceptually in the first place. Current gaps include lack of pre-conceptual advice for women around establishing healthy eating and physical activity habits, no formally commissioned weight management service for obese pregnant women, and no mainstream breastfeeding support service in the Wards which is needed to increase initiation and duration of breastfeeding (currently piloting breastfeeding support workers in the postnatal Ward).

NCMP feedback letters are sent to parents of children not in the healthy weight category throughout the year. This is the first year the feedback letters have been sent borough-wide, with a pilot taking place in Farnworth last year and as such the pathway and providers need robust methods to deal appropriately with the potential increases in demand for local services.

There is a current gap in services for the 0-2 year age group. There is a need for training of front line staff who have the opportunity to raise the sensitive issue of obesity to ensure that as many children enter the pathway as possible. To date some Health Visiting and Children

Centre staff have been trained on the nationally accredited HENRY programme (Health Exercise Nutrition for the Really Young).

Given the higher propensity for obesity in childhood when one or both parents are overweight or obese, interventions should focus on these at risk families to help counter intergenerational obesity.

There is a current gap in services for people who are overweight/obese with poor mental health and learning disabilities or low levels of wellbeing.

Recommendations for further needs assessment work

Assessment and regular monitoring/analysis of the Public Health Outcomes Framework indicators linked to tackling obesity are necessary. These are: 2.2i Breastfeeding initiation, 2.2ii Breastfeeding prevalence at 6-8 weeks, 2.6 Excess weight in 4-5 and 10-11 year olds (as measured by the NCMP), 2.12 Excess weight in adults, and 2.13 Proportion of physically active and inactive adults.

Annual in depth analysis of the NCMP data is needed to fully understand the levels of obesity in children in the borough. This is typically undertaken through the local PHIT Reports.

Further work is required to understand fully the uptake of appropriate services in relation to need.

Key contacts

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