

**Open Report on behalf of Dr Tony Hill, Director of Public Health, NHS
Lincolnshire and Lincolnshire County Council**

Report to:	Children and Young People Scrutiny Committee
Date:	19 October 2012
Subject:	Childhood Obesity Update and Draft Strategy

Summary:

The health, social and personal cost associated with the consistent increase in the numbers of children and adults who are not maintaining a healthy weight will undoubtedly overwhelm both services and personal lives in the future if these rising statistical trends are not reversed.

The National Child Measurement Programme (NCMP) data in Lincolnshire gives us increasingly robust intelligence. The trend in overweight and obese children between 2008 and 2011 in reception year children in Lincolnshire shows a small reduction. Nevertheless, the data for 2010/11 tells us that the numbers of overweight or obese children combined in Lincolnshire are still above the East Midlands and National averages.

Data for year six, however, demonstrates a slight reduction in the overweight category but continues to show a 1% year on year increase in those measured as being obese. We also know from further analysis that girls in this age group measured as obese are continuing to rise, and are statistically significantly higher than the national average where boys' levels have remained static. There are areas across Lincolnshire where higher than expected numbers of obese children have been identified. In reception year, these are Boston and West Lindsey Councils, and in year six the areas are East Lindsey and South Holland Councils.

This data supports and informs the broad range interventions to reduce childhood obesity levels across Lincolnshire. We cannot afford to be complacent, and all areas of Lincolnshire require a consistent life course approach to reducing Childhood Obesity, although the data supports specific interventions where the need is greatest. In Lincolnshire we are utilising a Life Course strategic approach to reducing childhood obesity: from pregnancy, early years pre-school, school years and beyond.

Actions Required: To consider the information presented on childhood obesity and to comment accordingly on the Draft Childhood Obesity Strategy for Lincolnshire.

1. Background

What is childhood obesity?

Overweight and obesity are terms used to describe an excess of body fat which results from an energy imbalance where more energy is taken in compared to what is consumed.

Within the UK overweight and obesity are assessed among adults using the Body Mass Index (BMI). For children, there are no clearly defined BMI criteria as weight and height vary considerably depending upon age and stage of development. Instead, overweight and obesity are defined for children using the British 1990 growth reference charts where the weight status of the child is classified according to their age and sex. Children with a weight at or above the 95th centile are classified as obese and children between the 85th and 95th centiles are classified as overweight. Because this method of measurement takes into account the age and gender of the child and matches it with measurements taken from British children before the current high levels of obesity were observed it is widely acknowledged to be the most accurate way to identify weight problems in children under 12 years of age.

Classification of children's BMI

Classification	BMI Centile
Underweight	≤2 nd centile
Healthy Weight	2nd centile – 84.9th centile
Overweight	85th centile – 94.5th centile
Obese	≥95th centile

Children who are overweight or obese early in life are at greater risk of developing serious health problems as young adults if they do not reduce their weight to a healthy level. These risks include the development of type 2 diabetes, high blood pressure, heart disease and certain types of cancers. The psychological problems associated with being an overweight child are also evident with self esteem, confidence and overall life aspirations potentially all being affected negatively.

The health, social and personal cost associated with the consistent increase in the numbers of children and adults who are not maintaining a healthy weight will undoubtedly overwhelm both services and personal lives in the future if these rising statistical trends are not reversed.

This report focuses on the issue of childhood obesity and achieving and maintaining a healthy weight. However, it is perhaps worth considering some of the detrimental health factors which are likely to prevail within the adult state should this issue not be effectively tackled at the earliest opportunity. Around two thirds of children who are obese are also more likely to sustain their obese condition as they progress into adulthood. Being obese or overweight brings significant risks at a range of different points throughout life (NHS Information Centre 2011). The health risks for adults who do not maintain a healthy weight status are somewhat concerning. Evidence suggests that, when compared with an adult healthy weight male, an obese male is:

- Five times more likely to develop type 2 diabetes
- Three times more likely to develop cancer of the colon
- More than two and a half times more likely to develop high blood pressure, which is a major risk factor for stroke and heart disease

Similarly, an obese woman, compared with a healthy weight woman, is:

- Almost thirteen times more likely to develop type 2 diabetes
- More than four times more likely to develop high blood pressure
- More than three times more likely to have a heart attack

Obesity also presents heightened risks for developing other problematic health conditions, including angina, gall bladder disease, liver disease, ovarian cancer, osteoarthritis and stroke. Evidence indicates that maintaining a stable healthy weight can offer health benefits for cancer survivors as it is apparent that both survival and recurrence of cancer may be adversely affected by obesity. As an example, statistics tend to show that obesity appears to increase the risk of recurrence and death among breast cancer survivors by around one third of individuals affected by this condition (Department of Health 2010).

Antenatal and postnatal risks

Data indicates that during pregnancy and childbirth, obesity presents a series of health risks to the foetus, the infant and the mother. Obesity in pregnancy is associated with an increased risk of serious adverse outcomes, including miscarriage, foetal congenital anomaly, thromboembolism, gestational diabetes, pre-eclampsia, dysfunctional labour, postpartum haemorrhage, wound infections, stillbirth and neonatal death.

Obese women also tend to contribute to a higher caesarean section rate and lower breastfeeding rate compared with women with a healthy Body Mass Index (BMI).

Research evidence also tells us that children of parents who are overweight or obese are more likely to have difficulty maintaining a healthy weight.

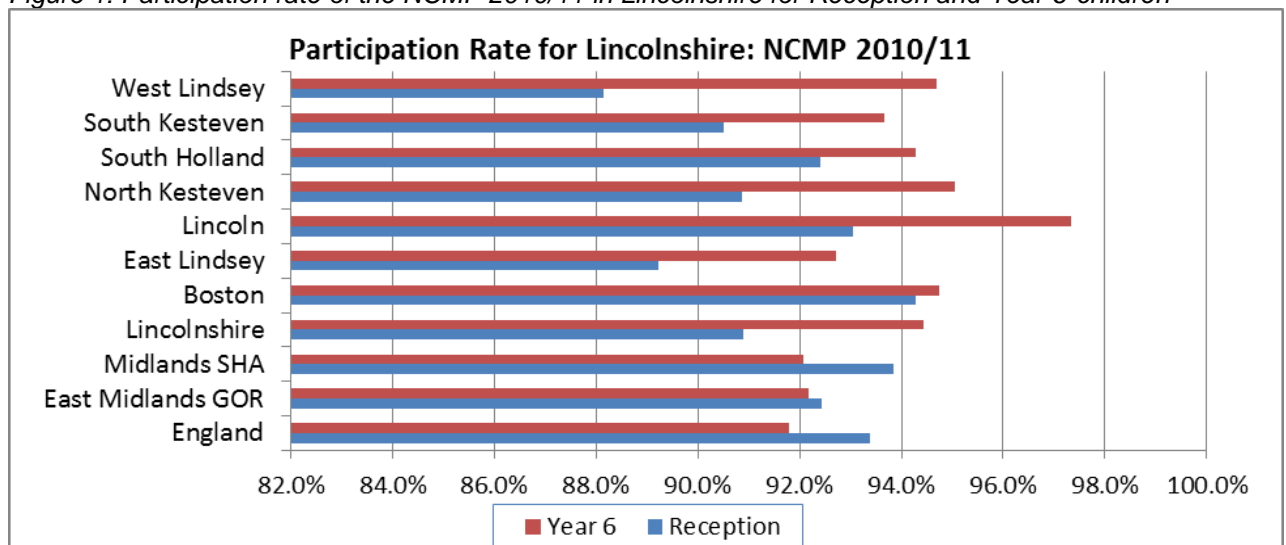
National and Local Surveillance Data through the National Child Measurement Programme (NCMP)

The NCMP takes place annually between September and June during the school academic year. The children involved are those in reception year (aged 4/5 years of age) and year 6 (aged 10/11 years of age).

Over the past three years, the percentage of children taking part in this process has improved and we now have a robust set of measurements to give us a snapshot of the numbers of overweight and obese children within the targeted age groups in Lincolnshire.

A total of 6,554 (within the National total of 541,255) pupils were measured in Reception Year during 2010/11, and a further 6,943 (within the National total of 495,353) were measured in Year 6. As can be seen within Figure 1, these amounts equate to participation rates in Lincolnshire of 90.9% for Reception Year (against the National Rate of 93.4%) and 94.4% for Year 6 (against the National rate of 91.8%). There are clearly areas across Lincolnshire where further encouragement is needed to ensure we have the optimum numbers of reception year children participating in the programme.

Figure 1: Participation rate of the NCMP 2010/11 in Lincolnshire for Reception and Year 6 children



Source: NHS Lincolnshire 2010/11

Figure 2: Prevalence of Overweight and Obese Children in Lincolnshire, the East Midlands and England (NCMP) 2010/11

	Reception Children	Year 6 Children
	Overweight or Obese %	Overweight or Obese %
Lincolnshire	23.8	35.3
East Midlands	22.1	32.4
England	22.6	33.4

Source: NCMP 2010/11

Figure 2 illustrates the levels of children measured as being overweight or obese in Lincolnshire remains above the East Midlands and England averages for both reception year and year 6 children.

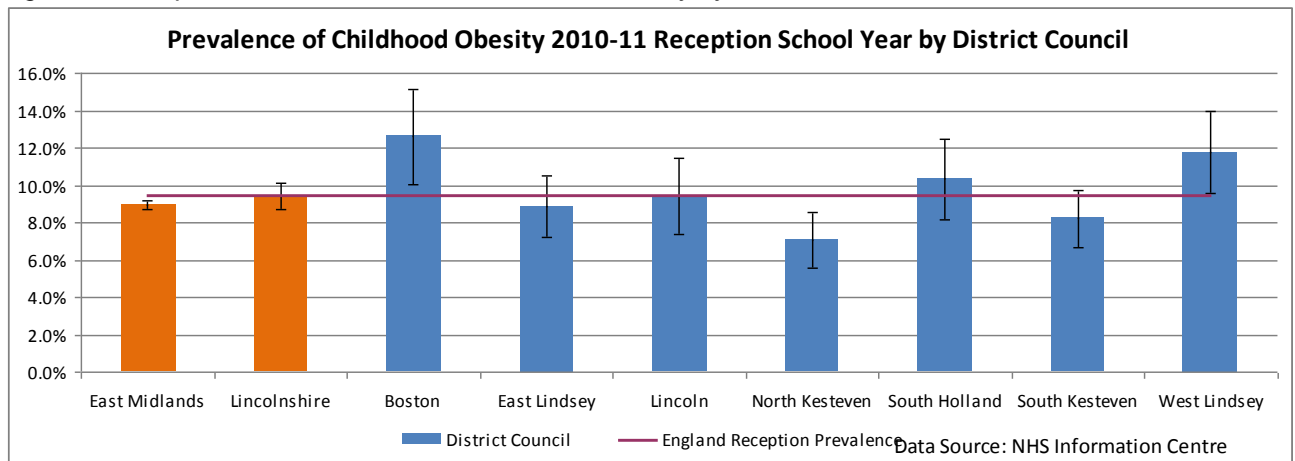
The numbers of **overweight** children in both reception and year 6 have demonstrated a slight reduction (not statistically significant). Reception year children are now below the English average but, year 6 pupils continue to demonstrate higher numbers. **Obesity** levels in reception year children have started to reduce however. The numbers of year 6 children identified as obese have consistently continued to increase year on year. It is clear; looking at these figures for each school year there is a consistent doubling of the numbers of obese children during their first seven years of school (Figure 3).

Figure 3: Prevalence of Overweight and Obese Children in Lincolnshire (NCMP) 2008/09 to 2010/11

		2008/9	2009/10	2010/11
Reception (age 4-5 yrs)	Overweight	15%	15%	14.4%
	Obese	9.9%	10.8%	9.4%
	Overweight or obese	24.9%	25.8%	23.8%
Year 6 (age 10-11 yrs)	Overweight	16%	15.5%	15.1%
	Obese	18.5%	19.5%	20.2%
	Overweight or obese	34.5%	35%	35.3%

Source: NCMP 2008/09 to 2010/11

Figure 4: Reception Year Prevalence of Childhood Obesity by District Council 2010/11



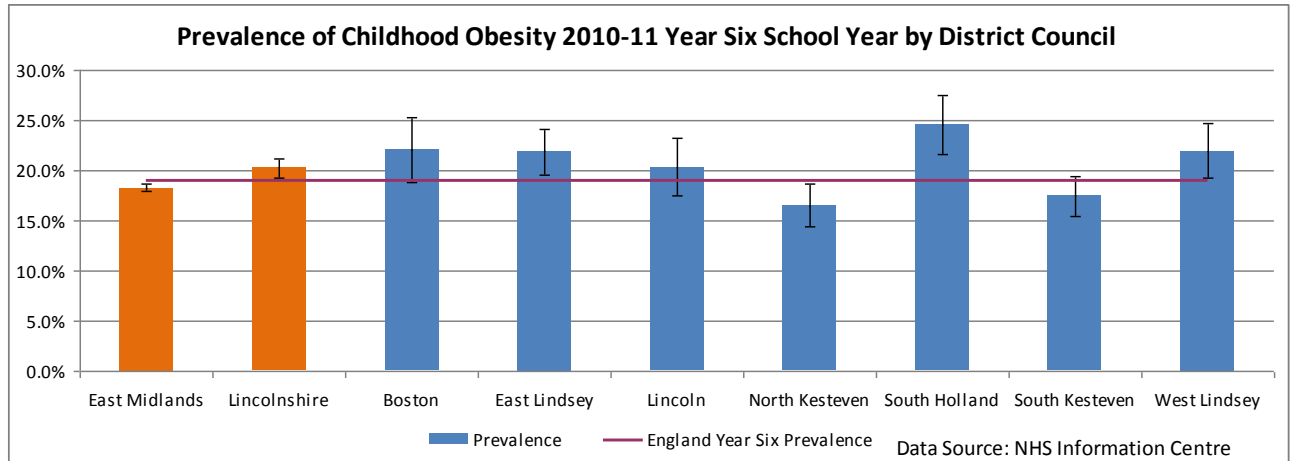
Source: NHS Lincolnshire 2010/11

Figure 4 shows that reception year children in Lincolnshire exhibit higher levels of obesity than the East Midlands but, similar to the English average.

The district councils in Lincolnshire which demonstrate statistically significantly higher numbers than England are Boston (3.7% higher) and West Lindsey (2.4% higher).

South Holland is also slightly higher but there is no statistically significant difference which means this could be due to normal variation within the population.

Figure 5: Year 6 Prevalence of Childhood Obesity by District Council 2010/11



Source: NHS Lincolnshire 2010/11

The prevalence of obesity in year 6 children continues to be above the English and East Midlands averages (Figure 5). Two areas of the county, East Lindsey and South Holland, demonstrate significantly higher levels than England (2.9% and 5.5% above respectively).

South Holland also has statistically significantly higher prevalence of obesity compared to the Lincolnshire average. Boston, Lincoln and West Lindsey are also above national prevalence but these are not statistically significant.

The obesity data for reception and year 6 in 2010/11 continues to demonstrate a doubling of the numbers of children measured as being obese in reception year and in year 6.

Nevertheless, in some areas of the county the outcomes exceed this average increase. South Holland increases from 10.3% to 24.5%, Lincoln City increases from 9.4% to 20.3%, North Kesteven from 7.1% to 16.5% and East Lindsey from 8.9% to 21.9%

Childhood Obesity and Gender

Similar to national trends, the prevalence of obesity is higher among boys than girls. In 2010/11 just over 8% of reception aged girls were obese compared to 10% of boys (Figure 6 and 7). The numbers for 2010/11 are comparable to the English average for both boys and girls

Figure 6 – Prevalence of obesity in Reception Year Girls 2006 – 2011

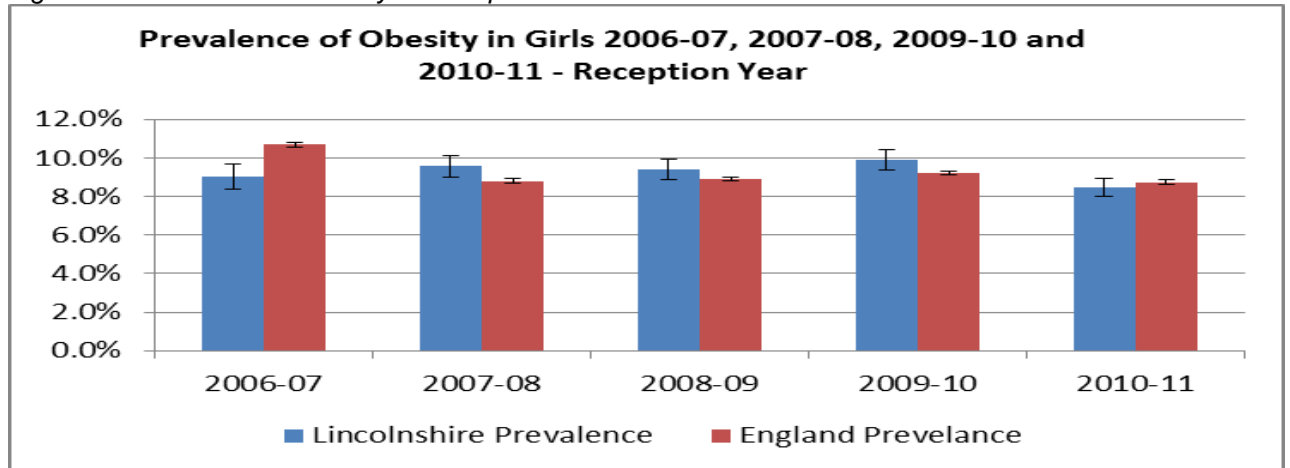
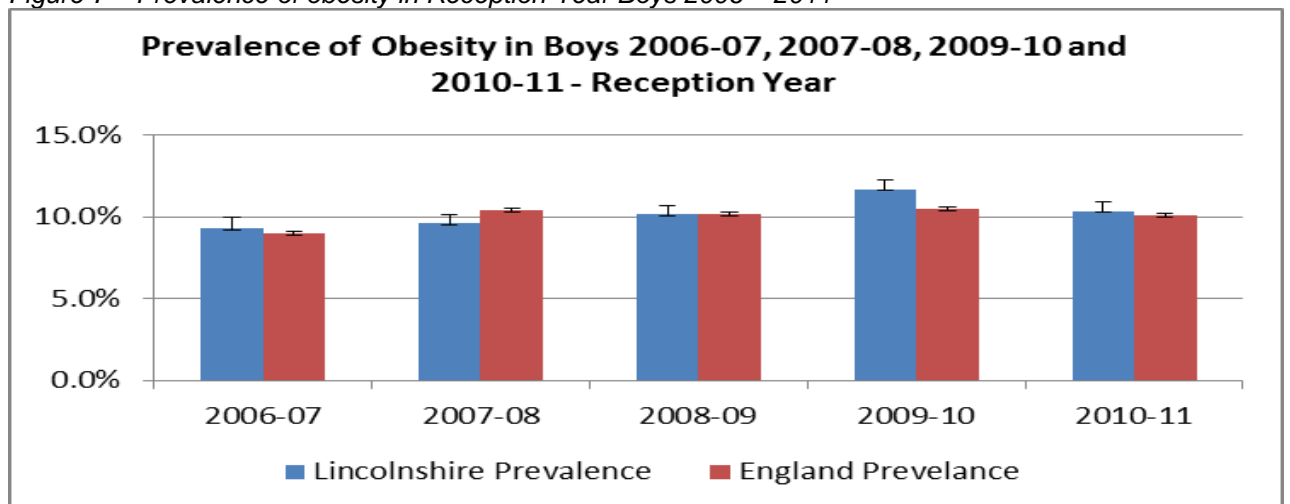


Figure 7 – Prevalence of obesity in Reception Year Boys 2006 – 2011



Source: NHS Lincolnshire 2010/11

Figure 8 – Prevalence of obesity in Year 6 Girls 2006 – 2011

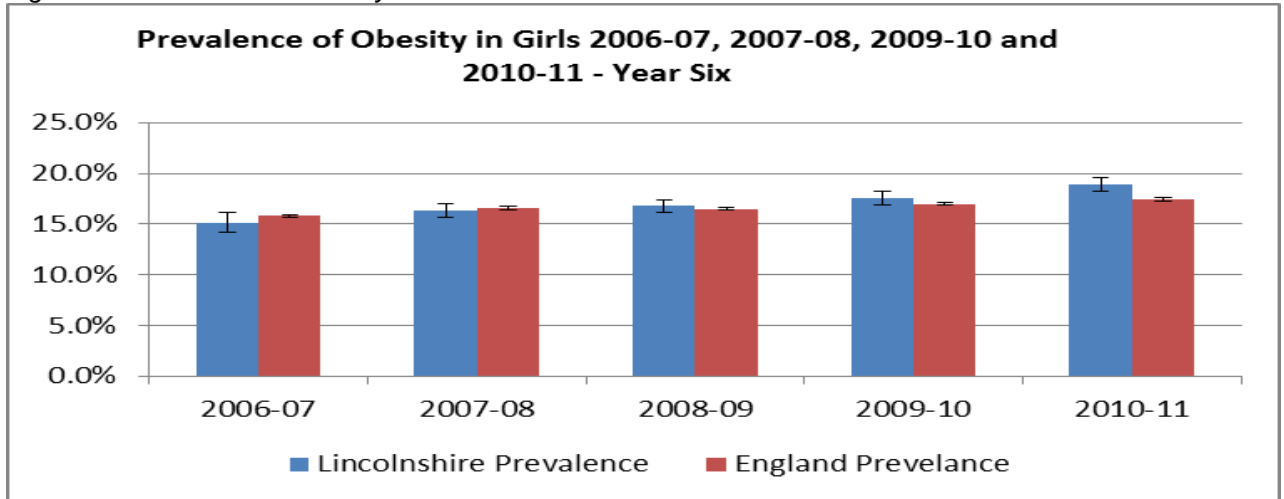
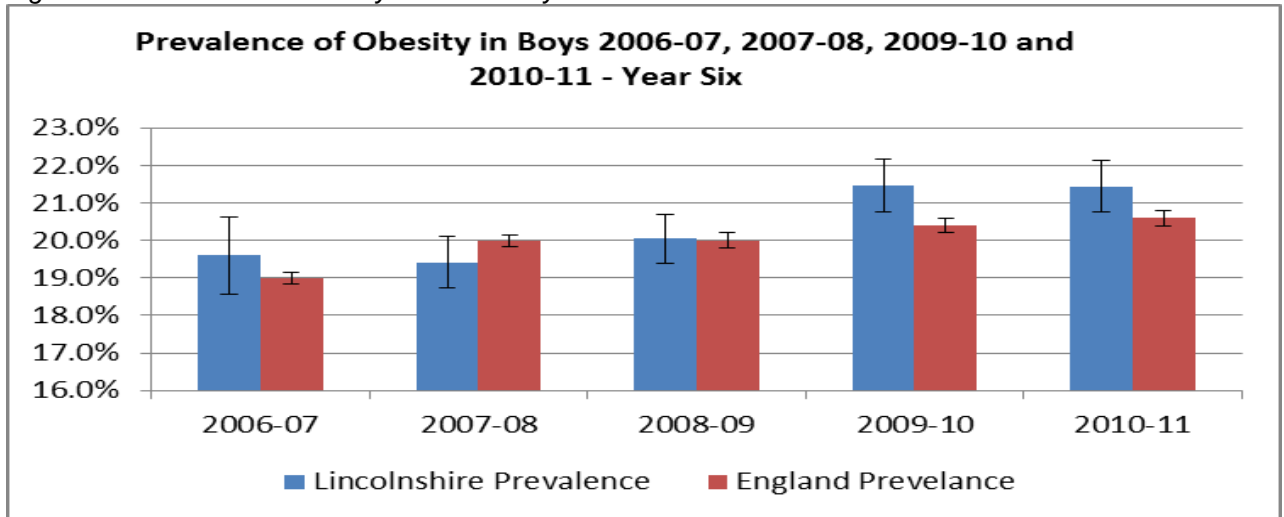


Figure 9 – Prevalence of obesity in Year 6 Boys 2006 – 2011



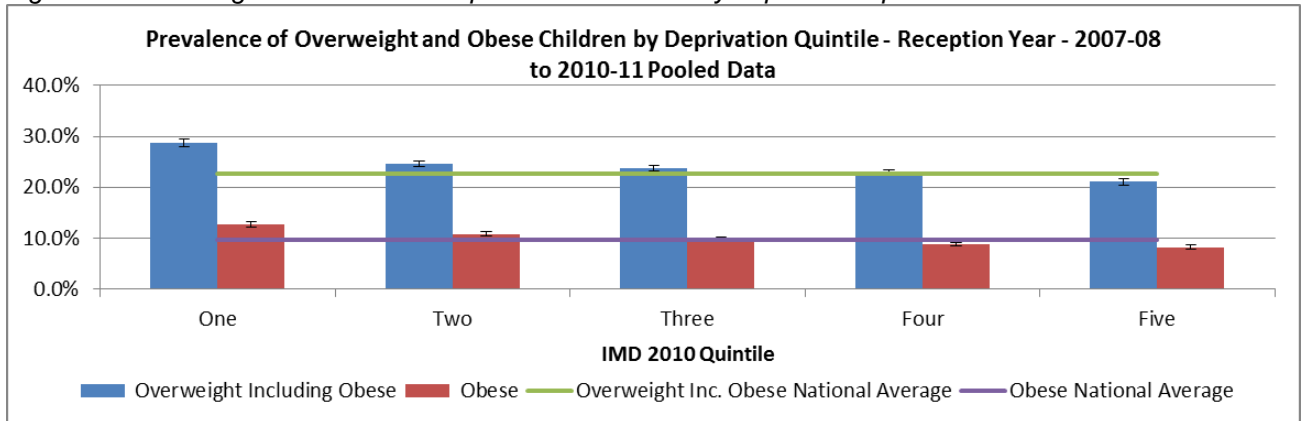
Source: NHS Lincolnshire 2010/11

The data in figures 8 & 9 show us that the numbers of year 6 girls who are identified as obese has continued to rise year on year since 2006. Nevertheless at just under 18% this is lower than the prevalence in year 6 boys which is over 21%. The prevalence of obesity for boys has remained static since 2009/10. The prevalence of obesity in girls in year 6 for 2010/11 is significantly higher than the English average.

Childhood Obesity and Deprivation

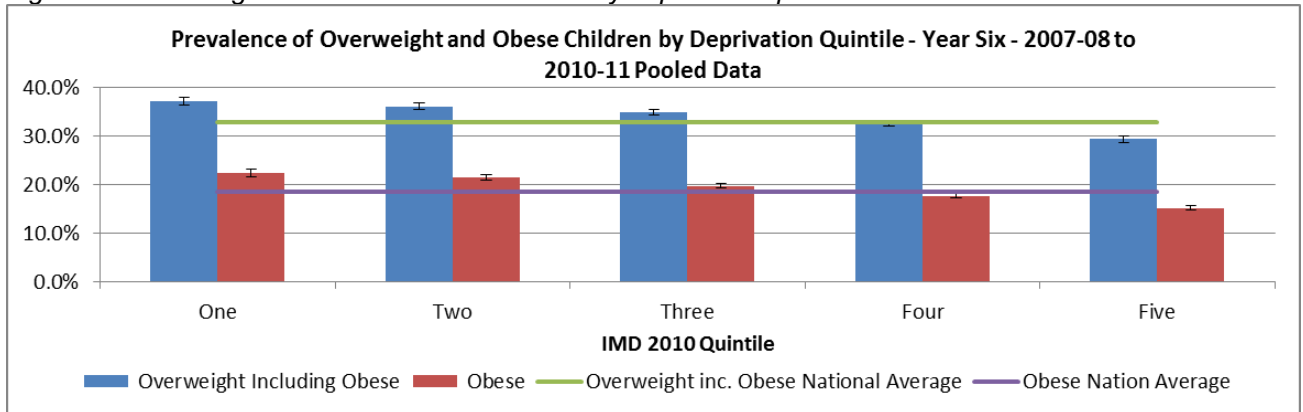
The prevalence of obesity varies with deprivation. Figures 10 & 11 show the prevalence of overweight and obese reception year and year 6 children grouped according to deprivation quintile. The Index of Multiple Deprivation (IMD 2010) quintile one indicates those who are most deprived and quintile five those least deprived. The data demonstrates a correlation between deprivation and overweight/obesity levels. Those in the most deprived groups have a statistically significantly higher prevalence of overweight and obesity compared to the English average with those in the more affluent quintiles demonstrating significantly lower levels than the English average.

Figure 10: Overweight and obese Reception Year children by deprivation quintile



Source: NHS Lincolnshire 2010/11

Figure 11: Overweight and obese Year 6 children by deprivation quintile



Source: NHS Lincolnshire 2010/11

2. Conclusion

The NCMP data gives us increasingly robust intelligence. The trend in overweight and obese children between 2008 and 2011 in reception year children in Lincolnshire shows a small reduction. Nevertheless, the data for 2010/11 tells us that the numbers of overweight or obese children combined in Lincolnshire are still above the East Midlands and National averages.

Data for year 6, however, demonstrates a slight reduction in the overweight category but continues to show a 1% year on year increase in those measured as being obese. It is also known from further analysis that girls in this age group measured as obese are continuing to rise and are statistically significantly higher than the national average, where boys' levels have remained static.

There are areas across Lincolnshire where higher than expected numbers of obese children have been identified. In reception year these are Boston and West Lindsey Councils and in year 6 the areas are East Lindsey and South Holland Councils. These data also fit with the correlation of deprivation and the higher levels of obesity experienced within this group.

We also have to be mindful that there are families who require some help in all levels of Lincolnshire society and this will be available to them. Nonetheless, evidence shows that less deprived populations will access interventions more easily than those from more deprived groups. Our interventions in Lincolnshire, therefore, must take this into account and utilise the data we have to specifically target more vulnerable areas, or we are in danger of actually widening health inequalities as there will be an imbalance in access to services.

The NCMP data supports and informs the broad range of interventions to reduce childhood obesity levels across Lincolnshire. We cannot afford to be complacent, and all areas of Lincolnshire require a consistent life course approach to reducing childhood obesity, although the data supports specific interventions where the need is greatest.

All our interventions need to be family based and offer support to give children food which is healthy and balanced, and portion sizes which are correct for the child's age. It is necessary to do this at home and at school.

Over the past 3 years we have observed that the proportion of children identified as being obese at Year 6 is double that of Reception year pupils (please see table 2). Therefore, the necessity to start to understand what is affecting our children's ability to maintain a healthy weight during these informative early school years is imperative.

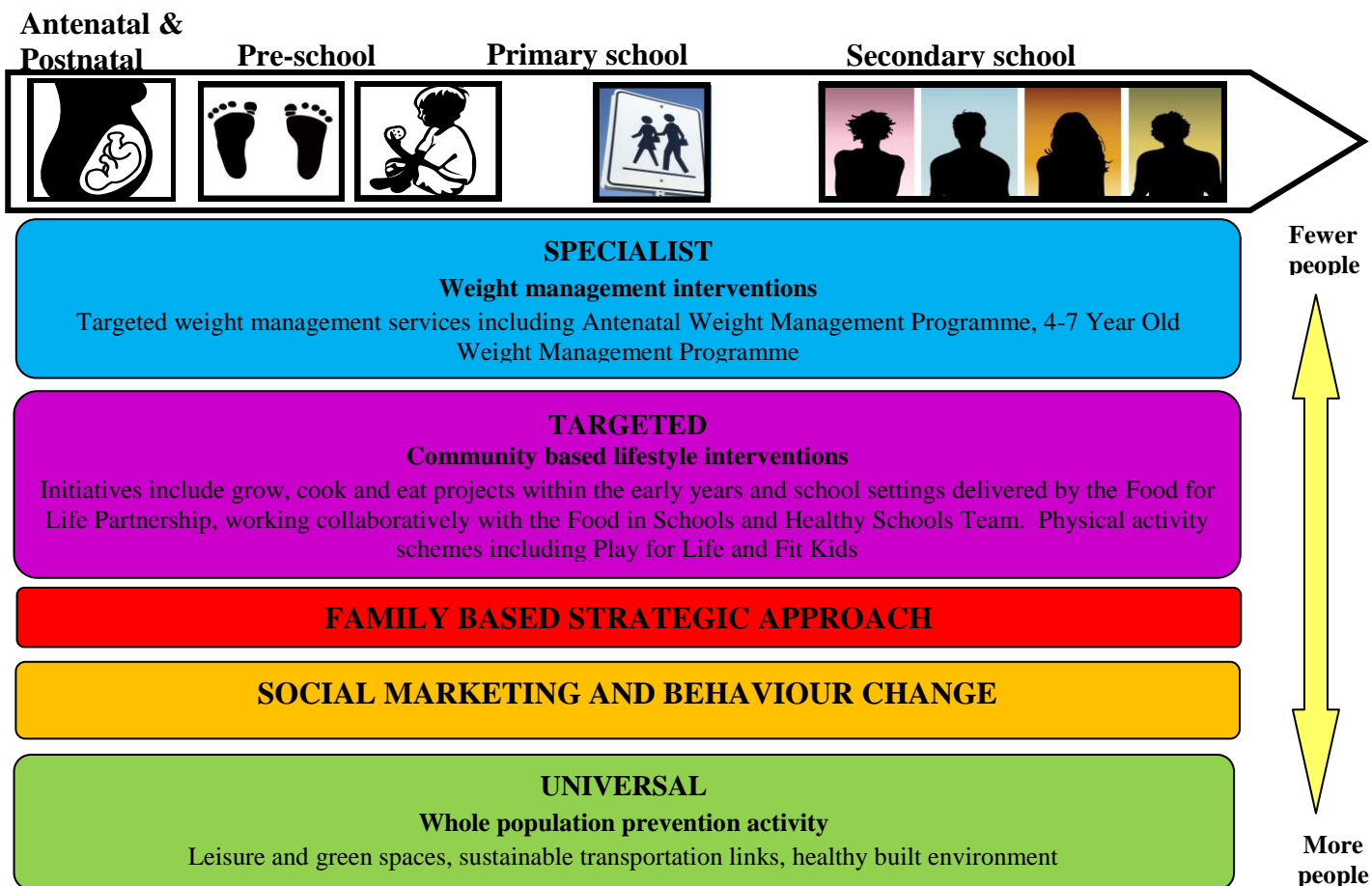
NHS Lincolnshire has been working closely with partner organisations to tackle the year on year increase in childhood obesity. We are aware that a sustained team effort involving a wide range of agencies is the only effective way to succeed. Obesity is targeted through direct interventions across each area of the child's lifetime: during pregnancy, early years and throughout their school years. This will be achieved through:-

- Raising the profile and implications of childhood obesity with local communities
- Supporting mothers to effectively breastfeed
- Promoting active lifestyles in the home, nursery and school
- Promoting healthy food choices in the home, nursery and school
- Commissioning provider services to support families help them lose weight and be more physically active
- Customer insight and media use to raise the profile of childhood obesity

Implementing a life course approach to reduce childhood obesity

The 'life course approach' recognises that there are important stages in peoples' lives where they are more likely to change their behaviour or come into contact with health services. We have taken this evidence-based approach as one of the key themes for tackling childhood obesity in Lincolnshire to ensure that we provide a comprehensive map of interventions to target children across their life stages. Over the last 12 months a number of interventions have been developed or are planned to be piloted in the near future according to this life course approach. Figure 12 shows the Life Course approach in Lincolnshire where a range of interventions are implemented at different tiers (universal, targeted and specialist).

Figure 12: Description of the Life Course approach to reducing Childhood Obesity in Lincolnshire



Descriptions, costs and some outcomes / outputs for the key initiatives implemented this year to combat childhood obesity are included in the table below.

Childhood Obesity: Budget Summary September 2012

Name of commissioned service	Outline summary of service provision & provisional outcomes / outputs	Cost 2011/12	Cost 2012/13
National Child Measurement Programme (NCMP)	Established in 2005, the National Child Measurement Programme (NCMP) for England weighs and measures children in Reception (typically aged 4–5 years) and Year 6 (aged 10–11 years) and enables detailed analysis of prevalence and trends in child overweight and obesity levels. The data are key to improving understanding of overweight and obesity in children. They are used at a national level to inform policy and locally to inform the planning and commissioning of services. Delivered by Lincolnshire Community Health Services (LCHS), the NCMP also provides local areas with an opportunity to raise public awareness of child obesity and to assist families to make healthy lifestyle changes through provision of a child's result to their parents. Central collation and analysis of the NCMP data has been coordinated by The NHS Information Centre for health and social care (NHS IC) since 2006/07. Data are supplied locally by Primary Care Trusts (PCTs) with the support and co-operation of schools, in line with guidance from the Department of Health Obesity Team.	£70,000	£70,000
Food for Life Partnership (FFLP)	The FFLP, provided primarily by the Soil Association, is a health and education programme which helps transform school meals and food education in schools and communities. The aim of the Partnership is to give primary school pupils and their families the confidence, skills and knowledge they need to cook, grow and enjoy good quality, affordable food. FFLP uses food as a way to engage the community and improve the whole school experience, making lunchtimes a positive feature of the day and enriching classroom learning with farm visits and practical cooking and growing. Ultimately the aim of the programme is to give schools the tools they need to make long term changes to their food culture and their curriculum to support healthy behaviours. The funding amount indicated relates to the development and implementation of the service during quarter 4 of 2011/12.	£33,225 The funding amount indicated relates to the development and implementation of the service during quarter 4 of 2011/12.	£149,951

	<p>The FFLP has been working in Lincolnshire since 2008. Already 235 schools are enrolled on the programme, 48 with awards at Bronze, Silver or Gold and 68% of the county's schools receive FFLP standard meals which are verified annually by inspection and meet stringent criteria to ensure that young people are receiving high quality and healthy food in school. This previous excellent work will be further enhanced by working in tandem with the Healthy Schools and Lincolnshire County Council's Food in Schools Teams. This work was commissioned in April 2012 and already schools which had been identified as having the greatest need are working with this new 'collaborative team' to increase their knowledge, ability to cook, improve the school dining experience, quality of packed lunches and through these schools choosing obesity as a Healthy Schools enhancement award ensuring food quality, portion size, etc. is included within the school ethos.</p>		
<p>Antenatal Weight Management Programme (ANWMP)</p> <p>Bumps & Beyond Programme</p>	<p>The ANWMP, which is to be delivered by LCHS, targets women with a booking BMI >35 or BMI < 35 with co-morbidities, by providing an assessment and personalised advice on healthy eating and how to be physically active during their pregnancy. Aims associated with the ANWMP include; a reduction in morbidity and mortality by reducing obesity-related complications during and after pregnancy, an increase in referrals by raising awareness among healthcare professionals of the health benefits of weight management, and the risks of being overweight or obese during and after pregnancy, a reduction of inequalities and improving access to weight management information, advice and support, including dietary and physical activity interventions for women before, during and after pregnancy and a reduction of costs associated with obesity-related complications.</p> <p>As of August 7th - 121 clients have been seen, 56 (46.3%) of them receiving the brief intervention advice and the remaining 65 (53.7%) women have been booked onto the 'Bumps & Beyond' programme. On average, five or six women with a BMI>35 are identified at each Monday Consultant clinic. Many women have now made huge changes to their lifestyles and many have commented that the service offers 'fantastic support'. We are working with Nottingham University Dietetics Dept. to evaluate this service fully. This will include: Demographic Information: ethnic origin, postcodes, occupation, home owner or tenant and marital status, etc.</p>	<p>£20,000</p> <p>The funding amount indicated relates to the development and implementation of the service during quarter 4 of 2011/12.</p>	<p>£110,000</p>

	<p>Baseline Data: Height, weight and BMI at the dating scan are recorded as is date of booking, expected date of birth and gravida and para of the woman. The final weight is recorded at 36 weeks gestation and the total weight gain is calculated. This along with estimated cost savings due to reduced interventions will give us a very robust indication of the real outcomes for this service. This service will commence in Boston Pilgrim Hospital in early October.</p>		
4-7 Year Old Weight Management Programme	<p>The overarching aim of the programme, which is also provided by LCHS, is to ensure that all children within the pilot areas of Spalding, Gainsborough and Skegness have a healthy weight by being physically active and eating healthily. The interventions delivered as part of the 4-7 Year Old Weight Management Programme aim to increase in the child's physical activity, reduce the child's sedentary behaviour, enhance knowledge on the part of the parent/carer in respect of food and nutrition related issues and improve the health and well-being of those families identified as being 'most vulnerable'.</p> <p>The 4 to 7 year old programme has only been operating within the nominated pilot areas fully for 4 months; therefore limited performance related information is available to date. Nevertheless, 667 invites have already been sent out to parents. The take up of the places has been slow and we are actively working with our provider to increase awareness and encourage referrals from other sources such as Children's Centres, Health Visitors, School Nurses, etc. Quarterly provider performance reviews are however scheduled for later in the year and will provide the basis for reviewing the following key performance indicators –</p> <ul style="list-style-type: none"> • Measurement of weight and BMI at both pre and post intervention stages to assess the change in status of these indicators with a view to assessing the likely impact the interventions have had on reducing obesity-related comorbidities. • Via self-reporting of the service user at both pre and post intervention stages, determine the extent of change with regards to physical activity and sedentary behaviour undertaken by the child. • Number of 10 week programmes completed. • Number of programme participants. 	<p>£20,000</p> <p>The funding amount indicated relates to the development and implementation of the service during quarter 4 of 2011/12.</p>	<p>£110,000</p>

Me Sized Plates	<p>Distribution of the plates throughout Lincolnshire's schools in conjunction with the NCMP is not designed to a prescriptive initiative, whereby parents should rigidly provide their 4 or 5 year old child with portions that are the same size as the plate. More so, this concept looks to encourage parents to think about portion size along with food quality and appropriate levels of physical activity. This is part of a much larger strategy to tackle obesity and its primary function is to gain parental insight. As part of this project, all parents are being asked to engage with NHS Lincolnshire via letter, e-mail, Twitter or Facebook, in order to ascertain what sort of information and services they require to help them provide a healthy lifestyle environment for their children. This will form part of the overall evaluation along with the eventual NCMP measurements of the same cohort of children in 5 years' time.</p> <p>14,000 plates were initially purchased and have now been sent out to numerous schools, children's centres and to other health care professionals. There has been considerable interest in the idea of the plates. Organisations such as the Department of Health, British Heart Foundation, Derby City and Derbyshire County Primary Care Trusts have been extremely keen to learn more about this concept with a view to developing this initiative further in their own right. Lincolnshire also plans to expand this project further whereby a further batch of 9" plates will be given to all reception year, year 4 and year 5 primary school pupils by the summer of 2013 whilst the 7" plates will continue to be provided to children in pre-school via Children's Centres, Health Visitor teams and Home Start. Evaluation of this intervention has been through Parental, Health Visitors, Dieticians, Nursery Nurses, School Nurses, Children's Centres, Home Start and Early Years Teachers responses through Twitter, Facebook, E-mail and Mail. This has overwhelmingly been extremely positive. There will be further robust evaluation when we measure the years 4 and 5 pupils through the NCMP.</p>	£12,000	£27,000 (21,000: 9 inch plates)
NCMP Road Shows	Two NCMP healthy lifestyle events took place in Spalding and Gainsborough in December 2011. These events were free to the general public and had the overall aim of being an opportunity to access healthy lifestyles advice, support and information, which would help to promote long term health benefits through the undertaking of more exercise and healthier eating behaviours.	£2,000**	£5,000**

	<p>Within this aim, it was hoped that the events will serve to inspire parents and children, in a family friendly manner, to make small behavioural changes to their lifestyles. Whilst specific details are yet to be determined in respect of 2012/13, it is hoped that similar social marketing related initiatives will occur in the coming year.</p> <p>In addition to the road shows, Public Health staff along with other stakeholders from Children's Services, Healthy Schools, Play for Life, the Lincolnshire Sports Partnership and Lincolnshire Community Health Services have attended a variety of other community based events including East Lindsey District Council's Intergenerational Event and Children's Services Under 5's Games Event in Gainsborough.</p>		
--	---	--	--

3. Consultation

a) Policy Proofing Actions Required

No consultation completed prior to presentation

4. Appendices

These are listed below and attached at the back of the report	
Appendix A	Childhood Obesity Strategy for Lincolnshire: The full draft strategic plan to reduce childhood obesity in Lincolnshire over the next 5 years which, includes the rationale for implementing a wide range of activities involving a wide range of partners is attached to this Scrutiny Paper for comment.

5. Background Papers

No background papers within Section 100D of the Local Government Act 1972 were used in the preparation of this report.

Lynne McNiven, Consultant in Public Health: Mobile: 07785303996 or via e-mail on: lynne.mcniven@NHS.net or lynne.mcniven@lincolnshire.gov.uk