

Director of Public Health

## **CHILD HEALTHY WEIGHT**

### **Recommendations:**

#### **The Board is asked to:**

- Note health improvement activity to tackle obesity in children
- Note the initial success associated with achievement of the HEAT 3 Target 2008-2011 and support the ongoing development in relation to the further target 2011-2015
- Note the findings from the evaluation of the Big Eat In to encourage increased uptake of healthy school meals and continue to support Local Authority colleagues to develop innovative approaches to improving childhood nutrition

#### **1. Introduction**

Scotland like many other Western countries is experiencing rising levels of overweight and obesity in both adults and children. Health and Wellbeing (2008) data identifies 31% of 16-65 year olds within NHSGGC are currently overweight and 15% are currently obese. National projections estimate 40% of 16-65 years olds will be obese by 2030. The national 'Obesity Route Map' identifies the requirement to establish life long habits and skills for positive health behaviour through early life intervention as a key strand to addressing this epidemic.

The health risks associated with obesity are well documented and total economic impact of obesity within Scotland was estimated at £457 million in 2007/8. More than £175million are direct NHS costs. (Preventing Overweight and Obesity in Scotland 2010)

In 2008 the prevalence of Scottish children who were overweight was estimated to be 22.1%. From 2001-2005, there has been an annual rise of 0.4% in the number of 7-15 year old children classified as very overweight.

Body Mass Index in children is linked to projected growth charts and is classified in centiles. A child is identified as being overweight when their BMI is above the 91<sup>st</sup> centile; obese when they are above the 98<sup>th</sup> centile and very overweight (morbidly obese) above the 99.6<sup>th</sup> centile.

Population modelling work for Greater Glasgow and Clyde shows that:

- An estimated 33,000 children were likely to be overweight
- Approximately 4,500 children were likely to be very overweight

- In Scotland as a whole, the prevalence of overweight and obesity amongst children in Primary 1 increases with deprivation. In the least deprived areas, 17.0% of children were classified as overweight (including 6.4% obese and 2.9% severely obese) while in the most deprived areas 22.2% were classified as overweight (including 9.8% obese and 5.2% severely obese).
- The social gradient in childhood overweight is shallower than that observed in other health related behaviours
- In the last decade, the prevalence of overweight and obesity has remained at a similar level of around 1 in 5 children in Primary 1
- The prevalence and severity of obesity increases with age (19.1% of 5-10 years and 25.4% of 11-15 years are likely to be overweight or obese)
- There is evidence that parents do not readily identify weight issues until children are classified as very overweight
- Local Authorities within NHSGGC areas continue to struggle to meet Government guidelines of 2 hours high quality PE for every child every week emphasising the importance of non-curricular physical activity.
- There is evidence of an increasing numbers of Scottish secondary school pupils are leaving school premises at lunchtime to purchase food and drinks high in fat, sugar and salt from high street food outlets and mobile vans near schools.

This paper will describe newly developed healthy weight interventions for children and also the Big Eat In, an initiative in Glasgow to pilot school lunchtime ‘stay on site’ initiative which was implemented in 8 Glasgow secondary schools by Glasgow City Council during the 2009/10 academic year. The overall aim of the pilot was to encourage Secondary 1 (S1) pupils to stay within school at lunchtime, enjoy a healthy school lunch and have the opportunity to take part in a lunchtime activity.

### **1.1 NHSGGC Target**

The HEAT 3 target aims to reduce the number of children out with a healthy weight range and to target children age 5-15 with a BMI over the 91<sup>st</sup> centile. The target for NHSGGC 2008 – 2011 was 850 completers.

### **1.2 Active Children Eating Smart (ACES) and Active Choices**

The Healthy Weight target was classified ‘developmental’ in recognition of the absence of appropriate service models within all Board areas. A national specification outlining minimum criteria for an evidence informed intervention and a number of core service requirements was issued by the Scottish Government in April 2008.

Research evidence has identified that the most effective interventions require to be underpinned by behaviour change techniques, be family centred, include diet and physical modification components and practical food sessions. The intervention was also planned to be delivered in a non clinical setting and out with school hours.

Following a number of Corporate Management discussions a community based intervention, a 12 week programme, ACES which closely modelled the characteristics described above was developed, closely aligned with the evidence base and meeting all original specifications provided by Scottish Government.

All boards experienced significant challenges in establishing new services and in the recruitment of participants during the initial 2 years, subsequently the National Specification was reviewed in January 2011. As well as the intensive family based intervention described above, NHS Greater Glasgow and Clyde was encouraged to deliver a school based model utilising a whole class approach. This school based approach included measurement of BMI before and after, a minimum of 7 hours activity on healthy nutrition and exercise and a completer was defined as having attended 75% of the programme.

NHSGGC's school based intervention (Active Choices) meets the above specifications and was introduced in January 2011.

## **2. Child Healthy Weight Programmes**

Both the ACES and Active Choices programmes were developed with contributions from a wide range of professionals e.g. Psychologist, Dieticians, School Nurses, Public Health Consultants, Education representatives, Physical Activity experts and Health Improvement staff. The programmes are delivered in conjunction with Local Authority Leisure Service providers with extensively trained physical activity coaches delivering the programme.

A Child Healthy Weight steering group, (reporting to the Child Health Strategy Group) oversees operational delivery and monitors progress in relation to the target with 6 local authority area based implementation groups managing local delivery.

An audit of the ACES programme was conducted Spring 2010 by our internal auditors, Price, Waterhouse and Cooper. Recommendations related to corporate and local communication plans, performance management and sharing of learning and good practice. The associated action plan was implemented by the Director of Public health.

The support from Local Authority Education Departments has been crucial, particularly in relation to the requirement for a school based intervention (Active Choices) and in ensuring programme content delivers Curriculum for Excellence Health and Wellbeing outcomes.

## **3. Financial Allocation**

NHSGGC received £1.2 million to support the development and delivery of the Child Healthy Weight programme.

## **4. Progress March 2011**

NHSGGC reported 856 completers, achieving the HEAT target in line with other Boards in Scotland. A breakdown across CH(C)Ps is detailed below:

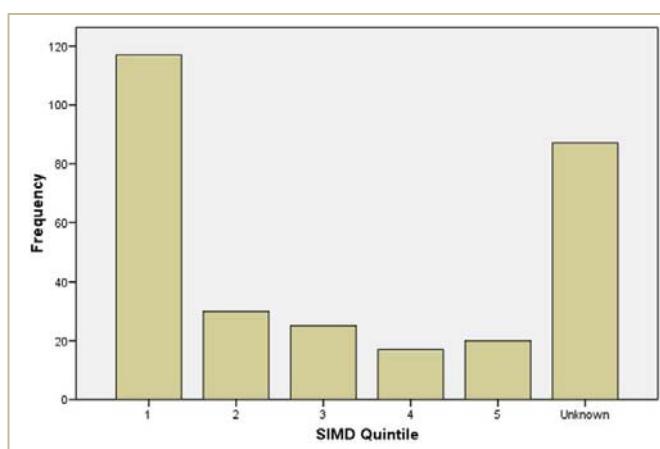
**Table 1:**

|                     | <b>HEAT target - numbers of completers March 2011</b> | <b>Final numbers of completers ACES and Active Choices</b> | <b>Gap</b> |
|---------------------|---|--|------------|
| East Glasgow        | 112   | 124  | -12        |
| North Glasgow       | 78  | 69   | 9          |
| South East Glasgow  | 82  | 74   | 8          |
| South West Glasgow  | 93  | 121  | -28        |
| West Glasgow        | 83  | 47   | 36         |
| East Dunbartonshire | 82  | 43   | 39         |
| East Renfrewshire   | 66  | 62   | 4          |
| Inverclyde          | 59  | 69   | -10        |
| Renfrewshire        | 123   | 147  | -24        |
| West Dunbartonshire | 75  | 100  | -25        |
| <b>Total</b>        | <b>853</b>  | <b>856</b>   | <b>-3</b>  |

Further analysis of the data is currently underway, however a number of headline findings include:

- A higher proportion (32%) of those children participating in Active Choices were greater than 91<sup>st</sup> centile, compared with the expected proportion (21%)
- 88% of children participating in Active Choices were primary school children and 12% at secondary school
- More than 70% of both primary and secondary children believed Active choices helped them to eat healthier and increase physical activity.
- 63% of those participating in ACES were aged 5-11, 34% aged 12-15 years (3% missing data)
- A high proportion of ACES participants (40%) reside in SIMD Quintile 1 (most deprived) areas (Figure 1)

**Figure 1: Residential deprivation characteristics of ACES participants (interim analysis)**



- 37% of those who remained in ACES at week 12 reported weight loss and a further 9% achieved weight stabilisation (the goal of paediatric weight management programmes includes weight stabilisation, rather than weight loss, because children are actively growing)
- There is a relatively high drop-out rate in the first few weeks, although this is lower in leisure centre venues.

#### **4.1 Benefits Achieved**

In addition to the number of completers, a number of benefits have also been demonstrated by the programme:

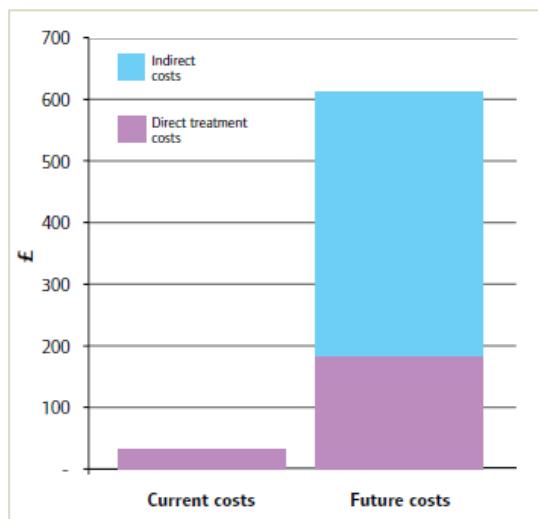
- Service availability has identified an increasing number of families looking for support to address childhood obesity
- A 'specialised' local workforce has been developed
- A number of examples of enhanced understanding of the health benefits associated with healthier lifestyles and strengthened family behaviours can be evidenced by a wider range of case studies
- Partnership working with Local Authority Leisure providers and Education colleagues has been invaluable in the service delivery and the programme addresses shared goals in Single Outcome Agreements.
- The Active Choice programme reaches a broader range of children (not just overweight), providing valuable tools and knowledge as a preventative intervention.
- The ACES programme demonstrates intensive and effective support for overweight children and their families
- Indicative findings from Active Choices shows that parents and children both find the programme helpful in initiating a change in family behaviour and teachers that it meets Curriculum for Excellence Health & Wellbeing outcomes.

#### **4.2 Limitations**

An ongoing challenge for ACES is the recruitment of participants and the identification of childhood obesity by parents. Health improvement teams are continuing to work closely with primary care and with school nurses, education and social work services to improve recruitment.

The total costs generated by childhood obesity accumulate over the entire lifecourse; it is estimated that 55% of obese 6-9 year olds and 79% of obese 10-14 year olds remained obese into adulthood, when adult obesity brings a legacy of cardiovascular disease, diabetes, mental health problems and some cancers, as well as wider indirect costs (Figure 3).

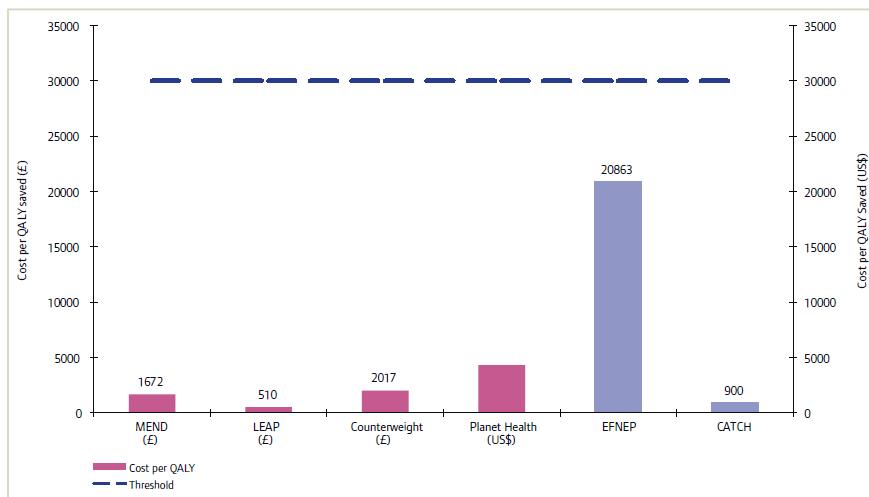
**Figure 3: Breakdown of current and future annual costs per obese child**



Child healthy weight programmes have been shown to be highly cost effective using the conventional UK NICE threshold of £20,000-£30,000 per quality adjusted life year

(QALY) (Figure 4). The figure shows a range of children's healthy weight programmes most of which include similar elements to ACES.

**Figure 4: Average cost effectiveness of childhood obesity interventions**



Source: Greater London Authority

## 5. Future Target

The Child Healthy Weight target 2011-2014 for NHSGGC is 3389 completers and local trajectories are detailed below.

**Table 2:**

|                          | Target<br>2011 - 2012 | Target<br>2012 - 2013 | Target<br>2013 - 2014 | Target<br>2011 - 2014 |
|--------------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| <b>NHSGGC 100%</b>       | <b>847</b>            | <b>1271</b>           | <b>1271</b>           | <b>3,389</b>          |
| North East Glasgow 16.1% | 136                   | 204                   | 205                   | 545                   |
| North West Glasgow 15.1% | 128                   | 192                   | 192                   | 512                   |
| South Glasgow 21.1%      | 179                   | 268                   | 269                   | 716                   |
| East Dunbartonshire 8.1% | 68                    | 105                   | 105                   | 278                   |
| East Renfrewshire 7.7%   | 66                    | 98                    | 98                    | 262                   |
| Inverclyde 7.4%          | 64                    | 94                    | 94                    | 252                   |
| Renfrewshire 15%         | 127                   | 191                   | 191                   | 509                   |
| West Dunbartonshire 9.2% | 79                    | 118                   | 118                   | 315                   |
| <b>Total</b>             | <b>847</b>            | <b>1270</b>           | <b>1272</b>           | <b>3389</b>           |

As the programme moves into its second phase a number of factors have been considered by the Steering group and are believed to be crucial for the Board to achieve both the new target and maintain commitment to an evidence based approach to childhood obesity interventions across NHSGGC.

- A combined approach of school based interventions (Active Choices) and Intensive community based interventions (ACES) is required
- Ongoing support and commitment to the programme by local Education Departments and Head Teachers
- Continued joint delivery with Local Authority Leisure Providers
- Ongoing evaluation and performance monitoring of the service during its maturation
- National funding confirmation beyond March 2012 (£427,116 allocated 2011/12)

## **6. Implementation of the ‘Big Eat In’**

Eight secondary schools volunteered to participate in the pilot. Preparatory work took place during the 2009 summer term with secondary school pupils, parents/carers and school staff in pilot schools as well as with P7 pupils, parents/carers and school staff in associated primary schools. An individualised package of initiatives was established in each school to provide a positive incentive for S1 pupils remaining on the school premises. A broad range of lunchtime activities were offered, including physical activity, arts and crafts, access to school libraries and the provision of informal social space.

Different models of implementation were used in the eight participating schools. In some schools, a more active restriction model was employed: S1 pupils were not allowed outside the school at all at lunchtime and the gates were actively monitored. In other schools, pupils were encouraged to stay in the school by making the lunchtime experience as pleasurable as possible. However, as the pilot proceeded, those schools employing active restriction models tended to relax these, moving towards a more consensual approach.

Prior to the implementation of the BEI, Glasgow City Council introduced a new licensing policy regarding street traders operating near secondary schools. This licensing policy (introduced in January 2009) restricted the sale of any food and/or soft drinks by street traders within 300 metres of any secondary school.

## **7. Evaluation**

An evaluation of the BEI was facilitated by the Glasgow Centre for Population Health (GCPH). Data were collected and analysed using qualitative and quantitative methods. The Scottish Centre for Social Research was commissioned to conduct the qualitative evaluation, supervised by GCPH. Baseline and follow up data were collected from pupils and school staff in each school through focus groups, face to face and telephone interviews. Parents/carers were interviewed as part of follow up data collection. Observational research also took place during May/June 2010 to gain a picture of the different approaches and to identify any unexpected consequences.

### **7.1 Quantitative Findings**

S1 school meal uptake rates across the eight schools remained consistently higher during the BEI than during the previous academic year. Data analysis also showed that S1 uptake rates remained higher than other year groups throughout 2009/10.

### **7.2 Qualitative Findings**

#### ***7.2.1 Young People’s Views***

The majority of young people involved were positive about the BEI. Some respondents thought they would have left school at lunchtime if the BEI had not been operating. Many pupils were also positive about the choice of food on offer and felt that school meals were good value for money (average price was £1.15).

Most young people felt that the BEI should continue for S1s (but not other year groups) using an ‘encouragement’ rather than ‘enforcement’ model. It was regarded as being successful, safe, good for health and enjoyable. Pupils were also aware that their parents valued the safety aspect. Most pupils thought that the BEI should be extended to other schools but considered that it should be restricted to S1 pupils due to practical constraints.

Young people and staff viewed the lunchtime activities very positively and these were seen to augment the benefits of the BEI. The only negatives associated with these activities (apart from a concern regarding lack of resources, aired by some school staff) were that the school lunch break was perceived by some respondents as too short to accommodate the consumption of school lunch and participation in an activity and that some schools lacked sufficient space to carry out activities.

### **7.2.2 Staff Views**

The general consensus from school staff was that the BEI was successful and should be rolled out. However, there were concerns regarding space and staffing if the initiative was extended to other year groups. The issue of competition from vans and retail outlets operating outside schools was highlighted as a major problem.

### **7.2.3 Parent / Carer Views**

Parents/carers were very positive about the BEI, particularly in relation to pupil safety. Many felt that S1 pupils were too young to be outside school at lunchtime and were concerned about the risk of injury from road traffic, getting into fights and stranger danger. The knowledge that their child was in school at lunchtime reassured them. They also regarded the BEI as providing an opportunity for pupils to socialise and make friends in a safe, structured environment.

## **7.3 Observational Findings**

Most schools appeared to be competing with a large number of outlets catering for the lunchtime market. Lunchtime options for pupils were noted to be more expensive, unhealthy and comprised much larger portions than school lunch portions. Pupils who ate outside school usually bought unhealthy options such as 'pot noodles', curry sauce and chips, burgers and fizzy drinks. There was some evidence of more boys than girls leaving school at lunchtime. Pupil behaviour was noted to be generally good but researchers highlighted road safety as a potential issue of concern as some pupils were observed running across busy roads rather than crossing at traffic lights or pedestrian crossings.

A positive atmosphere existed in school canteens with catering staff interacting sociably with pupils and staff and senior pupils supervising lunchtime. A range of activities were evident in each school which was enjoyed by pupils.

## **8. Conclusions of BEI Evaluation**

The BEI pilot was very successful in encouraging S1 pupils to stay within school at lunchtime and school meal uptake rates by S1 pupils remained higher than the previous year. S1 pupils were positive about their experience of the BEI and were in favour of the pilot being extended to other secondary schools. The eight secondary schools who participated in the BEI have continued to implement an S1 stay on site lunchtime policy during this academic session. In addition, several other Glasgow secondary schools have introduced stay on site policies.

### **8.1 Implications for Policy and Practice**

- The success of the BEI implies that stay on site lunchtime policies for junior secondary pupils could be introduced in schools elsewhere in Scotland.

- Provision of lunchtime activities (with no additional financial resource) was one of the major successes of the BEI. Partnership working amongst stakeholders, drawing on relationships with community groups, volunteers and senior pupils should be consolidated and strengthened in order to build on and develop provision of lunchtime activities.
- If schools implement stay on site policies, they should consider the introduction of measures tested out in the BEI that ameliorate the shortage of time at lunchtime, allowing S1 pupils to eat lunch and participate in a lunchtime activity. Examples of measures that could be considered include queue rotas, priority for those pupils taking part in an activity, provision of lunch pre-ordering systems, and staggered lunch breaks.
- During the pilot, school staff members gave up some of their free time to supervise and monitor the canteen and the school gates, as well as running and assisting with activities. If schools do implement such a programme, thought should be given to human resource implications for teaching staff.
- School lunchtime policies in primary schools are also important and should complement rather than contradict secondary school policies. If primary pupils have permission to leave school at lunchtime in primary school then it will be more difficult to implement stay on site policies in their first year of secondary school.
- School staff and parents want further action taken on vans and outlets selling unhealthy food and drinks that target school pupils at different times of the day, not just at lunchtime. Further attempts should be made by local authorities and partners to work with the proprietors of vans and food outlets to provide healthier choices for pupils. National and local licensing and planning policies and legislation should be reviewed and strengthened to enhance efforts to create healthier environments around schools.
- There is benefit in additional activities that incorporate physical activity and whilst a number of schools included these within the BEI further opportunities to support physical activity through the Active Schools and Active Travel programmes should be strengthened.

## **9. Conclusion**

Childhood obesity in Greater Glasgow and Clyde is being tackled through the development of an effective family based healthy weight intervention along with schools based approaches to encourage healthy school meals and also classroom based interventions. The development of a quality assured childhood obesity intervention(s) has been challenging and realistic timelines for service development should be recognised. However the HEAT target has successfully catalysed service capacity and partnership working across all local areas and this targeted service will continue to develop linked to more universal approaches.

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