

# Weighing in

## *Dealing with the challenge of obesity*

### The challenge

In the UK, the prevalence of obesity has trebled since the 1980s.<sup>1,2</sup> Almost a quarter of adults in the UK were estimated to be obese in 2006. And an incredible two thirds of adults (31 million people) and one-third of children (3 million) are now overweight.<sup>3</sup> By 2050 the Government believes that, without action, that will rise to nine in ten adults (59 million) and two-thirds of children will be overweight.<sup>4,5</sup>

The UK's heavy burden is placing a huge strain on public services and the economy. The direct cost of obesity to the NHS reached £4.2 billion last year: nearly 5% of the total NHS budget. The cost to the wider economy (including lost work time) is nearly £16 billion; these annual costs are expected to reach £50 billion by 2050.<sup>6</sup>

Excess body fat also has a significant health cost.<sup>7</sup> But most obese people do not receive any form of support before they develop a serious condition, because the NHS doesn't have the resources for such a large section of population.<sup>8</sup> This is unsurprising: UK investment in public health is only two-thirds of the OECD average and less than two years ago there was 20-fold regional variation in expenditure on health improvement.<sup>9,10</sup>

### What is being done

In 2004, the Government paper 'Choosing Health' acted as a starting point for a "national renewal of practical and acceptable action to make a difference to the health of people in England". In October 2007 the government published a new long-term plan to reverse the rising tide of obesity and overweight in the population. As part of this plan, a new Public Service Agreement (PSA) to promote better health and well being for all was established. The PSA targets children and aims to reduce the number of obese and overweight children to 2000 levels by 2020.<sup>11</sup>

A toolkit helping commissioners respond to obesity problems in their area was published in October 2008. It reaffirmed the government's ambition to be "the first major country to reverse the rising tide of obesity".<sup>12</sup> But government guidance offers little direction on what schemes work and why.

### What works

Weighing In identifies ten effective interventions that cover both healthy eating and physical activity. These schemes are all relatively recent efforts to deliver low cost interventions and increase the capacity of obesity services. The case studies are broadly divided into four categories: community schemes, active travel initiatives, health in the workplace, and lifestyle incentives. The research team has focused on examples that use new or innovative ideas; encourage individuals to take responsibility; demonstrate partnership working with stakeholders; have had a demonstrable impact; are replicable in other areas.

### What needs to change

It is striking that there is very little evidence of long term impact and cost effectiveness. Systematic reviews of the effectiveness of interventions reveal few scientifically conducted trials that have shown a direct effect on Body Mass Index (BMI) or obesity prevalence, and there is a lack of cost effectiveness evidence in the literature.<sup>13</sup> This does not necessarily mean that there are no effective interventions, but they are in the early stages of development meaning that the evidence to justify increased investment by the NHS, in accordance with the current assessment system, is limited.

The research team make four sets of recommendations:

1. Set up bodies to evaluate schemes and provide guidance
2. Stop public health funds being raided and empower communities to tackle obesity
3. Provide appropriate financial incentives for employers
4. Encourage early intervention

Scheme Name	Target Group	Focus	Methods	Scale	Funding & Costs	Impact
<b>MEND (Mind Exercise Nutrition... Do It!)</b>	Children (7-13 years old)	Exercise Diet Behaviour Change	Education	Biggest non-clinical obesity intervention in the world - 300 schemes all over the UK, and exported to Australia and Denmark	The Big Lottery Fund and Sainsbury's. £200-450 per household	Proven to drive improvements in key health outcomes at 12 months such as BMI, waist circumference, increased participation in and uptake of physical activity and reduced sedentary behaviour, as well as improved self-esteem.  A trial demonstrated that participants in the programme achieved a waist circumference of 4.3cm less than the control group and had a 1.9 kg/m2 lower BMI after 6 months. It also found that positive benefits were sustained, although reduced, after 12 months.
<b>LEAP (Local Exercise Action Pilots)</b>	All	Exercise	Education Exercise Classes Motivational Interviewing	10,433 participants across ten sites in England	The <del>DoH</del> , the Countryside agency and Sport England. £50 - £3,400 per participant	Average increase in physical activity equivalent to around 75 minutes of brisk walking a week.  80% of LEAP participants who were sedentary at the start of the project and 63% of those who were lightly active moved up at least one physical activity category.
<b>Well@Work</b>	Adults (20-65 years old)	Exercise	Advice Incentives	<del>Well@Work</del> reached up to 10,000 employees in 32 workplaces across England in the two year trial (2005-2007). Well-being pilots for 4,000 NHS staff were launched in 10 NHS Trusts across England in 2008.	British Heart Foundation and Active England. £150 per participant	Proven to help improve employees' health and bring benefits through fewer absences and an engaged workforce.  Specific outcomes:  <ul style="list-style-type: none"> <li>• Those taking part in the pedometer challenges increased their weekly step counts by a third;</li> <li>• People taking part in active travel schemes spent an extra 24 minutes walking or cycling to and from work (on average);</li> <li>• Use of the workplace stairs increased by 28% following initiatives such as posters</li> <li>• Participants upped their intake of fruit and vegetables, with an additional 11 percent who began meeting their five plus a day requirements;</li> <li>• Employers also reported a boost in staff morale.</li> </ul>
<b>Bike It</b>	Children	Active travel	Education	In four years of operation Bike It has rapidly expanded to 32 staff addressing almost 400 schools in England and Wales and around 70,000 children will benefit from Bike It during the 2008 - 9 academic year.	The Bike Hub, the Big Lottery fund, <del>DoH</del> and <del>DoB</del> . £6000 per school	A survey of 50 Bike It schools in summer 2007 showed that everyday cycling had more than trebled from 3% to 10% of journeys; weekly cycling had increased from 10% to 27%, and 25% of pupils had started cycling for the first time.  Bike It is working with over 30 schools across a range of London Boroughs. The number of pupils cycling every day has trebled from 3% to 9% of school journeys. The number of pupils who never cycle fell from 81% to 68%.

<b>Travel Smart</b>	All	Active travel	Individualised Travel Marketing	315,000 households have been targeted in 21 pilot projects, with 3 current projects targeting 25,000 households over 3 years.	Active England Projected costs of £25 per household	Projects have achieved relative reductions in car driver trips of 6% to 14%, with increases of 15% to 46% in walking and 14% to 75% in cycling. Recent evaluations have shown increases in active travel of 7 to 28 minutes each week and the shift from car travel to walking, cycling and public transport resulted in a 15% increase in average daily exposure to physically active forms of travel.
<b>The National Cycle Network</b>	All	Active travel	Infrastructure	At the end of 2007, 12,000 miles of routes and local links had been established, with roughly one-third traffic-free and two thirds minor rural roads and traffic-calmed urban streets.	DfT Costs approaching £1per capita per annum	78% of users self-report increased physical activity levels as a result of their local routes, 42% claim to be walking or cycling more than a year previously, and a third plan to walk or cycle more in future.
<b>COCO (Care of Childhood Obesity Clinic)</b>	Children	Exercise, Diet, Pharmacotherapy, and Bariatric Surgery	Techniques delivered by doctors, dieticians, and health and exercise specialists	140-150 children per year	NHS	Sustrans monitoring indicates that this usage level represents a saving of 70 million trips by car per annum, significantly boosting active travel and saving an estimated 329,000 tonnes of CO2.
<b>Tackling Obesity with HENRY</b>	Pre-school children	Diet	Training for Sure Start Nursery Practitioners	672 practitioners to date	Child Growth Foundation, Royal College of Paediatrics and Child Health, DCSF and DH £575 k in Government funding	83% success rate according to measures developed to determine progress against expected falls in BMI (set against 26% drop-out rate).
<b>WATCH IT!</b>	Children (8-16 year olds)	Exercise Diet	Education Motivational Interviewing	20 staff members, operating out of 12 clinics across Leeds	Neighbourhood Renewal funding, Leeds Primary Care research Consortium and Leeds PCT £457 - £2450 per child (2005 figures)	High approval ratings for the training programme and positive early feedback from parents.  Most individuals showed significantly decreased BMI at six months and reported improved nutrition, decreased self-harm and increased self-confidence.  Qualitative research indicated significant appreciation of the service, with particular benefits coming from the development of friendships with children experiencing similar problems.
<b>Vitality</b>	All	Exercise	Incentives	Globally, 1.5 million people are enrolled in the Vitality programme. In the UK 254 gyms are participating, covering upto 39,000 people and generating over 250,000 gym visits a month.	ProHealth Members who go to the gym incur healthcare costs which are on average 38% less than those who don't.	The number of ProHealth gym members increased by 63% (excluding new members joining specifically because of the offer). The average number of gym visits per week almost doubled, and the proportion of people going more than twice a week more than tripled to 49%.  A recent study of the South Africa programme showed that highly engaged members experience significantly lower costs per patient, shorter stays in hospital and fewer admissions.

## Conclusions and Recommendations

It is striking that given the prevalence of weight problems, there is very little evidence of long term impact and health economic analysis. Most of the schemes are relatively new; Randomised Controlled Trials are only now getting underway in many cases. But the lack of data is also due to the difficulty estimating how interventions translate into future health outcomes, which in turn depends on sustained behaviour change.

The research team make six sets of recommendations designed to help local policy makers share best practice, give practitioners the freedom to innovate, encourage governments to set appropriate financial incentives and to put the legislative framework in place, and provide appropriate clinical guidance.

### **1. Set up bodies to evaluate schemes and provide guidance**

a. The National Obesity Observatory should coordinate a programme of trials to develop comparable information on methods that achieve the most cost effective interventions available in different population groups. Emphasis should be placed on the continued collection of data from participants in order to study the long term impact of interventions.

b. Obesity hubs should be formed in each Strategic Health Authority (SHA) area, in order to coordinate research efforts in local Primary Care Trusts (PCTs) and share best practice within the local area and through submissions to the National Obesity Observatory.

c. There is no comprehensive clinical guidance for dealing with obesity. The National Institute for Clinical Excellence (NICE) should develop a best practice pathway, to ensure every obese person has access to appropriate interventions.

d. NICE should review community initiatives as Randomised Controlled Trial data becomes available, taking short-term quality of life gains into account, to enable NHS funding for evidence based interventions.

### **2. Stop public health funds being raided and empower communities to tackle obesity**

a. Where Local authorities are demonstrating an ability to tackle obesity, they should be given the freedom to bid for central funds in-line with the recommendations of the 2007 Sustainable Communities Act.

b. Other funding options might include reallocating a proportion of Department of Health (DoH) and Department for Children, Schools and Families (DCSF) funding as a ring-fenced payment for local government to tackle obesity. This has been recommended by the Association of Directors of Public Health because Public Health Budgets are commonly raided to deal with other priorities.<sup>14</sup>

c. The NHS recorded a surplus of £1.7 billion last year and will save an estimated £1.75 billion this year.<sup>15</sup> Currently PCTs are expected to hand back surpluses to the DoH. The government should allow PCTs to retain a portion of surpluses subject to development and investment in long-term schemes aimed at improving the health of the local population.

### **3. Provide appropriate financial incentives for employers**

It is in the interests of employers to have a healthy workforce, and in the interests of society to combat the sedentary lifestyle of most working age adults. As Dame Carol Black said in her review of the health of Britain's working age population, Working for a Healthier Tomorrow, "Good health is good business".<sup>16</sup>

a. Private gyms have to charge VAT on membership at 17.5 percent. Gyms run by leisure centres have historically enjoyed a partial exemption. If businesses use external gyms they do not receive the same tax incentives as companies which provide gyms 'on site'. Tax breaks should be provided for all gyms engaged with obesity schemes.

b. People who have been on acute courses should be passed onto on-going schemes

### **4. Encourage early intervention**

a. The Government's Sure Start Nurseries provide an ideal platform for intervention, but efforts should be made to reach all parents, such as through information provided by midwives or via NHS Direct.

## Individual case studies

### MEND

#### Description

*MEND* (Mind Exercise Nutrition... Do it!) is a social enterprise that was started in 2004. The organisation was developed by experts in child health at Great Ormond Street Hospital and University College of London. *MEND* offers free healthy living programmes to families across England and Wales.

*MEND* is aimed at 7-13 year olds who are overweight. The programme focuses on behaviour change (Mind), physical activity (Exercise) and a good diet (Nutrition), with an emphasis on personal responsibility (Do it). There is also a Mini-*MEND* Programme for 2-4 year olds. Programmes for 5-7 year olds and expectant mothers as well as educational resources for use in primary schools are currently being developed.<sup>17</sup> The scheme is designed to provide clinically effective interventions outside of a clinical setting, reducing costs and increasing the level of contact and support by up-skilling community care workers. The Government's *Healthy Weight, Healthy Lives* programme is expected to increase demand and funding for obesity schemes, and the *MEND* programme expects to be a major beneficiary.

#### Scale

*MEND* is now probably the biggest non-clinical obesity intervention in the world, with around 300 schemes running all over the UK, and exported to countries such as Australia and Denmark.<sup>18</sup> Over 5,000 children and families have already attended a *MEND* course.<sup>19</sup>

#### Outcomes

The *MEND* Programme has been proven to drive improvements in key health outcomes after a year, including reduced Body Mass Index (BMI), waist circumference, increased participation in and uptake of physical activity. Participants show substantial improvements in self-esteem.<sup>18</sup> A scientific trial conducted on over 100 obese children demonstrated that participants in the 9-week programme achieved a waist circumference of 4.3cm less than the control group and had a 1.9 kg/m<sup>2</sup> lower BMI after 6 months. These benefits were sustained after 12 months.<sup>20</sup> Unfortunately, as the project grows in size, there has been an increase in the number of drop outs from the programme.

#### Cost

*MEND* was initially funded with a £9 million grant from the Big Lottery Fund, and £3 million partnership from Sainsbury's. It now holds contracts with Local Authorities and Primary Care Trusts worth an estimated £3 million. *MEND* provide training, equipment and support, as well as essential monitoring and evaluation, while staff costs, site fees and the managerial overhead are paid from the local public health budget. Typical *MEND* costs range from between £200 - £450 per family.

#### Analysis

The *MEND* programme has been effective partly because it includes 2 years of ongoing support. Data collection of waist circumference and BMI must be collected during this period. But even this data cannot tell us the impact on future health outcomes - hence the lack of clear 'cost-benefit' data. The crucial question is to what extent, and in how many people, does this short-term intervention have a lasting impact on behaviour?

The National Obesity Observatory should coordinate a programme of trials to develop comparable information on methods that achieve the most cost effective interventions available in different population groups.

#### **Health risks**

Being overweight increases the risk of coronary heart disease, stroke, type 2 diabetes, high blood pressure, metabolic syndrome, osteoarthritis and cancer. For example, obese women aged 35 are four times more likely to have type 2 diabetes than women of normal weight. In 2006, over a million prescriptions were dispensed for the treatment of obesity, more than eight times the number prescribed in 1999.

## WATCH IT!

### Description

The *Watch It* programme has been running since January 2004 and targets 8-16 year olds from disadvantaged communities in Leeds. Clinics are located in sports or community centres and the programme is staffed by part time health trainers, who receive training, materials, ongoing support from team leaders and professionals.<sup>21</sup> The programme is divided into three stages: Bronze, Silver and Gold awards over a 12 month period, and includes individual counseling, Healthy Education Lifestyle Plan (HELP) tuition and group activity sessions. The programme has received a number of awards.<sup>22</sup>

172 children have participated to date, all of whom were classified as being extremely obese, and including many with mental health problems, making them the most challenging cases to deal with.<sup>23</sup>

### Scale

The project is relatively small with 20 staff members operating out of 12 clinics across Leeds. Plans are being developed for national rollout. It capitalises and extends community resources and facilities, while placing little pressure on existing NHS services and has been adopted at low cost in Birmingham and Harringey PCTs, without extensive employment of professionals.

### Outcomes

A process evaluation of the projects reported improved nutrition, decreased self-harm and increased self-confidence.<sup>24</sup> Qualitative research indicated significant appreciation of the service, with particular benefits coming from the development of friendships with children experiencing similar problems.<sup>25</sup> An evaluation by Leeds Metropolitan University highlighted WATCH IT's impact:

- In those children who achieved the silver award (6 months participation) there was a steady but significant reduction in obesity;
- The quality of life scores have improved to the normal range;<sup>26</sup>
- Attendance was excellent, with an average 3.3 hours physical activity per month and only 7.5% failing to attend.

### Cost

The service was set up with resources using Neighbourhood Renewal funding, followed by the support of the Leeds Primary Care Research Consortium, and mainstream funding from Leeds PCT.

Figures from 2005 suggest the cost per child range from £457 to £2450 per participant for the complete programme and ongoing monitoring, with total deliver costs between £65-100,000. The variation depends on venue costs and attendance levels.<sup>27</sup>

### Analysis

The success of *Watch It* is grounded in recruitment of trainers with strong people skills coupled with a well designed training programme.<sup>28</sup> Both of these factors contribute to the high attendance. Costs are kept down through partnerships with local providers, who provide facilities and professional support at minimal expense. But the research team have concerns regarding how this project could be scaled up effectively, without the development of a central management structure or local support networks.

Obesity hubs should be formed in each SHA area, in order to coordinate research efforts in local PCTs and share best practice within the local area and through submissions to the National Obesity Observatory.

## Tackling Obesity with HENRY

### Description

HENRY is the only initiative in the UK that focuses on babies, toddlers and preschool children. The emphasis lies in enhancing the skills of health and community practitioners so they are more effective in preventing and reversing obesity when working with young parents in disadvantaged communities. HENRY provides a core training course for practitioners, enabling them to deliver an 8-week programme for parents and carers. There is also an e-learning course and a toolkit with resources such as reading materials, portion guides, food and activity diaries and a DVD illustrating babies' hunger and fullness cues.

### Scale

HENRY has been successfully piloted with 15 Sure Start Centre teams (137 health visitors, nursery nurses and others). The e-learning course was piloted in 115 Children's Centres involving 535 practitioners.<sup>5</sup> Interest in HENRY training has come from 23 PCTs and SHAs in the UK, and another 35 Sure Start Centres are scheduled for participation in the next year.

### Outcomes

Evaluation showed that 99% of professionals found the training useful and that their confidence scores for working in this area increased by 75%. Follow up by an independent researcher 6 months later showed that 13 of the 15 Sure Start managers reported ongoing changes attributed to HENRY.

98% of participants reported that they would recommend the e-learning course to colleagues and 94% that it had enhanced their knowledge and skills when working with families. Attendance at the parenting groups has been high and feedback indicates that parents are instituting positive changes.

### Cost

HENRY was set up with a grant from the Child Growth Foundation. The pilot and evaluation in Sure Start Children's Centres were supported by grants to the Royal College of Paediatrics and Child Health from the Department of Health (£375,000) and the Department for Children Schools and Families (£200,000).

### Analysis

This programme's focus on very young children should be welcomed, because interventions are required to prevent obesity before it becomes a problem. Recent figures from the National Growth Monitoring Programme confirm this – by the time children start school 1 in 4 are overweight and 1 in 10 are obese.<sup>29</sup> A systematic review in the BMJ provided evidence that obesity has its roots at an earlier age than previously thought; rapid weight gain in the first weeks of life increases risk. Overweight toddlers are 5 times more likely to develop obesity in later childhood.<sup>30</sup> The Government's Sure Start Nurseries provide an ideal platform for intervention, but efforts should be made to reach all parents, such as through information provided by midwives or via NHS Direct.

## LEAP

### Description

LEAP (Local Exercise Action Pilots) programmes were commissioned in 2004, and ran until 2006, to test the best ways of encouraging people to be more active. The pilots focus on those who do little exercise and those at risk from health problems. The LEAP pilots involved a wide range of activities reaching various target groups, from activity camps for children to community walking programmes for elderly people recovering from strokes.<sup>31</sup>

The methods included targeted exercise 'referrals' from NHS professionals, peer mentoring sessions, exercise classes and outdoor activities, health campaigns and directories, interviews by trained advisers, and training & support for community leaders and coordinators.

### Scale

One LEAP site was located in each of the nine English regions, with the exception of the South West region which had two pilots. This figure excludes a wider audience who may have been exposed to a LEAP physical activity campaign or awareness raising intervention.

### Outcomes

A total of 10,433 participants were recorded as attending LEAP interventions. 80% of LEAP participants were sedentary at the start of the project. A comparison of 1051 participants showed an average increase in physical activity equivalent to around 75 minutes of additional brisk walking per week. Nearly two-thirds (63%) of those who were lightly active undertook more physical activity.<sup>32,33</sup>

### Cost

LEAP cost £2.6 million with funding coming from the Department of Health, the Countryside Agency and Sport England. The cost per participant of LEAP interventions ranged from £50 to £3,400 and the cost per participant who improved their physical activity category ranged from £260 to £2,790.

The cost per Quality Adjusted Life Year (QALY) gained, ranged from £50 to £510, compared to the NICE (National Institute for Clinical Excellence) funding threshold of £30,000 per QALY gained.

The savings for the NHS per participant ranged from £770 to £4,900 and for all interventions exceeded the current cost per participant, clearly demonstrating that schemes to improve public health are cost effective, and are worthy of a far greater proportion of NHS spending.<sup>34</sup>

### Analysis

The LEAP evaluation confirmed that the way that interventions are planned, delivered and managed can make a significant difference to their overall effectiveness.

Key design characteristics include undertaking prior outreach work in the target population, linking the scheme into existing local strategies and programmes, putting in place simple referral protocols, and tailoring the programme to meet the needs of target groups.

This requires local research, which can then form the basis of a training programme for local staff and volunteers. The LEAP evaluation also found that offering people a choice of interventions based in familiar locations, and developing exit routes into alternative activity options, improves uptake and the sustainability of behaviour change. The best way to achieve this is by developing partnerships with a range of organisations from the health, physical activity and sports sectors, which can provide resources, advice and sustainable exit routes for participants.<sup>35</sup> The recommendations about the National Obesity Observatory and SHA obesity hubs would help encourage collaboration between organisations and disseminate best practice.

## COCO (Care of Childhood Obesity Clinic)

### Description

COCO, part of the Bristol Royal Hospital for Children (BCH), was the first hospital-based, childhood obesity clinic in the UK founded in the late 1990s. The clinic consists of dedicated doctors, dieticians, and health and exercise specialists working to develop successful techniques to help obese and morbidly obese children lose weight.<sup>36</sup>

Methods include a scale of interventions starting with a basic lifestyle change programme. This moves onto an intense dietary programme and calorie restriction after 6 months depending on a patient's progress. In extreme circumstances pharmacotherapy, such as the NICE recommended drug Orlistat, and bariatric surgery are both used.<sup>18</sup>

NICE guidance for drug therapies and obesity surgery recommends attendance at a specialised clinic prior to these last resorts, which can be a barrier to life-saving treatments given the shortage of capacity and the scale of the problem.<sup>37</sup>

### Scale

COCO caters for 140-150 children per year, which is a fraction of the eligible children in the region.<sup>18</sup> Scaling up this intervention would require either a substantial increase in funding commitment or using a small number of specialist research centres to develop best practice, and to train professionals to deliver interventions in the community. There are few clinics offering effective treatment for childhood obesity.

### Outcomes

COCO received the BUPA Foundation Clinical Excellence award in 2006 in recognition for their innovative research in a greatly under-resourced area of medicine. It had previously received the Best Practice Award from the Association for the Study of Obesity in 2005. The clinic reports a success rate of 83% according to measures developed to determine progress against expected falls in BMI. However, 1 in 4 participants drop out of the programme

### Cost

COCO is currently working with the South West Primary Care Research Network, funded by the Research for Patient Benefit Programme, to pilot the transfer of clinic interventions to a primary care setting, with results expected in April 2010. This could contribute to the challenge of developing a best practice obesity pathway, to ensure adequate and sustainable NHS provision to help redress weight problems before they become life threatening. This will determine the cost effectiveness and efficacy of moving medical interventions into community settings, to enable delivery on a wider scale.

### Analysis

Specialist obesity clinics play an important role in developing methods for reducing obesity. For example, COCO recently ran the Mandometer trial, which has demonstrated the promise of an innovative technique that aims to re-train children to adjust their eating rate, which in turn reduces the calories they consume in a single sitting. Specialist clinics also provide for those most in need; more NHS funded childhood obesity clinics would be a rational response to escalating levels of childhood obesity. The dropout rate suggests that access is an issue. A medical environment may be an unattractive option for many.<sup>38</sup> But obesity specialists can play an important role in developing, monitoring and supporting community obesity interventions.<sup>39</sup>

There is no comprehensive clinical guidance for dealing with obesity. The National Institute for Clinical Excellence (NICE) should develop a best practice pathway, to ensure every obese person has access to appropriate interventions.

## Well@Work

### Description

The Well@Work programme consisted of nine regional projects which were designed to provide an evidence-base for the efficacy of a range of work based health programmes. The programmes – which ranged from education programmes to the use of incentives ran from Autumn 2005 until 2007. In June 2008, a further pilot for 4,000 NHS staff was launched in 10 NHS Trusts across England. NHS staff are being offered confidential, online health assessments linked to personalised health advice and lifestyle management programmes.

### Scale

Each Well @ Work project was delivered by a regional partnership or collaboration. Members of these partnerships include representatives from Primary Care Trusts (PCTs), local government, the voluntary sector and small and large businesses. The worksites where the interventions took place varied from region to region and included offices, factories, local council departments, GP surgeries, a prison and a hospital. Well@Work reached up to 10,000 employees in 32 workplaces across England over two years.<sup>40</sup>

### Outcomes

These programmes have been proven to help improve employees' health and bring benefits through fewer absences and an engaged workforce.<sup>41</sup> Employers also reported a boost in staff morale and an improvement in communications and interactions between employees and managers in the workplace.<sup>40</sup>

- Those taking part in the pedometer challenges - where each employee was given a pedometer - increased their weekly step counts by a third
- People taking part in active travel schemes, which encouraged employees to walk or cycle to work, increased their daily exercise by an average of 24 minutes
- Use of the workplace stairs increased by 28% following initiatives such as posters encouraging staff to take the stairs and redecoration of stairwells

### Cost

Well@Work was a joint programme led by the British Heart Foundation with funding from Active England (Sport England and Big Lottery Fund's joint awards programme) and the Department of Health, costing a total of £1.5m, or approximately £150 per participant. Resource commitments by PCTs included Technical Support Officer staff and provision of training for workplace champions, as well as coordinating the partnerships and research efforts.

### Analysis

The principle problem with government funded pilots is that the funding is intermittent. The pilots demonstrated that a coordinated partnership approach is required. And this means public health officials in PCTs and local authorities are most effective if they receive advice incorporating ongoing research efforts to ascertain and disseminate the most effective interventions.

Where local authorities are demonstrating an ability to tackle obesity, they should be given the freedom to bid for central funds in-line with recommendations of the 2007 Sustainable Communities Act. Other funding options might include reallocating a proportion of DoH and DCSF funding as a ring-fenced payment for local government to tackle obesity. PCT surplus could also be used to fund innovative schemes.

## Vitality

### Description

For long term funders of healthcare, it makes economic sense to fund immediate lifestyle changes in return for the future health benefits.<sup>42</sup>

Alongside traditional health insurance cover, PruHealth offers its 190,000 customers an incentivised wellness programme called Vitality in order to help them to lead a healthy life. The Vitality scheme awards members points for looking after their health, for example by going to the gym, having a health screen or eating healthily. The value of these incentives can amount to hundreds of pounds, including reduced health insurance premiums and access to a range of travel and entertainment rewards. For example, members going to the gym more than twice a week could get their gym membership for free.

### Scale

The usage based gym model was rolled out in 254 gyms across the country and covered up to 39,000 people, generating over 250,000 gym visits a month. The implementation relied on a combination of the gym swipe-card turnstile systems and the PruHealth billing system in order to calculate each member's monthly membership fee.

### Outcomes

Excluding new members who joined as a result of the offer, the number of PruHealth gym members increased by 63% as a result of the incentives package. All of these new members were people who previously had access to a heavily subsidised gym deal but were not taking advantage of it. It also had a major impact on the frequency of gym usage. Overall, the average number of visits per week almost doubled, and the proportion of people going more than twice a week more than tripled to 49%. This effect was still evident one year after the introduction of the new model.

### Costs

The net effect of this shift on the cost of healthcare is significant. Members who go to the gym incur healthcare costs which are on average 38% less than those who don't, after allowing for other factors such as age, gender, and location. Currently over 1.5 million people are enrolled in the Vitality programme across the three countries in which it operates (the UK, the USA and South Africa). A recent study covering 900,000 people from the South African programme, conducted in conjunction with the University of the Witwatersrand, the University of Cape Town and Harvard Medical School, found that highly engaged members of the Vitality programme experience significantly lower costs per patient, shorter stays in hospital and fewer admissions compared with all other groups. The difference in cost of treatment per beneficiary of the highly engaged group was over 7% lower for cardiovascular disease, over 15% lower for cancers and over 21% lower for endocrine and metabolic disease.

### Analysis

When community, school, workplace or marketing schemes are deployed to secure healthier lifestyles, they have, at best, demonstrated a short term impact. But this will benefit only translate into improved long term outcomes if behavior change is sustained; an 'exit route' into ongoing exercise options is essential. Incentives such as free gym membership or free swimming are likely to maximise the number of participants who remain active.

Sustainable exit routes from community interventions into ongoing exercise schemes should be devised in partnership with insurers, including incentives such as free gym membership or free swimming, subject to frequent usage. Private gyms have to charge VAT on membership at 17.5 percent. Gyms run by leisure centres have historically enjoyed a partial exemption. If businesses use external gyms they do not receive the same tax incentives as companies which provide gyms 'on site'. Tax breaks should be provided for all gyms engaged with obesity schemes.

## Bike It

### Description

Children need to do roughly twice as much physical activity as adults to stay healthy, and cycling to school offers one way to ensure that exercise is part of a child's daily routine. Bike It was developed 4 years ago by Sustrans to work in partnership with schools to increase levels of cycling to school and establish a pro-cycling culture.<sup>43</sup> The Bike It programme includes assemblies and classroom presentations, assistance with school travel plans, securing the installation of cycle storage and cycle training, after school cycle skills sessions, and a series of family-friendly school travel events and rides.

### Scale

The *Bike It* team has doubled in size each year since its foundation. 32 staff are currently working in almost 400 schools in England and Wales, and around 70,000 children will benefit from Bike It during the 2008/9 academic year. A number of PCTs have committed to fund *Bike It* officers this year, and the aim is to put at least one officer into each PCT local area within the next two years.

New funding from Cycling England will establish a further 10 cycle demonstration towns, each supported by a Bike It officer. The next goal is to establish a network of around 70 to 80 staff across England and Wales, enabling every local authority to join the project. *Bike It* is also working with over 30 schools across a range of London Boroughs.

### Outcomes

In 2007 Sustrans surveyed 11,000 children, and found that while nearly half of pupils would like to cycle to school, only 3% were doing so. A survey of 50 Bike It schools in summer 2007 showed that everyday cycling had more than trebled and a quarter of pupils had started cycling for the first time. Teachers say Bike It has transformed their schools: children are energised, excited and ready to learn.

Despite lower levels of bike ownership amongst children and greater safety concerns amongst parents, results in the London schemes have echoed trends seen in the rest of the country. The number of pupils cycling to school every day has trebled from 3% to 9% of school journeys.

### Costs

Bike It is funded by the bicycle industry through its "Bike Hub" fund. In 2007 Sustrans successfully led a consortium of similar organisations to receive funding from the Big Lottery Fund for active travel. In addition the Department for Transport and Department of Health in England have recently announced an increase in funding for Cycling England to the tune of £140 million over three years, which in turn funds *Bike It*.

1,000 Bike It officers, working with 10,000 schools each year and many millions of children, would cost £60 million per annum in contrast to the £50 billion per year the nation can expect to pay by 2050 if the trend of childhood obesity is not reversed.<sup>44</sup>

### Analysis

This is a promising intervention: evidence suggests that cycling is a popular exercise option, both in cities and rural areas, and that cycling in childhood increases the likelihood of cycling in later life.<sup>40</sup>

To deliver the benefits, every child should have a safe route to school, which is reflected in the fact that *Bike It* currently targets schools that benefit from infrastructure developments such as cycle routes. Further legislative development would encourage development of the appropriate infrastructure.<sup>45</sup> In Denmark, for example, there is a legislative framework requiring that every child has a safe route to school, and the government should consider ways to stimulate local infrastructure development.

## TravelSmart

### Description

It is not just children that can benefit from active travel as part of a daily routine. However, sedentary adults are more ingrained in their behaviours, and the key is to conduct outreach work to effect change. TravelSmart uses direct contact with households to identify and meet their individual needs for support, and to motivate people to change their daily travel choices.

### Scale

In the UK, a total of around 315,000 households have been targeted in 21 pilot and large-scale projects conducted since 2001. Current projects are located in Exeter, Watford and Lowestoft, each targeting 25,000 households over the next three years.

### Outcomes

A successful pilot project conducted by Socialdata in South Perth, Western Australia, in 1999 led to the world's first large-scale TravelSmart programme targeting 35,000 people in the same city during 2000/01. This was successful in achieving a 14% reduction in car trips and increases of 35% in walking, 100% in cycling and 17% in the use of public transport.

In the UK, projects are being evaluated using before and after surveys across the whole target population, which are adjusted to take account of background changes in behaviour measured across a separate control area. Projects have achieved relative reductions in car driver trips of 6% to 14%, with increases of 5% to 45% in walking and 14% to 75% in cycling. Recent evaluations have shown increases in active travel of 7 to 28 minutes each week and the shift from car travel to walking, cycling and public transport resulted in a 15% increase in average daily exposure to physically active forms of travel.

### Cost

The most recent TravelSmart programme in Gloucester, funded through Active England (jointly operated by Sport England and the Big Lottery Fund), was the first in the UK specifically to incorporate the promotion of physical activity alongside sustainable travel.

Sustrans estimates that TravelSmart could be delivered at a cost of around £25 per household.<sup>44</sup>

### Analysis

The lessons from abroad clearly demonstrate the efficacy of this outreach work, which holds the promise of securing long-term behaviour change. Evidence suggests cycling levels are low in poorer communities - which also have the highest levels of obesity. The outreach work should therefore focus on target populations, and include less strenuous options that do not require equipment, such as walking.

## The National Cycle Network

### Description

Sustrans has been working in partnership with local authorities, community groups, business, the NHS and others since 1995 to develop the National Cycle Network. In 2006 the Network won the World Health Organisation's Combating Obesity Award for its role in enabling people to be physically active every day.

The Network is designed to facilitate walking and wheelchair use as well as cycling, and other forms of active travel.

### Scale

At the end of 2007, 12,000 miles of active transport routes and local links had been established. Following an initial "strategic routes" phase (1995-2000) the concentration has been on creating networks for traffic free travel in urban areas. This more intensive local development is illustrated by two additional national programmes, each based on and linked by the National Cycle Network. Connect2 is creating 79 local walking and cycling networks in locations across the UK, and Links to Schools has now completed over 250 local Safe Routes to Schools projects serving 550 schools and a total catchment of almost 300,000 children.

### Outcomes

The National Cycle Network is the biggest single generator of walking and cycling journeys throughout the UK. In 2007 there were 354 million trips on the Network, roughly 50:50 walking and cycling. Usage on existing routes continues to grow at about 5% per annum, and growth is also generated by expansion of the Network itself. 78% of users self-report increased physical activity levels as a result of their local routes, 42% claim to be walking or cycling more than a year previously, and a third plan to walk or cycle more in future. Sustrans monitoring indicates that this usage level represents a saving of 70 million trips by car per annum, significantly boosting active travel and saving an estimated 329,000 tonnes of CO<sub>2</sub>.<sup>46</sup>

### Cost

A Sustrans Cost Benefit analysis of the transport schemes found benefit to cost ratios of between £15 to £33 pounds of benefit for every £1 spent. This is around ten times better value than traditional, motor traffic focused transport schemes.

Recent funding announcements from the DfT relating to cycling have begun to move England towards continental levels of investment: the three year £140 million allocation through Cycling England approaches £1 per capita per annum, where good European practice would be in the range £5 - £10 per capita per annum.

Sustrans' delivery structure could be scaled up over 2-3 years to handle that level of investment in both the strategic and the local network routes, but it would also be necessary to expand capacity in highway authorities across the country.

### Analysis

Department for Transport (DfT) figures show that the number of trips made by bicycle per person per year has decreased from 30 trips in the mid 1950s to 15 trips in 2004.<sup>47</sup>

While Bike It and TravelSmart offer practical ways to reverse this trend, busy roads and a lack of infrastructure remain a barrier. In the UK, Bike It and TravelSmart benefit from a single delivery organisation (Sustrans), which provides on-going monitoring of the impact of these schemes on public health. This information should feed into the National Obesity Observatory. In addition, they offer expert advice and circulating guidance, best practice and evidence to professionals working in areas such as planning, transport, higher education and public health.

## Footnotes

- <sup>1</sup>The Information Centre for Health and Social Care. Health Survey for England 2005: Updating of trend tables to include 2005 data. London: The Information Centre for Health and Social Care; 2006
- <sup>2</sup>Obesity is a condition in which excess body fat has accumulated to such an extent that health may be negatively affected. It is commonly defined as a body mass index (BMI = weight divided by height squared) of 30 kg/m<sup>2</sup> or higher. This distinguishes it from being overweight as defined by a BMI of between 25–29.9 kg/m<sup>2</sup>.
- <sup>3</sup>Craig R, Mindell J (eds.) Health Survey for England 2006. Volume 1: Cardiovascular disease and risk factors in adults. London: The Information Centre for Health and Social Care; 2008
- <sup>4</sup>Foresight Tackling Obesity: Future Choices – Project Report. Government Office for Science, 2007
- <sup>5</sup>In 2005 a systematic review in the British Medical Journal provided evidence that obesity has its roots at a much earlier age than previously thought. It showed that rapid weight gain in the first weeks of life increases risk and that overweight toddlers are 5 times more likely to develop obesity in childhood.
- <sup>6</sup>Dr Kerry Swanton, Healthy Weight, Healthy Lives: A toolkit for developing local strategies, London: Department of Health, October 2008  
Annual Report of the Chief Medical Officer 2002
- <sup>7</sup>In 2006, over a million prescriptions were dispensed for the treatment of obesity, more than eight times the number prescribed in 1999.
- Hypertension (high blood pressure): it is estimated that people who are obese are five times more likely to have high blood pressure than people of normal weight
  - Coronary artery disease and stroke: obesity is a contributing factor to cardiac failure in more than 10% of patients. Furthermore, obesity plus hypertension is associated with an increased risk of ischaemic stroke (stroke caused by blood clots or other obstructions)
  - Cancers: 10% of all deaths from cancer in non-smokers are related to obesity. This figure rises to 30% of all deaths from endometrial cancers
  - Osteoarthritis: Frequent association has been made between increasing weight and increasing prevalence of osteoarthritis in the elderly
  - Reproductive function: 6% of infertility in women has been attributed to obesity
  - Liver disease: 40% of people with the liver disease non-alcoholic steatohepatitis are obese
- <sup>8</sup><http://www.publications.parliament.uk/pa/cm200304/cmselect/cmhealth/23/23.pdf>
- <sup>9</sup>Andrew Lansley, No Excuses, No Nannyng, available at <http://www.reform.co.uk/documents/080827%20Andrew%20Lansley%20speech.pdf>
- <sup>10</sup>The Chief Medical Officer on the state of public health
- <sup>11</sup>This replaces the previous target to 'halt the year on year rise in obesity in children under the age of 11 by 2010
- <sup>12</sup>Dr Kerry Swanton, Healthy Weight, Healthy Lives: A toolkit for developing local strategies, London: Department of Health, October 2008
- <sup>13</sup>Roux L, Donaldson C (2004) Economics and Obesity: Costing the Problem or Evaluating Solutions? OBESITY RESEARCH Vol. 12 No. 2 February 2004 p. 173-179; GS Goldfield, LH Epstein2, CK Kilanowski, RA Paluch and B Kogut-Bosler (2001) Cost-effectiveness of group and mixed family-based treatment for childhood obesity. International Journal of Obesity (2001) 25, 1843–1849; NHS Centre for Reviews and Dissemination (CRD). The prevention and treatment of childhood obesity. Effective Health Care 2002;7(6): 12; Summerbell CD, Ashton V, Campbell KJ, Edmunds L, Kelly S, Waters E. Interventions for treating obesity in children. The Cochrane Database of Systematic Reviews 2005, Issue 4
- <sup>14</sup><http://www.publications.parliament.uk/pa/cm200506/cmselect/cmhealth/646/646we29.htm>
- <sup>15</sup><http://news.bbc.co.uk/1/hi/health/7584868.stm>
- <sup>16</sup>Dame Carol Black, <http://www.workingforhealth.gov.uk/documents/working-for-a-healthier-tomorrow-tagged.pdf>
- <sup>17</sup><http://www.mendprogramme.org/aboutmend>
- <sup>18</sup><http://eppi.ioe.ac.uk/cms/>
- <sup>19</sup>MEND Press release, Free child obesity programmes set to benefit thousands more families, available at <http://www.mendprogramme.org>
- <sup>20</sup>Sacher PM, Chadwick P, Kolotourou M, Cole TJ, Lawson MS, Singhal A (2007) The MEND Trial: Sustained improvements on health outcomes in obese children at one year. Obesity 15: A92.
- <sup>21</sup>Rudolf M et al, (2006) Watch It: A community based programme for children and adolescents, Archives of Disease in Childhood 91:736-739
- <sup>22</sup>WATCH IT received the NHS Yorkshire and Humberside Innovations Award in 2006. It also received the British Association of Child Health CATCH Award in 2004, the 2006 best paper award from the International Journal of Health Promotion and Education and Category (Childhood and Adolescents) and was overall national winner of the National Obesity Forum Awards 2007.
- <sup>23</sup>Average 65, as measured by the PedsQoL questionnaire
- <sup>24</sup>Drake AJ, (2006) Obesity in childhood and adolescence: epidemiology, management and mechanisms, J R Coll Physicians Edinb, 36:159–161
- <sup>25</sup>Rudolf M et al, op.cit.
- <sup>26</sup>Average score 80, as measured by the PedsQoL questionnaire
- <sup>27</sup>C Spoor, P Sahota, C Wellings, MCJ Rudolf, Costing a pilot complex community-based childhood obesity intervention, Watch It submission
- <sup>28</sup>Staff are provided with brief training in the solution focused approach, motivational interviewing, and basic nutrition and healthy lifestyle information during a two week induction period. Training in first aid and child protection is also provided. They are provided with a WATCH IT training manual, the Healthy Eating Lifestyle Programme (HELP) manual, and attend further training in physical activity.
- <sup>29</sup>[http://www.dh.gov.uk/en/PublicHealth/HealthImprovement/Healthyliving/DH\\_073787](http://www.dh.gov.uk/en/PublicHealth/HealthImprovement/Healthyliving/DH_073787)
- <sup>30</sup>Baird J, Fisher D et al. Being big or growing fast: systematic review of size and growth in infancy and later obesity BMJ 2005; 331: 929-37
- <sup>31</sup>Learning from LEAP: a report on the Local Exercise Action Pilots (2007) Department of Health
- <sup>32</sup>Sedentary is equivalent to less than 30/60 minutes of moderate activity per week (adult/child); lightly active is 1-4 30/1-6 60 minutes per week; moderately active is 5 30/7 60 minute sessions per week; highly active is 5 30/7 60 vigorous activity
- <sup>33</sup>Buckworth and Dishman 2002 demonstrated that as many as 50% of participants who initiated physical activity interventions dropped out within 6-9 months.
- <sup>34</sup>The formulae used by the National Institute for Health and Clinical Excellence to determine what the NHS will fund
- <sup>35</sup>Learning from LEAP: a report on the Local Exercise Action Pilots (2007) Department of Health
- <sup>36</sup><http://www.bristol.ac.uk/brio/news/>
- <sup>37</sup><http://www.nice.org.uk/guidance/index.jsp?action=article&o=32423>
- <sup>38</sup>It is worthy of note that as a final resort, minimally invasive surgical procedures, such as a laparoscopic adjustable band around the stomach can be very effective treatment. This procedure achieves an 87% reduction in excess weight loss in comparison to a 21% standard reduction for non-surgical interventions over a two year period.
- <sup>39</sup>Paul O'Brien MD, Outcomes for Surgery for Obesity, available at <http://www.conference.co.nz/files/RACP,%20Fri%200950%20O'Brien.pdf>
- <sup>40</sup><http://www.bhf.org.uk/>
- <sup>41</sup>Healthy Weight Healthy Lives: Six months on (2008) Department of Health; Department for Children, Schools and Families
- <sup>42</sup>There is an increasing recognition of the role of incentives in health promotion. See, for example, 'Paying the Patient', King's Fund (2008) for a review of the literature and 'Working Well: A Global survey of health promotion and workplace wellness strategies', Buck Consultants (2008) for an indication of the widespread use of incentives in health promotion among employers, particularly in the US.
- <sup>43</sup>For more information, visit <http://www.sustrans.org.uk/default.asp?sID=1102425335218>
- <sup>44</sup>Sustrans submission, unpublished
- <sup>45</sup>Bike It project review (2008) available at [http://www.sustrans.org.uk/webfiles/Bike%20It/sustrans\\_bike\\_it\\_review\\_2008\\_may08.pdf](http://www.sustrans.org.uk/webfiles/Bike%20It/sustrans_bike_it_review_2008_may08.pdf)
- <sup>46</sup>More information at [http://www.sustrans.org.uk/webfiles/rmu/route\\_monitoring\\_report\\_end%2007.pdf](http://www.sustrans.org.uk/webfiles/rmu/route_monitoring_report_end%2007.pdf)
- <sup>47</sup>Craig Moore, Andy Cope and Alex Bulmer, The role of traffic-free routes in encouraging cycling among excluded groups: A case study of the national cycle network, World Trade and Transport Policy Practice 12:3, 2006

## Methodology

We drew for this report on DH funded work carried at the EPPI Centre, Institute of Education, University of London. This is reported in Aicken C, Arai L, Roberts H (2008) Schemes to promote healthy weight among obese and overweight children in England. Report. London: EPPI-Centre, Social Science Research Unit, Institute of Education, University of London. A weblink to this work can be found here: <http://eppi.ioe.ac.uk/cms/Default.aspx?tabid=2393> and the searchable database <http://eppi.ioe.ac.uk/webdatabases/Intro.aspx?ID=13>.

The evidence for schemes included in Weighing In were developed through dialogue with Local Authorities, Primary Care Trusts, charities, social enterprises and commercial organisations.

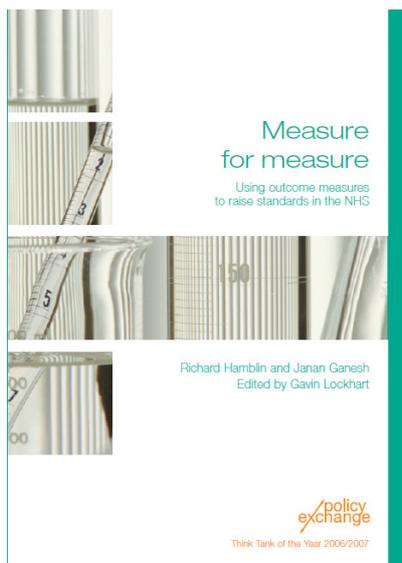
### Health research at Policy Exchange

An independent NHS will need to find cost-effective ways of preventing ill health; engaging individuals in living healthy lives and improving overall outcomes for patients. And nowhere is the balance between personal freedom and limited government brought into sharper focus than the debate about government interventions in public health. The NHS is a complex and advanced people-management organisation. Yet, over the last decade, there has been relatively little emphasis on the motivation of its people, particularly its professionals. Policy Exchange aims to study and publish a report on management in the NHS. Ensuring that clinical priorities, and clinicians, form the basis of all NHS decision making can only improve outcomes for patients.

At the end of 2008, Policy Exchange will publish a major piece of research in the NHS' ability to taking up and spreading innovations and existing best practice. The paper will show what can be done to improve this position. In the coming year, Policy Exchange will publish papers on the most pressing public health 'epidemics' of the 21st century – obesity and alcohol harms – as well as examining specific disease areas where there is strong evidence for early clinical intervention in order to reduce overall burdens to the NHS and social care systems. We will work with patient groups and clinicians. Our approach will be pragmatic and evidence based. Looking further forward, we aim to look at ways of improving integration of healthcare from the patients' perspective.

### Publications from the Health Unit

#### Measure for Measure



#### All Change Please



### About Policy Exchange

Policy Exchange is an independent think tank whose mission is to develop and promote new policy ideas which will foster a free society based on strong communities, personal freedom, limited government, national self-confidence and an enterprise culture. Registered charity no: 1096300. Policy Exchange is committed to an evidence-based approach to policy development. We work in partnership with academics and other experts and commission major studies involving thorough empirical research of alternative policy outcomes. We believe that the policy experience of other countries offers important lessons for government in the UK. We also believe that government has much to learn from business and the voluntary sector.

#### Trustees

Charles Moore (Chairman of the Board), Theodore Agnew, Richard Briance, Camilla Cavendish, Richard Ehrman, Robin Edwards, Virginia Fraser, George Robinson, Andrew Sells, Tim Steel, Alice Thomson, Rachel Whetstone.