The award-winning integrated obesity service in Rotherham

Matthew Capehorn

Obesity is a modifiable risk factor for coronary heart disease and death by myocardial infarction (Yusef et al, 2004). Obesity is also a risk factor for other comorbidities such as hypertension, raised lipid levels, diabetes and impaired glucose tolerance (World Health Organization, 2000). Targeting obesity with a multidisciplinary team approach is an important way to minimise the risk of developing conditions, such as diabetes, in later life. This article describes the process of commissioning the integrated obesity management service in Rotherham, which won the 2009 NHS Health and Social Care Award.

In 2008, the Health Survey for England Report showed that 25% of men and 28% of women were obese (BMI >30 kg/m^2). In total, 67% of men and 60% of women were either overweight (BMI 25–30 kg/m^2) or obese (Joint Health Surveys Unit, 2009). This suggests that we are more likely to meet someone with a weight problem than someone of a healthy weight. Furthermore, 34% of men and 44% of women had central obesity, and it is known that this excess visceral fat that is concentrated in and around the central organs (characterised by a raised waist circumference greater than 102 cm in men or greater than 88 cm in women) is more associated with adverse effects and comorbidities (Joint Health Surveys Unit, 2009).

The obesity epidemic may get worse if we do not tackle the increasing rise in childhood obesity, as evidence suggests that obese children have a high risk of becoming obese adults (Serdula et al, 1993). The 2008/9 National Child Measurement Programme (NCMP) showed that in reception year (ages 4–5 years) 22.8% of children were overweight or obese (BMI centile >85th). In Year 6 (ages 10–11 years) 32.6% of children were overweight or obese (BMI percentile >85th) (Department of Health, 2009). If current trends continue, then projections made by the Foresight Report suggest that by 2050, two in three children will be overweight or obese, nine out of every 10 adults will be overweight or obese, and 50% of adults will be classified as obese by BMI (Foresight, 2007).

It is important that obesity is recognised as a chronic relapsing condition, whether it is argued that this is due to genetic predisposition, learnt behaviour, or the obesogenic environment. The development of type 2 diabetes is intimately linked with obesity, and there are now biochemical models of how and why excess visceral fat leads to increased insulin resistance and progression of the condition (Eckel et al, 2005). Obesity in women leads to a 12.7-times increased relative risk of developing diabetes and in men a 5.2-times increased relative risk (National Audit Office, 2001). Fifty-eight per cent of type 2 diabetes is estimated to be due to underlying obesity (Jung, 1997). Diabetes substantially increases the risk of coronary heart disease (CHD), and men with type 2 (non-insulin dependent) diabetes have a two- to four-fold greater risk of CHD, and women have a three- to five-fold greater risk of CHD.

The question remains, how do we best manage obesity and type 2 diabetes?

Article points

1. The development of type 2 diabetes is intimately linked with obesity, and there are now biochemical models of how and why excess visceral fat leads to increased insulin resistance and progression of the condition.
2. The argument for investing in weight management services to save expenditure on the consequences of obesity was successfully made, and it was agreed that NHS Rotherham would make £3.5 million available to fund the NHS obesity strategy for a 3-year period.
3. A recent audit, performed by Rotherham Institute for Obesity, showed that in those still in the service at 6 months, 57% of adults and 71% of children had met, or done better than, NHS Rotherham weight loss targets.

Key words

- Commissioning
- Integrated care
- Obesity

Matthew Capehorn is a GP, Clinical Director of the National Obesity Forum and Clinical Manager of the Rotherham Institute for Obesity (RIO).

Page points

1. With the support of the partners at Clifton Medical Centre I applied for funding through our Personal Medical Services system and made arrangements to fund a weight-management clinic for our practice population, which at the time was approximately 12 000 people.
2. In 2004, following a practice business meeting and review of the service, there was a realisation that the funding, which had not increased since the conception of the clinic, no longer covered the staff costs or time involved in providing the service.
3. Representations were made to members of the Professional Executive Committee of the Rotherham PCT with a provisional model for Rotherham Institute for Obesity and estimated costs for service to be provided across the whole of Rotherham.

Clifton Medical Centre, Rotherham

I joined Clifton Medical Centre as a newly qualified GP in 2000. It was very shortly after, that I realised that as a healthcare profession we seem to chase our tails in the identification and treatment of conditions such as high blood pressure, high cholesterol and pre-diabetes, in the hope of preventing CHD, rather than concentrating on the identification and treatment of one of the main causes of these conditions – obesity – and particularly those with central obesity.

With the support of the partners at Clifton Medical Centre I applied for funding through our Personal Medical Services system and made arrangements to fund a weight-management clinic for our practice population, which at the time was approximately 12 000 people. I was successful in this bid and received £8100 per year to provide a fortnightly lunchtime clinic, which was advertised for motivated people wanting help to lose weight, rather than targeted at those in most need of weight loss.

An initial audit suggested that whether we had targeted those with a BMI >25, or 30 kg/m^2, or restricted it to those with a BMI >30 kg/m^2 with comorbidities we would have been inundated with thousands of patients, and with no guarantee that they would be motivated and receptive to change. Initially, due to restricted resources and staff availability, this clinic needed to involve me weighing, measuring and seeing every person. Due to high demand, and audit results showing success, this clinic soon became a full regular session every week, and expanded to include a specialist nurse, healthcare assistant and dietitian.

In 2004, following a practice business meeting and review of the service, there was a realisation that the funding, which had not increased since the conception of the clinic, no longer covered the staff costs or time involved in providing the service. At this time I had to decide whether to approach the PCT to provide additional funding, and whether this should remain for our own practice population or whether we should expand the service provided. By the time of negotiations, we were in a practice-based commissioning (PBC) group with our neighbouring practice in the Doncaster Gate Health Village in Rotherham. Together, our combined population was approximately 30 000, which represented over 10% of the total Rotherham population (approximately 250 000 at the time). However, due to the economy of scale, it was evident to me that provision of a Rotherham-wide weight-management service would be more cost-effective.

Representations were made to members of the Professional Executive Committee of the Rotherham PCT with a provisional model for the Rotherham Institute for Obesity (RIO) and estimated costs for the service to be provided across the whole of Rotherham. The proposal was greeted favourably, and the arguments for the need to address the obesity epidemic were all fully accepted, but at the time the funding was not available. In response to this initial rejection, all interested parties were invited to form a Rotherham Obesity Strategy Group (ROSG), which met on a regular basis, to develop a more comprehensive strategy with other weight-management interventions to support RIO. This included provisional models for community-based educational interventions, and care pathways to link RIO in with more specialised interventions such as bariatric surgery.

There was soon a realisation that the problem of obesity was not going away, and the ROSG was re-formed, at the request of the PCT, with full multidisciplinary team attendance. All interested parties were invited to attend, including representatives from the clinicians, the Local Medical Committee, public health, and the Rotherham Metropolitan Borough Council. The ROSG now had the specific remit to address whether the PCT should be prioritising funding for weight management and to formulate a comprehensive and tiered weight-management strategy for adults and children, accessible from the moment they present, and to include all levels of intervention up to and including bariatric surgery in line with NICE guidance (NICE and National Collaborating Centre for Primary Care, 2006).

I believe that the PCT taking ownership of the ROSG was key to the success in achieving funding for a region-wide weight-management

service. In March 2008, a report was made to the board of the PCT, presented by the Chair of the ROSG, Carol Weir, the public health obesity lead for the PCT. Credit should be given to her in driving the group forward in achieving its goal of producing what is now the NHS Rotherham Obesity Strategy.

Despite popular belief, Rotherham does not have a particularly high prevalence of obesity. In 2008, based on estimates from local QUEST and QOF data, an estimated 60% of the local population was overweight or obese, in line with the national average, although 22% had no recorded BMI. The NCMP data showed that the Rotherham childhood prevalence for those overweight or obese, were similar, but slightly higher than the national average (Weir, 2008). Nevertheless, the argument for investing in weight-management services to save expenditure on the consequences of obesity was successfully made and it was agreed that NHS Rotherham would make £3.5 million available to fund the NHS obesity strategy for a 3-year period. The ROSG was then given the responsibility of finalising detailed service specifications for each tier of intervention, and Carol Weir was given responsibility as lead commissioner. NHS Rotherham's Healthy Weight Commissioning Framework (*Figure 1*) proceeded to win the 2009 NHS Health and Social Care Award.

The NHS Rotherham Obesity Strategy

The NHS Rotherham Obesity Strategy for the management of healthy weight in adults and children involves four tiers of intervention. The initial level of intervention is the primary activity most often done in the primary care setting, which involves identifying those who have weight problems and are motivated to change, especially those with medical conditions, such as diabetes, that are likely to worsen with increased weight. Within the clinical setting, this often comes from chronic disease clinics, such as diabetic clinics, as part of the individual's overall management plan,

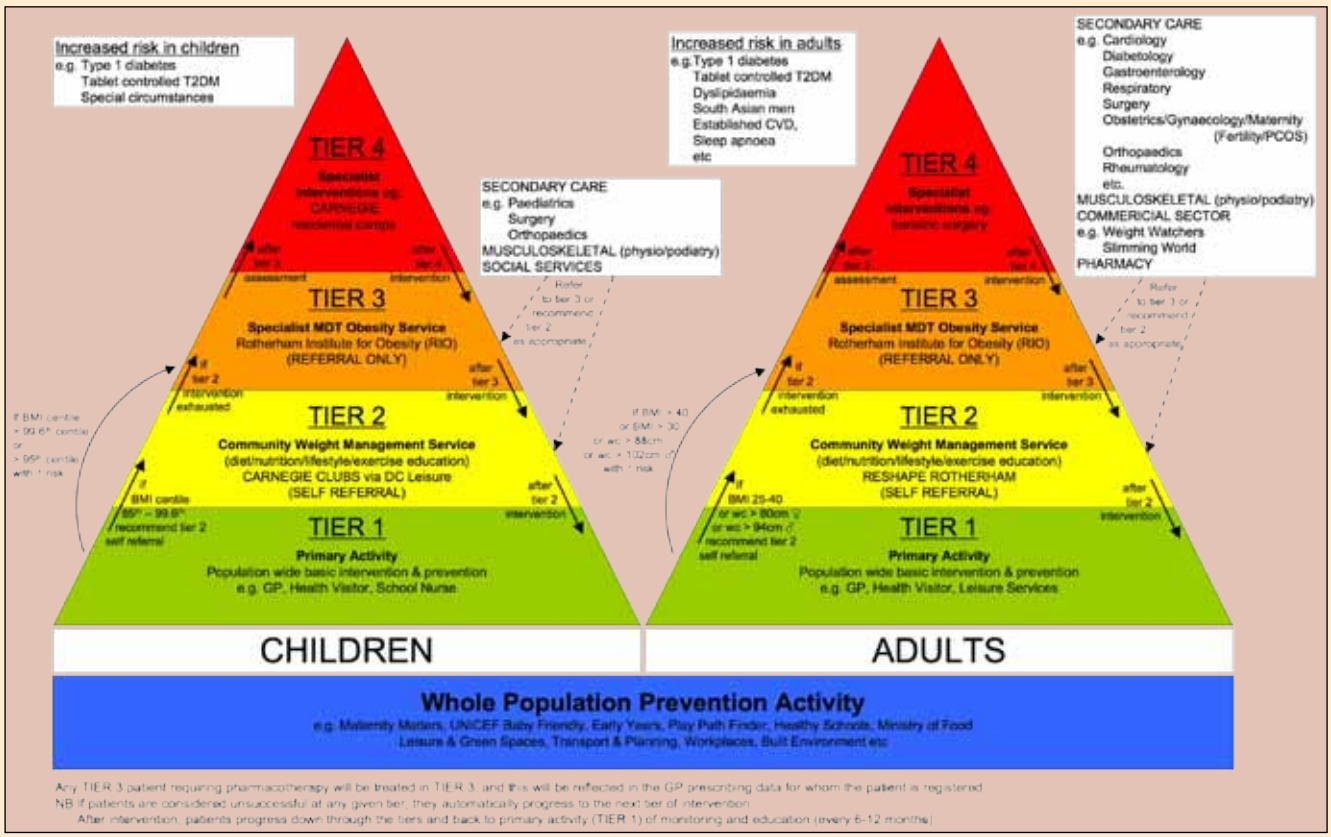

Figure 1. NHS Rotherham Obesity Model, July 2009. CVD=cardiovascular disease; PCOS=polycystic ovary syndrome; WC=waist circumference.

Page points

1. Primary activity, including health promotion advice, and weighing and measuring, can be done by anyone qualified to give advice and competent with weighing scales, a height measure and a tape measure, such as any other healthcare professional from primary or secondary care, pharmacists, council workers, leisure services or the private sector.
2. Those who do not lose sufficient weight in the initial level of intervention, or for those who are considered to be more at risk of the cardiometabolic consequences associated with obesity such as diabetes and who need more specialist intervention, are referred into the third-tier intervention, which is a specialist centre for weight management.
3. All people are initially assessed in a dedicated weighing and measuring room and all parameters, including blood pressure, weight, height, BMI, and fat composition using bio-impedence scales, are taken.

or more recently from cardiovascular disease risk assessments. However, it is important to clarify that primary activity, including health promotion advice, and weighing and measuring, can be done by anyone qualified to give advice and competent with weighing scales, a height measure and a tape measure, such as any other healthcare professional from primary or secondary care, pharmacists, council workers, leisure services or the private sector.

The second tier of intervention for adults is a time limited 10-week programme of diet, nutrition, lifestyle and exercise advice provided by trained staff, under the supervision and management of the local Rotherham dietetics department. This is called Reshape Rotherham. Patients can self-refer into this service, or be referred by an appropriate healthcare professional after an assessment of motivation.

There is an equivalent second tier intervention provided specifically for children, by Carnegie International Weight Management, which is delivered by our local leisure service providers, DC Leisure. This is a time-limited 12-week programme similar to the adult Reshape Rotherham programme, which is designed for children to access with their parents or main carers. Again, people can self-refer into this service, or be referred by an appropriate healthcare professional after an assessment of motivation.

Those who do not lose sufficient weight in this initial level of intervention, or for those who are considered to be more at risk of the cardiometabolic consequences associated with obesity such as diabetes and who need more specialist intervention, are referred into the third-tier intervention, which is a specialist centre for weight management. This specialist service is provided by the RIO under my clinical management.

The Rotherham Institute for Obesity

The RIO is a unique specialist centre for the management of weight problems with a multidisciplinary approach to reducing and maintaining weight loss. RIO is especially appropriate for people with diabetes and those at risk of developing diabetes. It is the specialist tier of intervention for adults and children with weight-management problems, as part of the overall NHS Rotherham Obesity Strategy. It has a multidisciplinary team approach to managing weight problems by providing specialists that can provide different approaches. This includes dedicated obesity specialist nurses, healthcare assistants, dietetic input for complex dietary needs, "Rotherham Cook & Eat" skills education, talking therapies including psychological input, an exercise therapist, group work for exercise, therapies and nutritional advice, and a GPSI in obesity for any medication issues.

It is intended that the majority of people who require the services provided by RIO will be those who have received the initial tiers of weight-management intervention offered locally but are considered unsuccessful in their level of weight loss. Individuals can also be referred directly to RIO via local GPs, or medical practitioners at the local hospital if they meet specific criteria that deem them to be particularly at risk of the cardiometabolic consequences of obesity, such as diabetes, or need any of the more specialist interventions offered by RIO. Care pathways have been developed to allow referrals for patients who may have accessed, yet been unsuccessful in, other accredited weight-management programmes that may be offered locally by pharmacists or in the private sector.

When referrals are initially received they are triaged to assess which, if not all, of the services offered by RIO are required, and appointments made as appropriate. All people are initially assessed in a dedicated weighing and measuring room and all parameters, including blood pressure, weight, height, BMI, and fat composition using bioimpedence scales, are taken. Regularly calibrated weigh-bridge scales are used to provide consistency of measurements for weights of morbidly obese levels, and for patients with limited mobility or wheelchair users. If no recent blood tests have been performed, these are taken on-site to exclude previously undiagnosed metabolic conditions, such as diabetes and pre-diabetes states, or associated risk factors.

All people receive further basic dietary

and nutritional advice as well as lifestyle and exercise education throughout the length of time they are in the service. This may include further explanation of the specific roles of calories, portion sizes and nights off the diet, or education on basic cooking skills to complement nutritional advice given (provided in on-site kitchen facilities).

There are opportunities to discuss other aspects of their lives with health trainers, talking therapists proficient in techniques such as cognitive behavioural therapy, neuro-linguistic programming, emotional freedom techniques, and hypnotherapy, or access to a psychologist. Appointments can be made with an exercise therapist, who can help to tailor a specific exercise programme suitable for the individual (provided in on-site gym facilities), and patients are then encouraged to engage with free and subsidised local leisure facilities that have been arranged through partnerships with RIO.

Those who are to be considered for pharmacotherapy are assessed by the GPSI for a review of their coexisting medical conditions and medications. This is an opportunity to review current diabetes medications that may be associated with weight gain or hypoglycaemia, and recommendations made to change them to newer, more weight-friendly, alternatives. Consultations are performed on a one-to-one basis in dedicated consulting rooms, although group work is available.

People going through the RIO service are considered a success if they meet certain criteria depending on the individual. For example, for most people this may be considered to be 3–5% weight loss at 3 months, maintained at 6 months, or 5% weight loss at 6 months; for others it may be more. In the case of certain children, however, weight maintenance alone may be considered a successful goal.

RIO also serves an important role in the preoperative and postoperative care for people requiring referral for bariatric surgery. All NHS Rotherham patients meeting local specialist commissioning group criteria for NHS funding (BMI >50 or >45 kg/m^2 with comorbidity) must come through RIO services and assess the appropriateness of the referral. Over the past year, a RIO audit has shown that this has seen a reduction in inappropriate referrals to bariatric surgical centres, and an overall cessation of the year-on-year increase in referrals for surgery, due to the success that the multidisciplinary team approach has had on weight loss in morbidly obese people who would have otherwise required surgery.

A fully integrated care pathway exists in both directions through the tiers of the overall obesity strategy. Results from the service are regularly audited and the overall Rotherham obesity strategy is subject to a regular monitoring process by service providers and members of NHS Rotherham. A recent audit performed by RIO showed that in those still in the service at 6 months, 57% of adults and 71% of children had met, or done better than, NHS Rotherham weight-loss targets.

Given recent funding cuts, the overall NHS Rotherham model costs approximately £1 million per year, but provides comprehensive and effective weight-management services to anyone within the 250 000-strong population of Rotherham. If these costs were extrapolated and the model reproduced in every area of equal size, then the UK population of 60 million people could be managed for the approximate cost of £240 million. I would consider this to be highly cost-effective given the Foresight projections that show the direct and indirect costs of obesity will reach £49.9 billion by 2050 (Foresight, 2007).

Looking ahead

We are currently developing RIO to provide more services. Provided that funding is recurrent, we will soon be looking to start the screening and diagnosis of obstructive sleep apnoea for RIO patients (to develop the case for the management of this under-diagnosed, yet potentially fatal, condition in primary care) and to develop facilities to offer endoscopic surgical procedures, such as the bariatric intra-gastric balloons and endobarriers, in the primary care setting.

In the meantime, people in Rotherham can at least have the opportunity to be prescribed a trip to RIO! ■

We would like to take this opportunity to acknowledge the following individuals and organisations for their kind help and/or donations in helping to make RIO a success:

- NHS Rotherham.
- Rotherham Cook & Eat.
- The National Obesity Forum, and their Chairman, Professor David Haslam.
- David Mahon, Bariatric Surgeon.
- Sci-Fit.
- Johnny Minkley, BBC Radio 1 gaming expert.
- EA Sports.
- New Concept Gaming.
- Abbott Pharmaceuticals.
- Roche Pharmaceuticals.
- K D Davis & Sons, Rotherham.

Department of Health (2009) *National Child Measurement Programme: England, 2008/09 School Year. December 2009.* NHS Information Centre, Leeds

Eckel RH, Grundy SM, Zimmet PZ (2005) *Lancet* **365**: 1415–28

Foresight (2007) *Tackling Obesities: Future Choices Project.* Government Office for Science, London

Joint Health Surveys Unit (2009). *Health Survey for England 2008.* NHS Information Centre, Leeds

Jung RT (1997) Obesity as a disease. *Br Med Bull* **53**: 307–21

National Audit Office (2001) *Tackling Obesity in England.* The Stationery Office, London

NICE, National Collaborating Centre for Primary Care (2006) *Obesity: The Prevention, Identification, Assessment and Management of Overweight and Obesity in Adults and Children. Clinical Guideline 43.* NICE, London

Serdula MK, Ivery D, Coates RJ et al (1993) *Prev Med* **22**: 167–77

Weir C (2008) Report to Board. Mar 2008. NHS Rotherham

World Health Organization (2000) *World Health Organ Tech Rep Ser* **894**: 1–253

Yusuf S, Hawken S, Ounpuu S et al (2004) *Lancet* **364**: 937–52