Weight expectations: The Glasgow and Clyde weight management service

Marie Prince, Lorna Forde, Susan Boyle

Article points

1. The Glasgow and Clyde Weight Management Service has developed a care pathway from prevention through to the management of morbid obesity.
2. A multicomponent, multidisciplinary approach is used to tackle weight management.
3. The Glasgow and Clyde Weight Management Service offers evidence-based treatment approaches that are equitable across NHS Greater Glasgow and Clyde.

Key words

- Obesity
- Prevention
- Weight management

Marie Prince is a Clinical Psychologist; Lorna Forde is the Glasgow and Clyde Weight Management Service Lead; Susan Boyle is Consultant Clinical Psychologist. All are based at the Glasgow and Clyde Weight Management Service, Glasgow.

The Scottish Health Survey (Scottish Executive, 2005) reported that 20% of Scottish adults were obese, equating to approximately 191 000 Glaswegians. More recently, the 2008 Foresight report (Government Office for Science, 2008) estimated that by 2050 more than 60% of males and 50% of females in the UK will be clinically obese. Without action this will have a cost of around £49.9 billion per year. To address this increasing problem, NHS Greater Glasgow and Clyde developed a steering group that included acute, community and local authority services – leading to the launch of the Glasgow and Clyde weight management service in 2004. The service was established and developed based on peer-reviewed, evidence-based national guidelines. This article provides an overview of the service.

The Glasgow and Clyde weight management service (GCWMS) is an award-winning service, receiving the NHS Diamond Healthy Lifestyle Award in 2008, and the National Obesity Forum Best Practice Award for excellence in weight management in 2006. The service is multidisciplinary, comprising dietitians, psychologists, physiotherapists, technical instructors and administrative support. Staff numbers have increased three-fold since its inception, and continue to grow.

Prior to the development of the GCWMS there was not a coherent weight management strategy across NHS Greater Glasgow and Clyde (NHS GGC). GPs were able to prescribe weight-loss medication, however, the NHS was unable to provide ongoing support for individuals requiring it. People requiring weight management support were often referred to the community or outpatient dietetic departments. Unfortunately, due to resource limitations, weight-management cases could not be prioritised over acute referrals – leading to long waiting lists. With regard to bariatric surgery, individuals would be on long waiting lists without any care pathway in place, again due to a lack of resources. Therefore, the GCWMS aimed to provide a coherent care pathway for all those who required weight-management support.

The service has been established and developed based on peer-reviewed, evidence-based national guidelines, including the Scottish Intercollegiate Guidelines Network (SIGN, 1996) clinical guidance for the

management of obesity and the NICE (2006) obesity guideline. Both SIGN (1996) and NICE (2006) recommend a multicomponent, multidisciplinary approach to weight management. Lifestyle changes, including dietary and physical activity advice alongside behavioural interventions to facilitate change, are recommended. The guidelines recommend that weight-loss medication is initiated following the implementation of dietary, exercise and behavioural interventions that have failed to achieve the target weight loss. Bariatric surgery is indicated for people with severe obesity when all non-surgical interventions have been trialed and have failed to achieve and maintain a clinically beneficial weight loss. Intensive specialist support is recommended for bariatric surgery patients.

Prior to GCWMS, each of the above components of weight management was delivered on an ad-hoc and disparate basis. Therefore, GCWMS has established a weight-management pathway of care, covering prevention through to the management of morbid obesity and associated physical and psychological conditions that is equitable across NHS GGC.

GCWMS has a clear governance framework and referral pathway that optimises existing resources. Service protocols govern anti-obesity prescribing and provide the care pathway for bariatric surgery across NHS GGC. As shown in *Figure 1*, GCWMS operate at level 3 of this pathway, treating people with a BMI >35 kg/m^2, or over 30 kg/m^2 if there are additional reasons for intervention. Additional reasons for intervention include being aged 18–25 years, requiring pre-surgical weight loss, mobility issues, iatrogenic weight gain or certain cultural backgrounds with a waist circumference that significantly increases health risks. GCWMS also contributes to the development of both level 1 and 2 services. Consultation and training are provided to community-based weight-management services and clinicians, including DSNs, dietitians and exercise counsellors, and primary care service providers including GPs and practice nurses, to ensure an integrated care pathway.

The following will provide an overview of the service, including the dietary guidance provided, pharmacotherapy and bariatric surgery protocols, and the contributions of physiotherapy and clinical psychology to the service.

Service aims

1. To establish a weight-management pathway of care, from prevention through to the management of morbid obesity, which is evidence-based and equitable across NHS GGC.
2. To achieve a clinically significant weight loss of 5 kg for all individuals, in line with national guidelines.

The weight management programme

GCWMS uses a multicomponent approach, delivering intervention over three phases, predominantly in a group format (*Figure 2*). Phases 1 and 2 of the programme are predominantly delivered by dietitians with support and consultation from other members of the team.

Phase 1 is a nine-session lifestyle intervention delivered over 16 weeks. Each session has three components: diet, physical activity and behavioural approaches to weight

Page points

1. Guidelines recommend that weight-loss medication is initiated following the implementation of dietary, exercise and behavioural interventions that have failed to achieve the target weight loss.
2. Consultation and training is provided to community-based weight-management services and clinicians, including DSNs, dietitians and exercise counsellors, and primary care service providers, including GPs and practice nurses, to ensure an integrated care pathway.

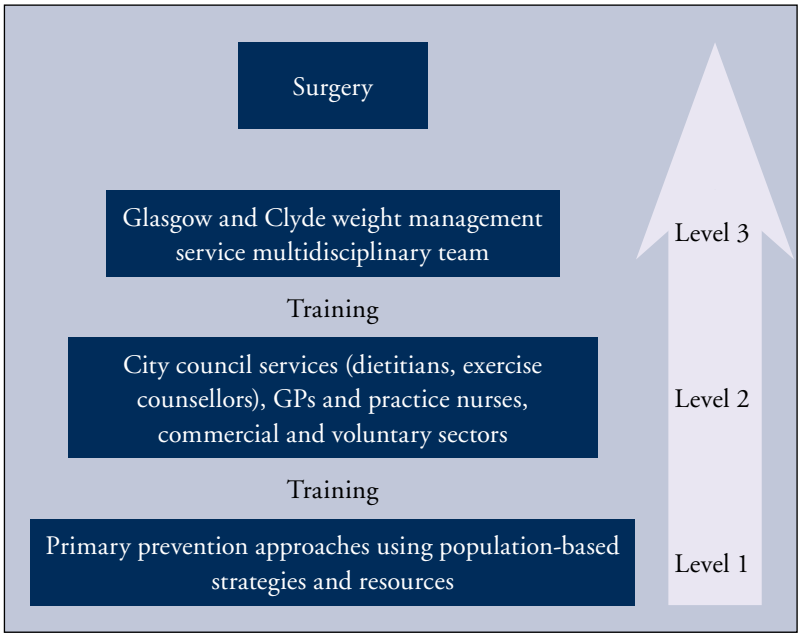

Figure 1. Glasgow and Clyde weight management service framework.

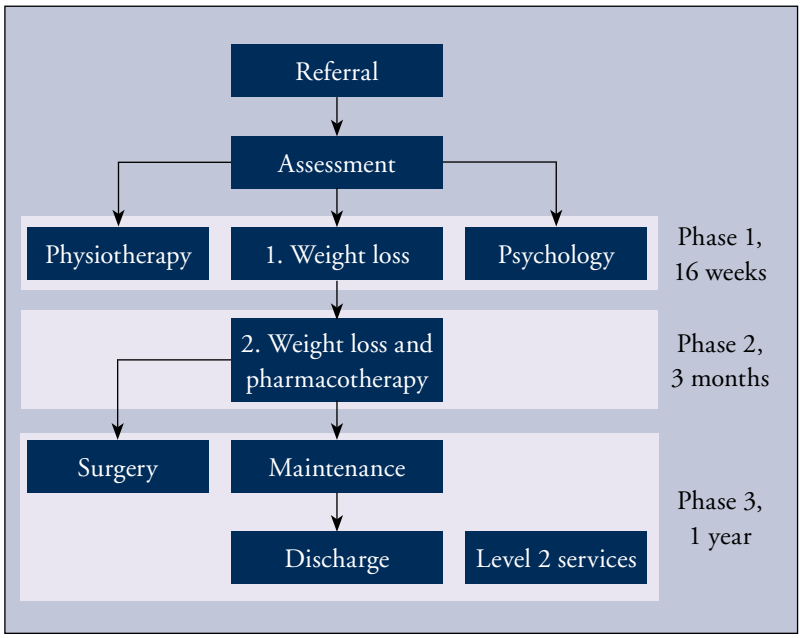

Figure 2. The three-phase intervention provided by the Glasgow and Clyde weight management service surgical pathway.

management – all delivered by the clinician facilitating the group session.

Phase 2 affords participants the option of losing more weight through a new personalised dietary prescription (PDP), a low-calorie diet or pharmacotherapy. This phase consists of three monthly sessions, facilitated by a dietitian.

Phase 3 – or the maintenance phase – focuses on maintenance of weight loss and is delivered by physiotherapists – this is due to the importance of physical activity to maintain weight loss. Due to the chronic and relapsing nature of obesity, the maintenance phase consists of 12 monthly sessions. This period of time allows people to consolidate the lifestyle changes that they have already made with ongoing professional support. This also ensures that appropriate support and direction can be given when lapses occur.

Dietary component of the programme

The dietetic component of the programme uses a PDP based on the person's age, gender, weight, height and activity level. The PDP is a portion- and calorie-controlled eating plan that facilitates achievable and sustainable weight loss of 0.5–1 kg per week via a controlled 600 calorie deficit (SIGN, 1996). This should lead to a 5–10 kg weight loss across phase 1 of the programme.

Total energy expenditure is calculated using the WHO (1985) equation for basal metabolic rate, combined with an activity factor adapted from the World Health Organization (1985). The PDP is based on the Food Standards Agency "eatwell plate" (http://tinyurl.com/eatwell).

Pharmacotherapy

Pharmacotherapy is indicated in phase 2 of the programme if an individual has not lost a minimum of 5 kg since beginning phase 1. Pharmacotherapy is prescribed as an adjunct to dietary and lifestyle change; the two medications used within the service are orlistat and sibutramine. At the end of phase 1 dietitians discuss the modes of action, benefits, limitations and any contraindications of the drugs with the groups, and provide literature to ensure that an informed decision is made. Literature is also provided regarding the relevant support programmes, such as www.mapassist.co.uk and Change for Life, which aim to support weight loss and lifestyle change in conjunction with medication.

Participants are given the opportunity to discuss their drug preference with the dietitian facilitating their group, and a collaborative decision regarding the most suitable drug is agreed upon. The individual's GP has ultimate responsibility for drug choice and prescribing, although the service informs the GP of the person's preference. The GP then completes a reply slip to inform the service of which agent, if any, has been prescribed.

The GCWMS monitors blood pressure, pulse and weight for those individuals prescribed sibutramine, and weight only if prescribed orlistat. Protocols are followed with regard to weight-loss outcomes, side-effects and any other areas which may indicate that medication needs to be discontinued. The lead dietitian ensures protocols and current evidence-based practice is followed within the service. Pharmacotherapy clearly has a role in the management of obesity as it does in

diabetes, but when drug treatment is initiated the role of lifestyle intervention remains central to its management (Dietitians in Obesity Management UK, 2007).

Bariatric surgery

All GCWMS protocols for bariatric surgery have been agreed in consultation with surgeons in NHS GGC, and are the only route to bariatric surgery in the area. All individuals with a BMI > 40 kg/m^2 or > 35 kg/m^2 with comorbidities (such as diabetes), who fail to lose 5 kg following completion of phases 1 and 2, incorporating pharmacotherapy, low calorie diet and lifestyle change, can be considered for surgery. A lead dietitian coordinates all individuals eligible for surgery.

Those who are eligible for surgery attend a weight-loss surgery information session to ensure that they are fully informed about the surgical process. After this session, people can opt to be considered for surgery and attend the GCWMS surgical assessment clinic. Those who decline a surgical assessment following the surgical information session commence phase 3 of the programme.

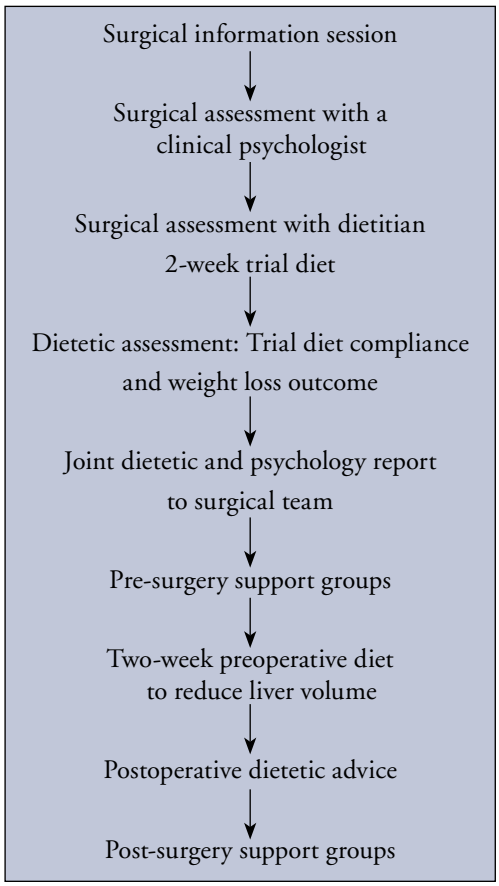

Figure 3. Glasgow and Clyde weight management service surgical pathway.

Individuals who do decide to go for surgery are initially assessed by a clinical psychologist as psychological evaluation of patients prior to surgery is recommended in national and international guidelines. The purpose of this is not necessarily to approve or deny surgery, but to identify those emotional, cognitive and behavioural factors that may influence weight loss and make recommendations to improve outcome. This assessment may lead to individual therapy for identified issues or it may be that attendance at the pre- or post-surgery groups is all that is additionally recommended.

Following psychological assessment, suitable participants consult with a dietitian as those eligible for surgery need to demonstrate compliance with the postoperative advice. Compliance is measured by a 2-week 1000 calorie/day diet that is similar to the postoperative diet. Expected weight loss is determined by the energy deficit of the diet and previous dieting and weight-loss history. People are made aware that that if they are unable to comply with the diet, they may not be eligible for bariatric surgery, but will be offered weight-maintenance sessions within the programme.

Weight-loss is one measure of compliance, but their overall experience of the diet will be discussed with the dietitian. Individuals who have demonstrated a level of compliance will be referred to the surgical team for review. In addition to assessing future compliance, a low-calorie diet is necessary prior to the surgery to reduce liver volume (British Obesity Surgery Patient Association, 2009).

People deemed suitable for bariatric surgery by the surgeon are invited to attend the GCWMS pre-surgery preparation groups. These are held monthly and consist of dietary, physical activity and psychological advice that will help prepare them for surgery. Post-surgery patients see the dietitian fortnightly while

Page points

1. Those who are eligible for surgery attend a weight-loss surgery information session to ensure that they are fully informed about the surgical process.
2. Individuals who do decide to go for surgery are initially assessed by a clinical psychologist as psychological evaluation of patients prior to surgery is recommended in national and international guidelines.
3. Following psychological assessment, suitable participants consult with a dietitian as those eligible for surgery need to demonstrate compliance with the postoperative advice.

adjusting to the new diet, and this contact gradually reduces over time. Further individual psychological support is provided if required. GCWMS offer life-long postoperative support to all individuals via monthly post-surgery support groups, which are run by a dietitian and a clinical psychologist. See *Figure 3* for the surgical pathway.

Physiotherapy

Physiotherapists lead on the physical activity and exercise components of the programme. They perform generic assessments regarding suitability for the service – these assessments are performed by all three disciplines.

Physiotherapists also conduct assessments and therapy sessions regarding exercise prescription and treatment of musculoskeletal conditions within the service. They also run exercise classes for individuals using the GCWMS. Phase 3 of the programme is also led by physiotherapists, as are the blood-pressure monitoring clinics.

Psychological approaches

The psychological component of the programme is evidence-based and underpinned by cognitive behavioural therapy (CBT) principles as recommended by SIGN (1996). Clinical psychologists within the service have designed the psychological elements of the GCWMS and provide staff training and support accordingly. *Box 1* summarises some of the CBT principles within the programme.

In addition to the psychological components of the programme, people are able to access individual therapy for eating- and weight-related distress. The Weight Loss Readiness Test II (Brownell et al, 2004) is completed prior to their initial assessment. This is a brief screening measure that indicates the potential presence of binge eating and purging. If a patient indicates that these areas may be relevant, the assessing clinician can administer the Eating Questionnaire (Brownell, 2004). This is an assessment of eating behaviours that will indicate the presence of clinically significant disordered eating patterns. These assessments, along with clinical judgement, indicate any need for psychological assessment.

Psychological issues that may interfere with an individual's ability to implement and adhere to the necessary lifestyle changes, such as significant life events or ongoing mental health issues, are also addressed. The Hospital Anxiety and Depression Scale (HADS; Zigmond and Snaith, 1983) is completed prior to initial assessment. A clinically significant score on this scale or clinical judgement can also lead to a psychological assessment.

Clinical psychologists run group-based treatment for clinically significant disordered eating issues in conjunction with the phase 1 weight management programme. Supervision, research, service development and consultation are additional roles of the GCWMS clinical psychologists.

Service evaluation

All patients complete baseline self-report measures on entry to the service. The measures include demographic details, weight and diet history, the Weight Loss Readiness Test II, HADS and the Impact of Weight on Quality of Life questionnaire (Kolotkin et al, 2001).

Over a 6-month period these measures were re-administered at the end of phase 1 of the programme. These data are currently being used to research the potential impact of the GCWMS on quality of life. However, the primary outcome measure for the service is total weight loss, which is calculated based on weight change across the programme and is collected for all participants. In addition to the formal measures, all individuals are given the opportunity to provide qualitative written feedback throughout the programme.

Service outcomes

The GCWMS receives, on average, 400 referrals per month from GPs and hospital doctors, with up to 22% of referred individuals diagnosed with type 2 diabetes. The number of referrals has recently increased by approximately one third, as the service has become available to all people within NHS GGC. *Table 1* summarises the referral rate and demographics of referred individuals.

Box 1. Cognitive behavioural therapy approaches to weight management (Waddon and Foster, 2000).

- Self-monitoring (food intake, physical activity, mood).
- Goal setting.
- Stimulus control.
- Assertiveness.
- Understanding eating.
- Lifestyle habits.
- Increasing physical activity.
- Planning and problem solving.
- Cognitive restructuring.
- Relapse prevention.

In line with SIGN (1996) guidance, an individual is deemed to have obtained a "successful" outcome if they lose at least 5 kg over the course of phase 1. As shown in *Table 2*, approximately half of those who begin phase 1 complete it. Of those who complete phase 1, 39% in the lower BMI range and 42% in the higher range are successful in terms of weight loss, although there is a wide range of weight change, as shown in *Table 2*. Of all those who start phase 1, approximately one in four are successful with lifestyle intervention only. The GCWMS outcomes are favourably comparable with other weight management programmes.

Conclusions

The established care pathway ensures that all adults within NHS GGC can access consistent, equitable and evidence-based support with weight management. As noted above, approximately one in four of those who start phase 1 of the programme obtain a successful weight loss, although recent evaluation of the data suggests that this is an underestimate of the success rate. A paper will be released in the coming 12 months containing a detailed statistical evaluation of the service.

Based on the pending evaluation and future national guidance, the GCWMS will continue to strive to undertake best practice to meet the population's clinical needs. ■

Table 1. Referral rates and demographics at the Glasgow and Clyde weight management service. Average referrals per month = 400.

	BMI ≥30–35kg/m^2	BMI >35kg/m^2
Male	26%	29%
Female	74%	71%
Average age (years)	47	48
Age range (years)	18–89	18–87
Type 2 diabetes	10%	22%
BMI range (kg/m^2)	30–35	35–99
Average BMI (kg/m^2)	34	44

Table 2. Group outcome data from phase 1 of the Glasgow and Clyde weight management service.

	BMI ≥30–35 kg/m^2	BMI >35 kg/m^2
% attend ≥4 sessions	43%	58%
% successful weight loss	39%	42%
Range of weight change	–12.2±3.8 kg	–22±6 kg

British Obesity Surgery Patient Association (2009) *Pre-op Liver Reduction Plan*. BOSPA, Taunton

Brownell K (2004) *The LEARN Program for Weight Management*. 10th ed. American Health Publishing Company, Dallas, TX

Brownell DK, Hager DL, Leermakers E (2004). *The Weight Loss Readiness Test II, Version 4.1*. American Health Publishing Company, Dallas, TX.

Dietitians in Obesity Management UK (2007) *The Dietetic Weight Management Intervention for Adults in the One to One Setting. Is it Time for a Radical Rethink?* DOM UK, Middlesborough

Government Office for Science (2008) *Foresight. Tackling Obesities, Future Choices: Project Report. 2nd Edition.* Government Office for Science, London

Kolotkin RL, Crosby RD, Kosloski KD, Williams GR (2001) Development of a brief measure to assess quality of life in obesity. *Obesity Research* **9**: 102–11

NICE (2006) *Obesity: The Prevention, Identification, Assessment and Management of Overweight and Obesity in Adults and Children*. NICE, London

Scottish Executive (2005) *The Scottish Health Survey 2003*. Scottish Executive, Edinburgh

Scottish Intercollegiate Guidelines Network (1996) *Obesity in Scotland: Integrating Prevention with Weight Management*. SIGN, Edinburgh

Wadden TA, Foster GD (2000) Behavioral treatment of obesity. *Med Clin North Am* **84**: 441–61

World Health Organization (1985). *Energy and Protein Requirements: Report of a Joint FAO/WHO/UNO Expert Consultation*. WHO, Geneva

Zigmond AS, Snaith RP (1983) The hospital anxiety and depression scale. *Acta Psychiatr Scand* **67**: 361–70