

Bariatric Surgery Research – September 2005

Background and Additional Information

How was this data gathered?

BOSPA polled 73 surgeons by mail between March and July 2005. 60 of them (82%) provided data for this survey. Surgeons were asked to provide details on the operations performed in 2004 and the numbers anticipated to be performed in 2005. Additional information was compiled from that held on file by BOSPA from previous contacts with the surgeons or from information provided by pharmaceutical companies. *NB: BOSPA has not audited individual surgeon's data.*

How many surgeons?

Two years ago, there were just a dozen practicing Bariatric surgeons in the UK. That number now exceeds 70, with more being trained regularly at specialist centres in Leeds and Liverpool or being sponsored by pharmaceutical companies to attend training courses overseas. But the development of this specialty in the UK has lagged behind other European countries, for example, the number of surgeons exceeds 200 in Belgium, Italy and France and 160 in Spain¹. In 2003 alone, over 12,000 operations were performed in France and 6,000 in Belgium. And yet the levels of morbid obesity are higher in the UK than in either of these countries. Most bariatric surgeons come from a background of Upper GI surgery and many face enormous battles within their hospital trusts when trying to develop this service, including securing funding and a commitment from the trust for equipment to perform the surgery.

Region	Surgeons 2004	Surgeons 2005	Total procedures 2004	Total procedures 2005
East Anglia	4	4	59	147
East Midlands	6	7	81	170
London & SE	12	16	384	614
NE and Yorkshire	9	10	394	811
NW and Cumbria	7	9	534	729
Southern England	4	6	168	366
South West	5	6	64	212
West Midlands	5	5	415	990
Scotland	6	7	139	215
Wales	2	2	49	87
Northern Ireland	1	1	0	0
	61	73	2,287	4,341

Table 1: Number of surgeons and total procedures done per region of the UK in 2004 and 2005.

Table 1 shows that the three areas of the country where most surgery is being performed are the North West and Cumbria, North East and Yorkshire (where there

¹ Buchwald H, Williams SE. Bariatric Surgery Worldwide 2003, *Obesity Surgery* 14; 1157-1164.

is an average 81 operations performed per surgeon) and the West Midlands (where the average jumps to almost 200).

Northern Ireland

Northern Ireland suffers particularly at the hands of the Health Boards and the funding issue. Despite having an experienced bariatric surgeon and a willing multidisciplinary team, their refusal to allow funding has prevented a service being established for Northern Irish patients. The complete irony is that the Health Boards have approved funding for patients to be sent to England for surgery and will allow patients to travel long distances for major surgery to return home into a system that refuses even to provide any specialist support.

Which operations?

The total number of bariatric procedures anticipated to be performed in 2005 is 4,341, an increase from 2004 by 90 percent.

Procedure	2004	2005
Gastric band	1236	2559
Gastric bypass	783	1328
Duodenal switch	26	111
Sleeve gastrectomy	15	86
Bilopancreatic diversion	70	65
Vertical-banded gastroplasty	28	16
Revision operations	49	53
Intragastric balloons	75	110
Intragastric stimulators	5	13
Total	2,287	4,341

Table 2: Number of each bariatric surgery procedure performed in 2004 and 2005.

The greatest growth in operations is in sleeve gastrectomies, which are set to increase by almost 475% this year. This probably reflects both the growing confidence of UK surgeons to operate on patients with higher BMIs and also the change in thinking in the surgical community to do a simpler operation in these patients and then consider a more complex procedure 18 months to 2 years later when the patient is much fitter to undergo more complex surgery.

Gastric banding has increased by over 100%, with Roux-en-Y gastric bypasses increased by around 70%. Vertical banded gastroplasty is considered an outdated procedure, having been replaced largely by gastric banding. Bilopancreatic diversions, although offering a high degree of weight loss are associated with significant side effects and have been replaced by the modified version, the duodenal switch.

The newer procedures such as intragastric balloons and intragastric stimulators are still in the development phase in this country. They are generally being offered to patients with lower BMIs (e.g. a patient with a BMI of 30-35 who has co-morbidities and does not meet the NICE criteria for surgery) or those at the other end of the spectrum where the goal is to reduce weight and increase the fitness of the patient for major surgery.

Most surgeons who start a bariatric practice start with gastric bands, a relatively simple operation to perform with a low risk of mortality. In some countries, such as Australia, gastric bands are considered the first line surgical treatment for all morbidly

obese patients and very few have gastric bypasses or other procedures. Conversely, the USA bariatric surgery market has developed around gastric bypasses. UK surgeons tend to favour gastric bypasses for patients with BMIs over 50 kg/m², or those with significant co-morbidities (hypertension, diabetes, sleep apnoea) because the resolution of these is more assured², but there patient choice is still a major factor.

NHS or private surgery?

In 2002 the government's National Institute for Clinical Excellence (NICE) produced technical guidance on surgery for morbid obesity and recommended it for patients with BMIs over 40kg/m² or those with BMIs over 35 kg/m² who had co-morbidities. However, unlike most of the guidelines that NICE publishes, no budget was attached to ensure its implementation. Consequently, the implementation has been very haphazard and in some areas, Primary Care Trusts (PCTs) refuse to fund any surgery, in others a budget is allocated for a certain number of cases per year and many, the surgeon applies for funding on an individual named-patient basis. In their research in January 2005, Dr Foster found that 19% of PCTs were not providing any funding for surgery at all.³ Overall 54% of operations performed in 2004 were funded by the NHS. This is set to decrease slightly this year to 46%.

Surgery privately is expensive, with gastric banding costing on average £7,000 and a gastric bypass £10–15,000. None of the mainstream UK private health insurance companies will fund it. However, after many years of suffering people desperately seeking treatment are forced to take on loans or opt to travel to Belgium or France where surgery is offered more cheaply.

Region	NHS 2004	NHS 2005
East Anglia	17%	15%
East Midlands	68%	65%
London & SE	52%	57%
NE and Yorkshire	82%	48%
NW and Cumbria	31%	30%
Southern England	73%	66%
South West	52%	44%
West Midlands	39%	31%
Scotland	91%	88%
Wales	61%	66%
Northern Ireland	-	-

Table 3: Percentage of total operations in each region of the UK that were performed privately in 2004 and 2005.

However this is a market that private hospitals and surgical manufacturers are chasing heavily – at a rough estimate the market is worth £25-30,000,000 this year and is likely to continue to grow at its current rate over the next few years. And with gastric bands costing anywhere from £700-1200 plus the use of disposable equipment during laparoscopic surgery, there is a lot to be gained by manufacturers investing in expanding the market.

² Buchwald JH et al. Bariatric Surgery: A systematic review and meta-analysis. *JAMA* 2004(292)14:1724-37

³ Dr Foster. Primary Care Management of Adult Obesity. January 2005. www.drfooster.co.uk/cms/files/obesity.pdf

Surgical approach

Finally, our survey looked at whether operations are performed laparoscopically (keyhole surgery) or open. Whilst the benefits to the patient of having laparoscopic surgery are well known (less scarring, faster healing time) operating this way takes additional surgical skill and longer time in the operating theatre. 77% of the surgical procedures (excluding balloons and intragastric stimulator implants) performed in 2004 were done laparoscopically. This is set to increase to 87% this year.

Glossary of terms and explanation of surgical procedures:

Morbid obesity and surgery - obesity is defined by the person's body mass index (BMI) and is a computation of both weight and height. A BMI of over 40kg/m² is indicative of morbid obesity, meaning the person will be starting to suffer detrimental effects from their obesity and has an increased risk of dying, or developing other diseases such as diabetes, heart disease and cancer.

BMI less than 18 kg/m ²	Underweight
BMI 18 – 25 kg.m ²	Normal
BMI 25 – 30 kg/m ²	Overweight
BMI 30 – 35 kg/m ²	Obese
BMI 35 – 40 kg/m ²	Severely obese
BMI over 40 kg/m ²	Morbidly obese

The size of the problem - In the UK NICE estimated in 2002 that approximately 1,200,000 people were morbidly obese and this would increase at a rate of 5% per annum. It is well accepted in the medical profession that once obesity has reached this level, it is very rare to lose sufficient weight by diet, exercise or drug therapy to improve health long term, and surgery is the only proven treatment for this group. If only 2% of the 2005 eligible population had surgery, over 27,783 operations would need to be performed, hugely in excess of the number being performed today. It is also considered to be one of the most cost effective of all treatments available on the NHS, reducing hugely the cost of treating the illnesses that people suffer as a result of untreated morbid obesity. Where the NICE guidance got their calculations wrong was in predicting that the surgical capacity would develop much more slowly than it has. This coupled with media coverage of the success of this treatment has consequently created pressure on the NHS to provide this service.

Who should have surgery - In 2002, the NICE Guidelines⁴ provided criteria for patient selection for obesity surgery being performed on the NHS. These criteria are in line with those that exist internationally.

- BMI over 40 kg/m², or BMI over 35kg/m² and patient also has an obesity-related disease (e.g. type 2 diabetes, hypertension, hyperlipidaemia or sleep apnoea)
- Aged 18 or over
- The patient has tried other weight loss treatments without permanent success
- There is no specific metabolic or psychological reason for the obesity
- The patient has sufficient understanding of the procedure and the changes it will produce
- The patient is strongly motivated to undergo the procedure and lifestyle changes it will entail

⁴ NICE Technology Appraisal No 46. Guidance on the use of surgery to aid weight reduction for people with morbid obesity. July 2002.

NICE do not make any specific recommendations for one type of surgery over another. To be able to implement these guidelines, surgery centres need to have the resources of a multi-disciplinary team, usually including a physician or endocrinologist and a dietitian, and sometimes also a psychologist. The NICE guidelines are currently being reviewed and updated.

Goal of surgery - The measure of effectiveness of surgery that is most commonly quoted is 'Percentage excess weight loss' which is the difference between the pre-surgery weight and the ideal body weight for that person. However the main aim of surgery is to get the person's BMI down to at least below 34kg/m² where their risk of developing complications as a result of their obesity, is much reduced.

Surgical procedures - (for more detailed explanation of each procedure, please look at the website – www.bospa.org)

- **Gastric band** – an elastomer ring is placed around the top of the stomach creating a small pouch which holds a small amount of food which passes slowly through the restriction created by the band into the rest of the stomach. The band has an inner tube and its restrictive effects can be adjusted by increasing or removing the amount of fluid in the inner tube of the band. This is the least invasive and safest of the operations and works purely by restricting food intake. Studies show an average excess weight loss of between 40-60%.
- **Gastric bypass** – the Roux-en-Y gastric bypass operation entails creating a small pouch at the top of the stomach with staples and the first 100-150cm of small intestine are then bypassed. The stomach contents pass straight from the pouch into the lower section of the small intestine so the effect of the operation is both restricting the food intake and reducing the absorption of calories from food that is eaten. The risk of dying from the operation is quoted at 0.5-1% and the reported excess weight loss is around 60-70%.
- **Duodenal switch** – a more complex operation where the stomach is reduced in size vertically and the intestinal fluids and enzymes produced by the pancreas and liver are channelled back into the small intestine near its end to increase the degree of malabsorption. Excess weight loss is around 70-90%. This operation is associated with a mortality of 1-1.5% and a higher incidence of side effects with the altered digestive pathway, but the patient will be able to eat a more normal and varied diet afterwards.
- **Sleeve gastrectomy** – a relatively simple procedure where the stomach is stapled vertically to create a small stomach pouch about 1/4 of the original size of the stomach. Tends to be used in patients with BMIs over 60kg/m² who are not fit enough to undergo a longer operation. Works by restriction only and average excess weight loss is 30-50%. Most patients offered a sleeve gastrectomy will go on to have a bypass or duodenal switch at a later date.
- **Bilopancreatic diversion** – stomach is bypassed but leaving a greater gastric pouch so patient able to eat larger quantities. Reconfiguration of intestines ensures a high degree of malabsorption. Similar in weight reduction to duodenal switch but lost its popularity due to high degree of unpleasant side effects and risks of developing internal ulcers.
- **Vertical banded gastroplasty** – before the development of the modern gastric bands, this restrictive operation was known as 'stomach stapling'. A reduced stomach pouch was created by dividing the stomach vertically with staples for about 2/3 of its length, at the bottom of which was inserted a fixed diameter band. The main problem associated with this operation, staple line

rupture has been eliminated with the gastric band and this operation is increasingly redundant.

- **Intragastric balloon** – a saline filled balloon is placed by endoscope into the stomach where it reduces the person's eating capacity. Can only stay in place for 6 months as deterioration of balloon by stomach acid may lead to rupture and intestinal blockage. Average excess weight loss is 25-40% and this is therefore more suited to those who need shorter term treatment (less weight to lose) or to improve the health of a high BMI person prior to more complex surgery.
- **Intragastric stimulation** – electrodes embedded in the stomach wall are connected to a stimulation device that sends out electrical impulses to tell the appetite centres in the brain that the person is not hungry, reducing their desire to eat. Each unit is individually programmed. This is the newest procedure available and results from large scale studies are not yet available although excess weight loss is thought to be in the order of 10-30%.

BOSPA (British Obesity Surgery Patient Association) is a patient charity dedicated to empowering patients about obesity surgery:

- With information about what obesity surgery involves so patients can be knowledgeable about whether obesity surgery, or which operation, is right for them.
- With access to surgery services through locating an experienced surgeon. BOSPA has a strong membership amongst health professionals and works closely with hospitals, health management organisations and political groups.
- With education about how to achieve your desired result from surgery - setting realistic goals for weight loss and health improvement, preparation for surgery, nutrition, exercise and how to recognise complications.
- With support from other patients. BOSPA co-ordinates a growing network of local support groups and also provides telephone and email support to individuals who can't access a local group.

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