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England

Protecting and improving the nation's health

Reviewing the evidence for restricting elective surgery for obese patients

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Elective Care – summary of some actions CCGs can take

Elective Care Good Practice

As part of the wider programme to secure Referral to Treatment (RTT) delivery against the 18week waiting time standard, this guide sets out a checklist that commissioners can use with providers to ensure existing best practice is in place.

These high-impact interventions particularly focus on areas that impact on demand management. These are supported by existing resources, including case studies, protocols and toolkits.

- 1 Personalised holistic risk assessment and (signposting to) provision of fitness improvement before surgery**

PHE position

We have not reviewed the literature on this issue.

Our position, currently, is that any consideration should be based on patient consultation and that approaches be made available as in line with NICE guidance.

RCS Survey of BMI related access policies

1. Results of the Royal College of Surgeons (2016) survey of BMI related access policies are shown below. The RCS distinguishes mandatory and voluntary weight loss pathways. The RCS supports voluntary but not mandatory weight loss pathways.

Applicability	Mandatory/Voluntary	CCGs	Notes
Any non-urgent surgery	Mandatory	5 CCGs	Luton CCG: BMI < 30kg/m ² ; East & North Hertfordshire: BMI < 30kg/m ² or 10% weight loss where 30 cannot be achieved; Herts Valleys CCG: 10% weight loss where BMI > 30kg/m ² and patient has metabolic syndrome. North East Essex CCG: BMI < 35. Vale of York CCG: BMI < 30 or 10% weight loss ⁵ attempted for maximum 12 months.
	Voluntary	5 CCGs	Weight management offered or advised.
Hip & knee replacement	Mandatory	44 CCGs	8 require BMI < 30kg/m ² . 21 require BMI < 35kg/m ² . 15 require BMI < 40kg/m ² .
	Voluntary	33 CCGs	Weight management offered or advised.
Hernia	Mandatory	3 CCGs	2 x BMI < 30. 1 x 'weight reduction must be tried'
	Voluntary	2 CCGs	Weight management offered or advised.
Tonsillectomy for sleep apnoea	Mandatory	2 CCGs	Dorset: BMI < 30. Bath and N&E Somerset: < 30 or weight management programme undertaken prior to surgery.
	Voluntary	0 CCGs	n/a
Snoring	Mandatory	7 CCGs	Snoring surgery not normally funded outside of panel request. Where funded, BMI criteria apply: 3 x BMI < 35 or weight management programme; 1 x BMI < 30; 1 x BMI < 27; 1 X 'weight will be considered on referral'.
	Voluntary	0 CCGs	n/a
Varicose veins	Mandatory	6 CCGs	1 X BMI < 27 for 6 months; 2 X 'normal BMI' or 1 year evidence of weight loss programme; 1 X BMI < 30 for 3 months; 2 X weight loss in 'high BMI' ('high' undefined)
	Voluntary	5 CCGs	'Patients with raised BMI encouraged to follow weight loss'.

SOURCE: [Smokers and overweight patients: soft targets for NHS savings?](#) Royal College of Surgeons Policy Unit, April 2016.

Herts Valleys CCG BMI Threshold and Smokefree Policy for all elective procedures

- Patients with a **BMI >40**, or those with **metabolic syndrome*** and a **BMI >30**, will be offered surgery **if they lose at least 10% of their weight over 6-9 months** or loses sufficient weight to meet criteria 1.2.
- Patients with a BMI between 35-40, **without metabolic syndrome**, should be offered **advice** to lose weight before surgery, and a brief intervention to promote long term behavioural change.
- In exceptional circumstances the above criteria will be waived
- **Purpose** : Improve **identification** of patients, provide a **'health trigger'** , contribute to wider local health improvement work and **reduce the impact of obesity on osteoarthritis and reduce risks** of routine surgery, in particular the risks of major complications and to **avoid or delay major surgery** where conservative measures could provide similar symptom
- Literature review concluded **appear to be significantly associated with worse outcomes from surgery and higher complication rates and death**
- Obesity has an effect on the safety of anaesthesia (RCA 2011 study found obese patients 2x likely to develop serious airway problems during general anaesthetic and severely obese patients 4x

West Yorkshire literature review concluded

- Evidence of **poorer surgical outcomes** for patients who are overweight or obese is **much more mixed than smoking**
- Weak evidence that a six month delay is an **effective intervention** to lose sufficient weight to change outcome of surgery or sustain weight loss
- In general **the evidence is complex and conflicting**, and **dependent on the type of procedure**.
- While there is **some consensus** that obesity is likely to make **anaesthesia and surgery more technically challenging**, there is also evidence that the **overall outcome of most elective surgical procedures is equally good** in obese and non-obese patients
- Not clear requiring weight loss will make a real difference to the outcome of elective surgery - dependent on the patient's starting BMI, the specific procedure and on other predictive factors such as age and comorbidities.
- The lower the threshold for restricting elective surgery – for example by moving from 35 to 30 – the less clear the situation becomes.

Acknowledgement:: *Smoking and BMI commissioning thresholds for elective surgery*

Evidence and options Clare Offer, December 2016

Surgical outcomes literature (West Yorks)

- Overall, there is good evidence that patients who are obese are at **greater risk of surgical site infections** (SSI) during surgery.
- There is also evidence that obese patients are **more difficult to anaesthetise and may be at increased risk of airway complications as a result.**
- Studies of laparoscopic cholecystectomy (Koulas et al, 2016; Lowndes et al, 2016; Houtouras et al, 2016) have reported a trend towards increased operating times in patients with increased BMI.
- A number of large cohort studies, covering **various types of surgery**, have demonstrated **no difference in the rate of major 30 day complications or post-operative mortality**
- In **orthopaedic surgery**, a review of four cohort found the health gain for patients with a high BMI was **equal** to that for normal weight patients.
- Some large cohort studies describe an '**obesity paradox**', where moderate degrees of overweight and obesity actually appear to confer slightly lower rates of major complications and mortality (Mullen et al, 2009).
- Although NICE guidelines recommend weight loss as a core initial treatment for **osteoarthritis**, they also explicitly state that BMI should not be a barrier to referral for joint replacement surgery (NICE, CG177, 2014).

Weight loss literature (West Yorks)

- There is currently **no good evidence** to demonstrate that effective interventions exist that will **help patients lose enough weight in six months to alter their surgical outcomes.**
- The evidence is **unclear on exactly how much** weight patients need to lose to make a difference to surgical outcomes
- Some evidence for bariatric surgery but not clear translatable to general population
- NICE PH 53 emphasises the importance of making **gradual, long term changes** to diet and exercise in order to lose weight sustainably and suggests advises those completing lifestyle programme will average losing **around 3% of their body weight over a 6 to 9 month period** (although this varies greatly).
- PHE Menu of Preventative Interventions states a patient persisting with a tier 2 weight management programme for **12 months might reduce their body mass index by 2.46 kg/m².**
- More rapid weight loss is recognised to be less likely to lead to sustainable lifestyle changes, and in some conditions is actually contraindicated eg **rapid weight loss in obese patients is a recognised risk factor for the development of gallstones** (Erlinger, 2000).
- Osteoarthritis, hernia, gallstones, degenerative spinal disease **do have a significant relationship with obesity but losing weight will not prevent the need for surgery**

Rationale for wider health gain at a 'teachable moment'

- BMI is influential in a patient's future health
- There is an independent relationship between BMI and future incidence rates of related disease.
- Gains in reducing future health demand by supporting better population health should directly affect the NHS resilience
- The period prior to potential non-urgent elective surgery is a legitimate trigger for engagement and concerted support to health improving behaviours
- Obesity is amongst of the top three risk factors for avoidable mortality in the over 75s, along with smoking and hypertension.
- For some surgery, obesity is also be influential on surgical outcomes and is influential on certain complications to an appreciable degree.**

From Devon paper on pre-operative health improvement

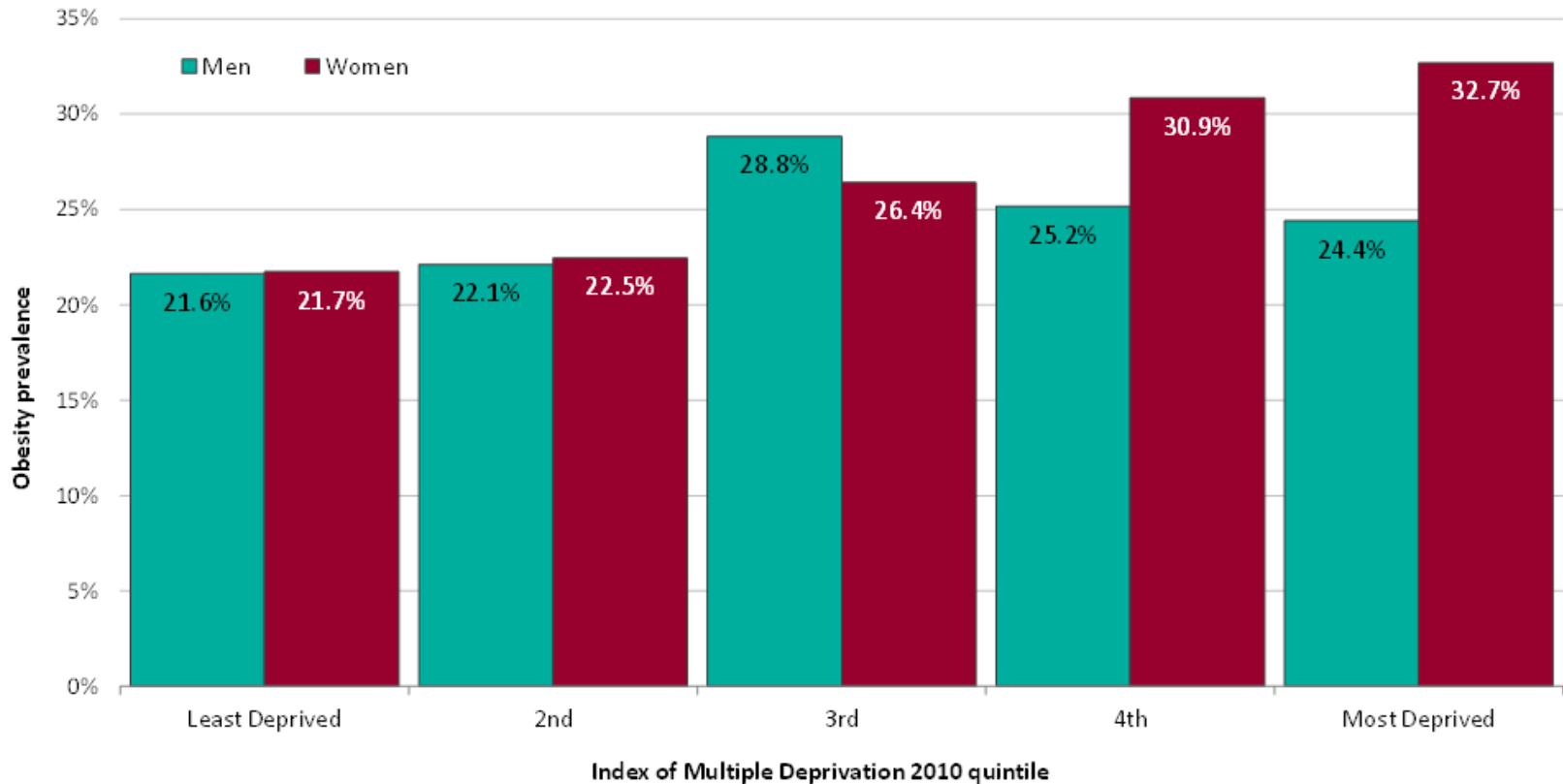
Effects of a 10% reduction in weight by obese patients.

Mortality	20-25% fall in total mortality 30-40% fall in diabetes related deaths 40-50% all in obesity related cancer deaths
Blood Pressure	Blood Pressure Fall of approximately 10mmHg in both systolic and diastolic values
Diabetes	Reduces risk of developing diabetes by >50% Fall of 30-50% in fasting glucose Fall of 15% in HbA1c
Lipids	Lipids Fall of 10% in total cholesterol Fall of 15% in LDL Fall of 30% in triglycerides Increase of 8% in HDL

Source: Clinical Resource Efficiency Support Team. Guidelines for the management of obesity in secondary care. June 2005.
http://www.spitalmures.ro/_files/protocoale_terapeutice/gastro/obesity-guidelines-report.pdf

Potential to widen health inequalities

Health Survey for England 2014- Adult obesity prevalence by deprivation (Adult (aged 16+) obesity: BMI \geq 30kg/m²)



Impact of Adverse Childhood Experiences (ACEs) - Vincent J. Felitti, 1998

Mid 1980s Felitti in San Diego discovered that patients successfully losing weight in the Weight Program were the most likely to drop out and found ***overeating and obesity were often being used unconsciously as protective solutions to unrecognized problems dating back to childhood... Counterintuitively, obesity provided hidden benefits: it often was sexually, physically, or emotionally protective.***

Led to detailed study of over 17,000 middle-class American adults of diverse ethnicity exploring Adverse Childhood Experiences found 4 or more ACES increases risk of a number of diseases and conditions ischemic heart disease (220%, 240% risk of stroke), Liver disease (240% risk of hepatitis), Cancer (190%), Diabetes (160%) and Suicidality (1220%).

2002 Study of 13,177 member of Californian health maintenance organised aged 19-92 found **obesity risk increased with number and severity of each type of abuse** and that physical and verbal abuse were most strongly associated with body weight and obesity.

2007 Study of 11,000 Californian women found those who had been **abused as children were 27% more likely to have been obese.**

To sum up

- NHSE recommend personalised risk assessment and signposting to fitness improvement before elective surgery
- PHE have not done a review of the evidence
- Policies requiring mandatory weight loss are in place in a few areas
- Evidence for improved surgical outcomes is mixed
- Evidence for achieving 10% in 6 months is unclear
- 10% weight loss does have health impact and reducing obesity prevalence will benefit NHS
- Mandatory policies have the potential to widen health inequalities
- Impact of Adverse Childhood Experiences on ability to lose weight
- What's needed is whole systems approach.