

BOMSS Professional Standards and Commissioning Guidance 2012 (Updated May 2019)

Summary

The BOMSS Service Standards and Commissioning Guidance (*'Providing Bariatric Surgery – BOMSS Standards for Clinical Services & Guidance on Commissioning'*) and the accompanying BOMSS Professional Standards Document were published in 2012. They are comprehensive documents setting out a consensus view of what at that time constituted the principles that underpin safe, high quality bariatric surgical practice.

It was the stated intention of the 2012 guidance that they should be reviewed and, if necessary, updated on a regular basis to ensure that they remained relevant to modern practice. This publication is the first such update and addresses three areas; (i) the composition of the bariatric MDT; (ii) the mandatory requirement for on-site level 2/3 critical care facilities and (iii) surgeon and unit volume. Revised advice on the requirement for on-site critical care facilities has been issued after major input from SOBA (the Society for Obesity and Bariatric Anaesthesia).

The principal changes recommended are:

- (i) That the bariatric MDT should *as a minimum* comprise bariatric surgeon(s), specialist dietician, bariatric specialist nurse and an experienced bariatric psychologist. It is strongly recommended that either a bariatric physician and/or a bariatric anaesthetist (acting as a peri-operative physician) should be present at bariatric MDT meetings.
- (ii) That the majority of patients (including those undergoing malabsorptive and revisional surgery) can be safely nursed and closely observed/monitored with zero or single organ support in a surgical 'step down' unit for the first 24 hours. It is no longer considered *mandatory* for level 2/3 critical care facilities to be provided on-site, provided that (a) 24 hour consultant surgeon and anaesthetic cover is provided to support ward staff and junior doctors; (b) patients are accurately risk-stratified pre-operatively to identify those who might require elective admission to a level 2/3 critical care bed and (c) that robust arrangements are in place at every unit undertaking bariatric surgery for the safe transfer of patients requiring additional monitoring/support to a level 2 (or if appropriate level 3) critical care unit.
- (iii) Falling volumes of NHS-commissioned bariatric surgery in recent years have made it difficult for many units to meet our 2012 recommendations regarding surgeon and unit volume. We recognise that there is some evidence that supports better outcomes in high volume units, but we feel that a unit can deliver a safe service provided that the following criteria are met (a) an established MDT structure is in place as set out in (i) above; (b) the hospital engages at least two bariatric surgeons performing a minimum of 30 major procedures pa each (combined NHS and private experience); and (c) the unit (whether private or NHS) carries out a *minimum* of 30 major laparoscopic bariatric procedures per year (excluding gastric balloons) and ideally performs upwards of 100 major procedures pa . BOMSS strongly supports an expansion of bariatric surgery capacity in the UK and we wish to re-emphasise previous advice that newly established units and surgeons should be supported within a network of more experienced bariatric MDTs and should aim to achieve the minimum unit volume of 30 cases pa within 3 years of service commencement.

Composition of the Core Bariatric MDT

The critical importance of pre-operative screening for significant psychological/mental health issues and eating disorders, together with widespread recognition of the benefits of pre and post-operative psychology support has been one of the most important changes in UK bariatric surgical practice in the past decade. Our original advice did not include a bariatric psychologist as a mandatory element of the bariatric core MDT. This omission has now been rectified, although we recognise that as psychology services are often delivered separately to surgical clinics, the psychologist need not be physically present at MDT meetings.

Outdated commissioning guidance talks of the need for an endocrinologist or 'bariatric physician' to be a mandatory part of the core bariatric surgery MDT. It can be impracticable for many units to supply a physician to be in attendance at bariatric MDTs, as their expertise might only be required for a minority of patients discussed. An acceptable alternative solution is to include a bariatric anaesthetist within the core MDT and we strongly endorse this suggestion, provided that the MDT also has links to specialist physicians experienced in the management of more complex complications of obesity (metabolic, respiratory, cardiac).

The importance of pre-operative anaesthetic input was recognised in both IHAS¹ and NCEPOD² reports. Pre-operative assessment of the likely post-operative care requirements is best achieved with a structured assessment by an experienced bariatric anaesthetist working within the MDT and ideally reviewing patients face to face at the time of first MDT assessment.

Recommendation:

A senior psychologist and a bariatric anaesthetist (and/or a bariatric physician) should form part of the core bariatric MDT and should be involved in the pre-operative assessment of all patients undergoing bariatric surgery.

¹ IHAS. Clinical Guidelines for the Establishment of a Bariatric Surgical Service 2012

² NCEPOD. Too Lean a Service? 2012 ISBN 978-0-9560882-8-4

Mandatory Requirement for On-Site Level 2/3 Critical Care Facilities:

The 2012 BOMSS Professional Standards and Commissioning guidance reflected UK bariatric experience over the preceding decade, at a time when bariatric surgery provision in the UK was less well-developed and at many centres in its infancy. At that time BOMSS recommended mandatory onsite level 2 critical care admission after routine bariatric surgery (and level 3 critical care backup for more complex surgeries).

However, the current low morbidity and mortality of modern UK bariatric surgical practice (with 30-day mortality rates less than those reported after laparoscopic cholecystectomy, and major orthopaedic procedures)³ challenges the historical presumption that routine post-operative critical care admission should be mandatory for the majority of patients. Indeed, patients undergoing other perceived higher risk procedures such as major joint replacement that are known to have critical care usage that is many times higher than that after bariatric surgery^{4 5 6} do not require mandatory admission for level 2/3 care.

Background

Unfortunately, there is currently a lack of good quality UK data relating to the patterns and indications for critical care use after bariatric surgery, both for elective and emergency cases. To help address this deficit the NBSR Data collection fields are to be altered in 2019 to capture as many events of critical care usage as possible. This will provide a UK-specific picture to inform future guidance and to ensure that any changes to BOMSS recommendations surrounding critical care requirements are supported by high quality prospectively collected data.

There are a number of historic series from the USA; however surgical/anaesthetic practice and post-operative care in the USA is quite different that in the UK, and the relevance of this US data to UK practice is thereby limited. The published data most relevant to UK practice comes from Australia and it is from these publications that most conclusions contained within this revised guidance are drawn.⁷

³ NBSR Second Registry Report 2014, Dendrite Clinical Systems Ltd

⁴ Memtsoudis SG, Sun X, Chiu YL, et al. Utilization of critical care services among patients undergoing total hip and knee arthroplasty: epidemiology and risk factors. *Anesthesiology* 2012;117:107–116

⁵ Kamath AF, McAfliffe CL, Baldwin KD et al. Unplanned admission to the intensive care unit after total hip arthroplasty. *J Arthroplasty*.2012;27(6);1027-32

⁶ Courtney PM, Melnic CM, Gutsche J et al. Which patients need critical care intervention after total joint arthroplasty. *Bone Joint J*. 2015;97-B;1512-18

⁷ Incidence and risk factors for intensive care unit admission after bariatric surgery: a multicentre population-based cohort study. *Morgan DRJ British Journal of Anaesthesia* 2015; 115 (6): 873–82

Planned use of critical care

An expected and planned need for elective post-op critical care by definition mandates the availability of an on-site critical care bed, but this seems to be required in only 1-2% of patients identified at pre-op assessment as being at higher risk.

However, if a patient is considered higher risk, and to have any real likelihood of needing level 2/3 care as part of their recovery, this patient should only be offered surgery at a facility with this resource available on-site. To operate and review the need, then to transfer after surgery, would not be deemed acceptable.

Historically, screening of 'high risk' patients that may require pre-surgery optimisation or elective post-op critical care support was based on either high BMI or total body weight. However, an effective modern MDT assessment with informed anaesthetic input produces an accurate ASA physical status based upon multiple parameters including sleep status, cardio-respiratory disease, pre-operative blood tests and type of surgery planned. This allows a more bespoke approach to screening for higher peri-operative risk.

Unplanned use of critical care

An unplanned post-operative admission to critical care occurs when the decision to admit the patient is made after the induction of anaesthesia.

There are two phases for unpredicted critical care requirement after elective bariatric surgery. The *early phase* admissions (first 48 hours) mostly comprises admissions for anaesthetic issues such as ventilatory support (undiagnosed /untreated sleep disorders or aspiration pneumonia), anaphylaxis or drug complications. Like other early complications such as surgical bleeding, cardiac issues and neurological injury, none of these unplanned admissions are generally predictable.

The *later phase* of unplanned critical care admissions (after 48 hours, but mostly after 72 hours) are due to surgical complications⁷, typically sepsis and peritonitis following anastomotic leakage and/or unrecognised iatrogenic enterotomy. Admission can also happen up to 30 days after surgery following other rare events (e.g. myocardial infarction and pulmonary embolism).

Given the rare but unpredictable nature of anaesthetic complications requiring critical care admission in the first 48 hrs after any surgery (not just bariatric surgery), any site providing surgical services should have a designated area that can be temporarily raised to a Level 2 critical care setting. The anaesthetic team should be supported by nursing staff in delivering this care until expatriation or recovery occurs. This area may be an anaesthetic room or recovery ward area. During a critical event leading to intubation then this area should serve as a stabilisation area prior to expatriation to a formal level 3 unit. As per our previous guidance, the ability to measure blood gases and other routine blood tests on-site should be mandatory.

It would be advisable for nursing and anaesthetic staff to regularly maintain the equipment in the designated 'step-up' area and to practice the escalation process and familiarise themselves with the process by using an escalation protocol that defines roles and responsibilities.

Service Level Agreements (SLA) for critical care provision

In centres without recognised on-site level 2/3 care, a published SLA must exist that facilitates seamless transfer of patients requiring such care escalation. This SLA should be a formal agreement ratified by medical directors, executives, heads of nursing and critical care of both the sending and receiving centres, as well as the local ambulance or transfer services. Ideally, the receiving centre should have on-site bariatric surgical expertise. Capacity and availability should be as per ICS standards across the UK.

As part of the SLA, the roles and responsibilities of clinical medical/nursing and managerial staff should be defined as action cards and agreed in advance. It is recommended that the escalation scenario is regularly practiced as a dry run simulation following the process through to successful repatriation at the off-site level 2/3 critical care facility.

As part of the simulation and SLA, the equipment used for transfer of post-surgical bariatric patients should be checked to be appropriately weight rated and deemed safe. Local ambulance or transfer services should be part of the SLA and their ability and equipment limits should be documented specifically noting maximum weight and girth limits for all parts of the repatriation pathway. The transfer service should be advised of the 'bariatric nature' of the transfer from the outset if activated, to prevent delays.

NHS Junior Doctors/ Resident Medical Officers (RMO)

Some critical care/anaesthesia experience is recommended, but as a minimum, patients should have access to care by NHS Junior Doctors and RMOs who are ALS trained and supported by the availability of 24/7 consultant bariatric surgical and anaesthetic cover. Where junior medical/RMO cover is not available to this standard, it is the front-line responsibility of the consultant bariatric surgeon and anaesthetist, to ensure that they are available to deal with any post-operative ward problems.

Anaesthetic Equipment Requirements

Although bariatric patients have only a modestly increased incidence of difficult airways, when this occurs arterial desaturation can occur very quickly, thus the anaesthesia team should be provided with a range of difficult airway equipment in line with the Difficult Airway Society (DAS) difficult intubation trolley guidelines.

Many units use video-laryngoscopes as a first line devices in bariatric cases. The UK national audit projects (NAP4 and NAP5) showed obese patients to be much more prone to both airway incidents and awareness under anaesthesia. Given the challenges and wide variety of bariatric patients, from young, strong high BMI

individuals to older sarcopenic patients with multiple comorbidities, EEG/BIS/Entropy monitoring should be available for all general anaesthetics. If 'total intravenous anaesthetics' are planned, then this monitoring equipment is mandated.

Additionally, early airway recovery and good respiratory function is dependent upon reversal of any neuromuscular blocking drugs and thus the use of NMJ monitoring and availability of reversal agents is considered a basic standard of care⁸

Patients with Sleep Apnoea:

Treated Sleep Apnoea:

A common reason for proposed elective admission to level 2 care is the lack of familiarity ward nurses have with CPAP devices used by patients with obstructive sleep apnoea. Given patients use these devices at home unsupervised, there is no strong logic to this request for level 2 critical care input, provided the machine is seen to be functioning prior to surgery, and is brought into hospital by the patient. If surgery is to be undertaken in a unit without on-site level 2 critical care, compliance with home CPAP or NIV should be checked pre-operatively. If poor, patients should not be offered anaesthesia and surgery until good compliance has been demonstrated.

Untreated Sleep Apnoea:

Patients with severe sleep disordered breathing *who are untreated or are unable to tolerate NIV/CPAP treatment* should be electively admitted to a level 2/3 bed post-operatively because of the higher risk of ventilatory support being required.

The importance of an appropriate pre-operative assessment by a clinician able to recognise sleep disordered breathing is underlined. Screening tools such as the STOP-bang questionnaire (with or without bicarbonate levels STOP BANG Bic), if properly applied, can effectively rule out significant sleep conditions – but only reliably in a small minority with very low scores, and many obese patients will have equivocal results which makes these tools unhelpful in isolation from experienced clinician review.

Post-op Analgesia in patients with Sleep Apnoea:

Opiates should be used judiciously in patients with sleep apnoea because of the potential for respiratory depression/arrest. Repetitive small doses titrated against the patient's level of pain should be given in preference to larger single boluses.

⁸ Recommendations for standards of monitoring during anaesthesia and recovery 2015. AAGBI Dec 2015
https://www.aagbi.org/sites/default/files/Standards_of_monitoring_2015_0.pdf

Recommendation:

The majority of patients (including those undergoing malabsorptive and revisional surgery) can be safely nursed and closely observed/monitored with either zero or single organ support in a level 1 surgical 'step down' unit for the first 24 hours.

It is no longer considered *mandatory* for level 2/3 critical care facilities to be provided on-site at centres carrying out bariatric surgery, provided that:

- (a) 24-hour consultant surgeon and anaesthetic cover is provided to support ward staff and junior doctors;
- (b) patients are accurately risk-stratified pre-operatively to identify those who might require elective admission to a level 2/3 critical care bed. This would include all patients with severe and *untreated* sleep apnoea (eg inability to tolerate CPAP);
- (c) that robust arrangements are in place at every unit undertaking bariatric surgery for the safe transfer of patients requiring additional monitoring/support to a level 2 (or if appropriate level 3) critical care unit;
- (d) all units carrying out elective major surgery (not just bariatric surgery) should have a designated area that can be temporarily raised to a Level 2 critical care setting to enable stabilisation and subsequent transfer in the unlikely event that a patient develops an early complication (usually anaesthetic-related) that requires critical care admission.

Surgeon and Unit Volume:

BOMSS strongly supports an expansion of bariatric surgical capacity in the UK and in order to facilitate this we have revised our previous recommendations on safe surgeon and unit volume given the current low morbidity and mortality of modern UK bariatric surgical practice highlighted by the second NBSR report, an audit that includes many units performing less cases than recommended in our original 2012 guidance.⁹ Furthermore, falling volumes of NHS-commissioned bariatric surgery in recent years have made it increasingly difficult for many established units to meet 2012 criteria for surgeon and unit volume and for new centres to become established.

As pointed out in the 2012 Professional Standards Document, there are many highly experienced surgeons whose individual volume may appear lower than our original recommendations, yet who are still making a valuable safe contribution as their practice might be skewed towards a higher proportion of complex revisional cases or to training and mentoring of other surgeons.

We recognise that there is some evidence that supports better outcomes in higher volume units and provided that there is an established MDT structure in place comprising a minimum of two bariatric surgeons, we wish to change the emphasis of our recommendation to focus on both *unit* and *surgeon* volume.

Recommendation:

We recommend that each established unit (whether private or NHS) should carry out a minimum of 30 major bariatric procedures per year (excluding gastric balloons) and should engage at least two trained bariatric surgeons who *each* have a minimum annual caseload (ie NHS and private cases combined) of 30 major bariatric procedures.

We wish to re-emphasise previous advice that newly established units and surgeons should be supported by a more experienced bariatric MDT within a network for the first three years, and should aim to achieve the minimum unit volume of 30 cases pa within 3 years of service commencement.

⁹ NBSR Second Registry Report 2014, Dendrite Clinical Systems Ltd