Obesity in Pregnancy

Classification:	Guideline
Authors Name:	Erum A Khan, Kate Omonua
Authors Job Title:	Consultant O&G, Specialty Doctor in O&G
Authors Division:	Women's and Children's Health
Departments/Group this Document applies to:	Maternity

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Guideline to be followed by (target staff): All staff working in maternity

To be read in conjunction with the following documents:
None

Are there any eCARE implications? No

CQC Fundamental standards:
Regulation 9 – Person centred care
Regulation 10 – Dignity and respect
Regulation 12 – Safe care and treatment
Regulation 13 – Safeguarding service users from abuse and improper treatment
Regulation 14 – Meeting nutritional and hydration needs

Disclaimer –

Since every patient's history is different, and even the most exhaustive sources of information cannot cover every possible eventuality, you should be aware that all information is provided in this document on the basis that the healthcare professionals responsible for patient care will retain full and sole responsibility for decisions relating to patient care; the document is intended to supplement, not substitute for, the expertise and judgment of physicians, pharmacists or other healthcare professionals and should not be taken as an indication of suitability of a particular treatment for a particular individual.

The ultimate responsibility for the use of the guideline, dosage of drugs and correct following of instructions as well as the interpretation of the published material **lies solely with you** as the medical practitioner.

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Guideline Statement

To achieve a good outcome and experience in managing pregnant women/service users with obesity.

Executive Summary

There is substantial evidence that obesity in pregnancy contributes to increased morbidity and mortality for both mother and baby. In 2009, 10% of mothers who had a stillbirth or whose babies died in the neonatal period had a BMI of 35 or more. This is twice the UK prevalence rate (5%) of all deliveries to women/service users with a BMI of 35 or more at any point in pregnancy, published in the CMACE Obesity in Pregnancy report.

The MBRRACE-UK Saving Lives, Improving Mothers' Care report for 2022 is a report that highlights the lessons learned to inform maternity care from the UK and Ireland Confidential Enquiries into Maternal Deaths and Morbidity 2018-20. The report showed that more than a quarter (27%) of the women/service users who died in 2018-2020 were obese (BMI ≥ 30kg/m2). This is a slight increase from the 23% reported previously. Obesity was reported to be a risk factor for cardiovascular disease, venous thrombo-embolism, and hypertensive disease of pregnancy. Over two-thirds (67%) of women/service users who died from cardiac disease and a quarter (25%) who died of hypertensive disorders of pregnancy had a BMI of over 30.

The National Maternity and Perinatal Audit (NMPA) report noted that in 2016/17 for the first time, more than half (50.4%) of women/service users with a recorded BMI at booking were overweight or obese, up from 47.3% in 2015/16 (NMPA Project Team 2019).

Increased rates of obesity related morbidity and mortality are also reflected in increased social and financial costs:

- Obese women/service users spend an average of 4.83 more days in hospital and the increased levels of complications in pregnancy and interventions in labour represent a 5-fold increase in cost of antenatal care (Galtier-Dereure et al, 2000)
- The costs associated with newborns are also increased, as in babies born to obese mothers there is a 3.5-fold increase in admission to Neonatal Intensive Care Unit (NICU) (CEMACE 2009)
- Maternal obesity and diet during pregnancy creates a metabolic environment that affects fetal growth and may result in later development of metabolic syndrome and cardiovascular disease (Simiri and Goulis, 2010)

Definitions

Body Mass Index **(BMI)** is an index of weight-to-height calculated by a woman's weight in kilograms (kg) divided by the square of height in meters (kg/m2). This protocol is divided into 2 sections, clinical issues and manual handling issues.

Obesity is defined as a BMI of ≥ 30m^2

- BMI 30 - 34.9 CLASS 1
- BMI 35 - 39.9 CLASS 2
- BMI >/= 40 CLASS 3

1.0 Roles and Responsibilities:

Obstetricians– decision making, discussion, planning care

Healthy Lifestyle Midwife - Discuss nutrition, movement and other determinants of a healthy lifestyle at the earliest opportunity. Offer practical and tailored information to support manageable lifestyle changes to reduce of health complications, during and after pregnancy

Midwives – Decision making, pre and post birth care

Anaesthetists – Clinical assessment and decision making

Back care team – Assessment and decision making

Dietitians – Dietary advice

2.0 Implementation and dissemination of document

The information within this document will be disseminated throughout the maternity unit by it being made available on the hospital intranet.

3.0 Processes and procedures

3.1 Background and Clinical Issues

- The increasing prevalence of obesity in the United Kingdom has been widely publicized and the risks of maternal death among pregnant obese women/service users has been highlighted by the Saving Lives, improving Mothers' Care (MBRRACE-UK) report.
- Over a quarter (27%) of the women/service users who died in the last triennium were obese (BMI ≥ 30kg/ m^2). (MBRRACE-UK) 2018-2020
- The key to successful maternity care of women/service users with a raised BMI involve:
  - Multidisciplinary team approach
  - Individualized care to include all risk factors

3.2 Complications

Obesity in pregnancy is associated with an increased risk of both fetal and maternal complications. These include:

Maternal risks	Fetal risks
Spontaneous Miscarriage	Congenital anomalies
Recurrent Miscarriage	Prematurity
Pre-eclampsia/ Gestational HTN	Macrosomia
Cardiac disease (MI/Stroke)	Shoulder Dystocia
Gestational Diabetes	Difficulty in intrapartum monitoring
Higher rates of caesarean section	Still birth
Thromboembolism	Neonatal death
Wound infection	Risk of childhood and adult obesity & metabolic disorders
Post Partum Haemorrhage (PPH)	
Low breast feeding rates	
Anaesthetic complications	
Death/ severe morbidity	

3.3 Antenatal Care

3.3.1 Booking Assessment and BMI Recording

- All women/service users booking for maternity care should be advised to have their weight and height measured and their body mass index calculated at the antenatal booking visit.
- Measurements are recorded in the handheld notes and electronic patient information system

3.3.2 Antenatal care for all Women/service users with BMI > 30

The following should be done for all women/service users with a booking BMI ≥ 30 kg/m^2:

- Referral to healthy lifestyle midwife via antenatal booking form.

- Provide all service users with accurate and accessible information about the risks associated with obesity in pregnancy and how they may be minimized. Women/service users should be given the opportunity to discuss this information at each clinical encounter. This can be done by the midwife or doctor and aided by use of the RCOG guideline: Being Overweight During Pregnancy and After Birth (RCOG Leaflet).pdf.

- Discuss healthy eating and exercise during pregnancy and the need to limit weight gain. Anti-obesity or weight loss drugs are not recommended in pregnancy. Dietetic advice can be sought from an appropriately trained professional early in the pregnancy where required, in line with NICE Public Health Guideline 27.

- Advise women/service users to take 5mg folic acid supplementation daily, starting at least one month before conception and continuing during the first trimester of pregnancy.

- Advise women/service users to take Vitamin D supplementation 25mcg (800-1000units) micrograms vitamin D, daily during pregnancy and while breastfeeding.

- Use an appropriate size of cuff for blood pressure measurements taken at the booking visit and all subsequent antenatal consultations. The cuff size used should be documented in the medical records.
- Do a VTE risk assessment using the VTE risk assessment tool on eCare at each encounter. In the presence of 3 risk factors antenatal thromboprophylaxis should be prescribed from 28 weeks and postnatal thromboprophylaxis for 6 weeks would then be required. See trusts guideline on 'Thromboprophylaxis in pregnancy and puerperium.pdf'.

- Referral for screening for gestational diabetes should be done at 24-28 weeks. This is according to NICE or Scottish Intercollegiate Guidelines Network guidelines.

- Document discussion of the possible intrapartum risks and ways to minimize these risks:
  - Difficulties with fetal monitoring and may need fetal scalp electrode
  - Increased incidence of slow progress in labour
  - Increased incidence of shoulder dystocia
  - Increased risk of emergency Caesarean section and that Caesarean may be technically more difficult, with increased risks of operative complications.
  - Less chance of successful VBAC
  - Need to always prioritize the safety of the mother and use a multidisciplinary approach for decision making
  - Increased incidence of primary post-partum hemorrhage

- Serial measurement of symphysis fundal height (SFH) is recommended at each antenatal appointment from 24 weeks of gestation as this improves the prediction of a small-for-gestational-age fetus. This is as recommended by RCOG GTG No. 31.

- For women/service users with obesity in pregnancy, consideration should be given to reweighing women/service users during the third trimester to allow appropriate plans to be made for equipment and personnel required during labour and birth.

- Active management of the third stage should be recommended to reduce the risk of postpartum haemorrhage (PPH).

- There is a lack of definitive data to recommend routine monitoring of post dates pregnancy. However, obese pregnant women/service users should be made aware that they are at increased risk of stillbirth.

- Obesity is associated with low breast-feeding initiation and therefore, women/service users with a booking BMI >30 should receive appropriate specialist advice regarding the benefits of breast feeding, including advice on Colostrum harvesting at 36 weeks gestation.

- Women/service users with BMI 30 kg/m2 or greater are at increased risk of mental health problems and should therefore be screened for these in pregnancy.

- Women/service users undergoing caesarean section who have more than 2 cm subcutaneous fat should have suturing of the subcutaneous tissue space to reduce the risk of wound infection and wound separation.

- Use BMI care pathway plan (Appendix 1) as a guidance to relevant details required to be documented on patients' electronic records (eCare).

3.3.3 Additional Steps for Women/service users with BMI 35 - 39.9 (CLASS 2)

Please follow all steps as for BMI > 30 and these additional steps:

- Refer the patient for consultant-led care after a dating scan and plan for delivery in the hospital. Combined consultant and community midwifery antenatal care may be considered following consultant review provided the appropriate BP cuff is available in the community.

- Women/service users with more than one moderate risk factor (BMI of 35 kg/m^2 or greater, first pregnancy, maternal age of more than 40 years, family history of pre-eclampsia and multiple pregnancy) may benefit from taking 150 mg aspirin daily from 12 weeks of gestation until birth of the baby.

- Women/service users with a BMI greater than 35 kg/m^2 are more likely to have inaccurate SFH measurements so this should not be done. They should be referred for serial assessment of fetal size using ultrasound instead.

- Serial growth scans to be arranged as per local SBL pathway: 'Fetal Growth Assessment.pdf', with estimated fetal weight plotted on growth charts.

- Given the statistically significant increased risk of severe maternal morbidity and mortality, women/service users with BMI >35 should be seen at consultant antenatal clinic at booking and then at 32 and 36 weeks after their respective scans (following SBL pathway scans)

Women/service users with class II obesity and greater have an increased risk of pre-eclampsia compared with those with a normal BMI. Do a risk assessment for pre-eclampsia at the booking appointment and women/service users who develop hypertensive complications should be managed according to the trust's guideline on 'Hypertensive Disorders of Pregnancy .pdf'.

- Re-measure maternal weight in 3rd trimester.

- Some women/service users with a booking BMI less than 40 kg/m2 may also benefit from assessment of moving and handling requirements in the third trimester. This should be decided on an individual basis and documented in notes

3.3.4 Additional steps for women/service users with BMI >/=40 (CLASS 3)

Please follow all steps above for BMI > 30 and >35 and these additional steps:

- All women/service users with BMI >40 and any additional co-morbidity must be referred to maternal medicine clinic.
- BMI >40 scores 2 in VTE assessment
- Consider antenatal thromboprophylaxis in all women/service users with BMI > 40 with one or more additional VTE risk factor.
- Offer Postnatal thromboprophylaxis for a minimum of 10 days regardless of mode of delivery if BMI of 40 or more and no additional VTE risk factors.
- Pregnant women/service users with a booking BMI of 40 kg/m^2 greater should be referred to an obstetric anaesthetist for consideration of antenatal assessment at first antenatal clinic encounter. (See Appendix 3)
- An anaesthetic management plan for labour and birth should be discussed and documented, including difficulties with venous access and regional and general anaesthesia where identified. Multidisciplinary discussion and planning should occur where significant potential difficulties are identified.
- Women/service users with a booking BMI 40 kg/m^2 for whom moving and handling are likely to prove unusually difficult should have a moving and handling risk assessment carried out in the third trimester of pregnancy by the antenatal clinic midwife. This is to determine any requirements for labour and birth like equipment requirements in labour and potential tissue viability issues.
- Clear communication of manual handling requirements should occur between the labour and theatre suites when women/service users are in early labour.

3.3.5 Additional steps for Women/service users with BMI > 45

Please follow all steps above for BMI >30, >35 and 40 and this additional step:

- These women/service users must be referred to maternal medicine clinic.

3.3.6 Management after Bariatric Surgery

3.3.6.1 Women/service users with previous bariatric surgery have high-risk pregnancies and should have consultant-led antenatal care.

3.3.6.2 There is a lack of evidence on the optimal nutritional monitoring and supplementation strategies in pregnancy after Bariatric Surgery.

3.3.6.3 There should be screening for nutritional deficiencies at booking and have these corrected if required. This request includes: FBC, U/Es, serum

protein and albumin, LFTs, serum Vitamin D with calcium, phosphate, magnesium, parathyroid hormone (if serum calcium is raised), Ferritin, folate and Vitamin B12.

3.3.6.4 Women/service users with previous bariatric surgery should be referred to a dietician for advice regarding their specialized nutritional needs.

3.3.6.5 If they have an AGB (Adjustable gastric band), assess (Gestational weight gain) GWG and fetal growth and manage band as appropriate and in conjunction with bariatric surgeons.

3.3.6.6 Request serial growth scans to be arranged at 32, 36 and 39 weeks. This is as per local SBL pathway:

3.3.6.7 There is no consensus on how to screen for gestational diabetes in these women/service users. Women/service users with bariatric surgery cannot have OGTT due to concerns with regards to the tolerability (dumping) and accuracy of OGTT. The following is advised:

1. Check fasting glucose/HbA1c in the first trimester if there is a personal history of diabetes or if other risk factors are present.
2. Offer 5 days HBGM at 24-28 weeks for all women/service users who had bariatric surgery.
3. They should be discussed with the Specialist Diabetes Midwives on an individual basis.

3.3.7 Antenatal Admissions

All women/service users with a BMI over 30 who are admitted should have the following:

- VTE risk assessment must be repeated and documented on VTE risk assessment form.
- Complete Waterlow assessment and consider any tissue viability issues.
- Appropriate sized TED stockings. If this is unavailable, consider use of flowtron boots.

3.3.8 Summary of Antenatal Care

BMI>30
• Use BMI care pathway • Folic Acid 5mgs OD until 12weeks of gestation • Vitamin D 25mcg (800-1000iu) OD supplementation throughout pregnancy • Consider Aspirin 150 mgs OD if addition risk for pre-eclampsia • BP monitoring with appropriately sized cuff (upper arm circumference ≥ 35cm, use large cuff) and manage women/service users who develop hypertensive complications according to trusts guideline. • Ongoing VTE assessment at each clinical encounter • OGTT between 24-28 weeks • Documented discussion of risks intrapartum • Active management of 3rd stage
BMI >35 in addition to all the steps above
• Referral to consultant clinic • Serial growth scans as per SBL pathway. • Re-measure maternal weight in 3rd trimester • If additional co-morbidities, refer to obstetric anaesthetic clinic • Thromboprophylaxis for a minimum of 10 days regardless of delivery mode in accordance with VTE guidelines.
BMI > 40 in addition to all the steps above
• If plus additional co-morbidity, refer to maternal medicine clinic • Refer to obstetric anaesthetic clinic at the first antenatal clinic encounter. • Consider antenatal thromboprophylaxis if it fulfils RCOG VTE 37a guideline • Documentation of manual handling assessment and tissue viability issues at 36 weeks
BMI >45 in addition to all the steps above
• Referral to maternal medicine clinic

DALTEPARIN DOSE:

See trust VTE guideline :Thromboprophylaxis in pregnancy and puerperium.pdf

3.4 Intrapartum Care

- Women/service users with BMI >30-34.9 can deliver under midwifery led care in delivery suite.
- Women/service users with a BMI >35 should give birth on the delivery suite with consultant led care.
- All women/service users with a BMI >30 should be aware of their increase in risk of intrapartum complications including:
  1. Difficulty with fetal monitoring,
  2. Risk of slow labour
  3. Risk of shoulder dystocia,
  4. Risk of caesarean delivery with increased operative complications.
  5. Increased risk of postpartum haemorrhage,
- The on-duty anaesthetist covering the labour ward should be informed of all women/service users with class III obesity admitted to the labour ward for birth. This communication should be documented by the attending midwife in the notes.
- The decision regarding mode of delivery should be made on an individual basis by the woman and the Consultant in charge of her care.
- In the absence of good-quality evidence, intrapartum fetal monitoring for obese women/service users in labour should be provided in accordance with NICE NG 121, NG 221 recommendations and local trust guideline on fetal monitoring: 'Fetal Monitoring Guideline.pdf'.
- Women/service users with a BMI 40 kg/m^2 or greater should have venous access established early in labour and consideration should be given to the siting of a second cannula.
- Active management of the third stage should be recommended to reduce the risk of postpartum haemorrhage (PPH) in women/service users with BMI greater than 30kg/m^2.
- Women/service users with class III obesity who are in established labour should receive continuous midwifery care, with consideration of additional measures to prevent pressure sores and monitor the fetal condition.
- Elective induction of labour at term in obese women/service users may reduce the chance of caesarean birth without increasing the risk of adverse outcomes; the option of induction should be discussed with each woman on an individual basis.
- The decision for a woman with maternal obesity to give birth by planned caesarean section should involve a multidisciplinary approach, taking into consideration the individual woman's comorbidities, antenatal complications, and wishes.
- Where macrosomia is suspected, induction of labour may be considered. Parents should discuss the options of induction of labour and expectant management.

3.4.1 Vaginal Birth After Caesarean

- Women/service users with a booking BMI 30 kg/m^2 or greater should have an 12individualized decision for VBAC following informed discussion and consideration of all relevant clinical factors.

- Obesity is a risk factor for unsuccessful VBAC. If there is no clear plan for VBAC on admission, discuss with the on-call consultant. Refer to VBAC guidelines: 'Vaginal Birth After Caesarean Section and Care of Women/service users with Previous Uterine surgery .pdf'.

- All women/service users with a BMI >30 should be recommended to have active management of the third stage of labour. This should be documented in the notes.

3.4.2 Admission to Labour ward

For women/service users with a raised BMI who are admitted in labour or for induction of labour please ensure the following:

- Inform obstetric SPR (all women/service users with BMI >35)
- Inform obstetric consultant (all women/service users with BMI >40)
- Inform anesthetist (all women/service users with BMI >40 or >35 with co-morbidity)
- Consider early IV access
- Consider ultrasound to confirm presentation
- Ensure VTE risk assessment is completed in labour – stop low molecular heparin once in early labour. Consider flowtron boots.
- In the absence of good-quality evidence, intrapartum fetal monitoring for obese women/ service users in labour should be provided in accordance with NICE NG 121 and NG 221 recommendations. Inform theatre staff of any women/service users who weighs >120kg
- A pressure sore score should be performed hourly to assess tissue viability.
- Consider Omeprazole 40mg orally once daily or 20mg orally twice daily during labour

3.4.3 Delivery

- In view of the increased risk of fetal macrosomia and shoulder dystocia, the On-call Obstetric Senior Registrar or Obstetric Consultant should be notified of the impending delivery.

- Remember that routine maneuvers for shoulder dystocia, such as McRoberts and suprapubic pressure, may be difficult. If the patient needs an instrumental delivery for the usual indications, consider delivery in theatre.

- If delivery is by LSCS, either elective or emergency, the case must be discussed with the on-call Consultant.

- Women/service users with a BMI >30 having a caesarean section have an increased risk of wound infection and should receive prophylactic antibiotics at the time of surgery.

- Consider avoiding the area directly under the panniculus because of the increased risk of infection post-operatively.

- Have consideration made to access at Caesarean section. The use of a retractor can be used to aid this.

- There is contradictory advice from RCOG and NICE. RCOG GTG 72 states that there is a lack of good-quality evidence to recommend the routine use of negative pressure dressing therapy, barrier retractors and insertion of subcutaneous drains to reduce the risk of wound infection in obese women/service users requiring caesarean sections. However, NICE guidelines (43) advise the use of a Negative Pressure Wound therapy, for example PICO dressing [Smith & Nephew]), in all women/service users with BMI >45. Consider using it also in women/service users with BMI > 35-40 with other risk factors for poor wound healing.

- Good haemostasis is essential: use of a subcuticular drain may be appropriate,and the subcutaneous tissue space closed if the subcutaneous fat layer is ≥2cm. Use of interrupted sutures may be considered for skin.

- Consider giving IM syntometrine into arm- deltoid, as there may be difficulties in injecting in leg muscles which can affect absorption.

3.4.4 After Delivery

Postnatal Care

3.4.4.1 Ensure adequate breast-feeding advice and support. Women/service users with a booking BMI >30 should receive appropriate specialist advice and support postnatally regarding benefits.

3.4.4.2 If the woman (BMI>40) has not been antenatally referred to the Dietetics service, this should be considered postnatally.

3.4.4.3 VTE prophylaxis in accordance with RCOG 37a and trust guidelines.

3.4.4.4 Refer to NICE CG189. Women/service users with class I obesity or greater at booking should continue to be offered nutritional advice following childbirth from an appropriately trained professional, with a view to weight reduction in line with NICE Public Health Guideline 27.

3.4.4.5 Women/service users who have been diagnosed with gestational diabetes should have postnatal follow-up in line with NICE Guideline 3

3.4.4.6 Have contraception discussed with them prior to discharge. This needs to include the risk of VTE with the combined pill, and advice to use a long-term contraceptive to allow weight loss between pregnancies

3.5 Manual Handling Issues and Specialist Equipment (See Appendix 2)

- Standard delivery beds take a weight up to 180kg
- Soft beds on ward 9 or 10 take weight up to 220kg
- Toilets on wards take a weight up to 178kg

4.0 Statement of evidence/references

References:

Association of Anaesthetists Great Britain and Ireland. Peri-operative management of the morbidly obese patient. 2007 aagbi.org/1507– 1522. https://doi.org/10.1111/obr.12927 (2022).

CEMACE/RCOG (2010). Management of women/service users with obesity in pregnancy CMACE. Saving Mothers' Lives: reviewing maternal deaths to make motherhood safer: 2006–

The Eighth Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. BJOG 2011;118(Suppl. 1):1–203.

Enquiries into Maternal Deaths and Morbidity 2018-20. MBRRACE-UK. **https://www.npeu.ox.ac.uk/assets/downloads/mbrrace-uk/reports/maternal-report-**2022/MBRRACE-UK_Maternal_MAIN_Report_2022_v10.pdf

Hignett S. et al (2007) Risk assessment and Process planning for bariatric patient handling pathways http://www.hse.gov.uk/research/rrpdf/rr573.pdf

Institute of Medicine (US) and National Research Council (US) Committee to Reexamine IOM Pregnancy Weight Guidelines; Rasmussen KM, Yaktine AL, editors. Washington (DC): National Academies Press (US); 2009.

Khan R, Dawlatly B, Chappatte O. Pregnancy outcome following bariatric surgery. Obstet Gynaecol. 2013 [cited 2019 Jun 14];15(1):37–43. Available from: http://doi.wiley.com/10.1111/j.1744-4667.2012.00142.x.

Knight M, Bunch K, Patel R, Shakespeare J, Kotnis R, Kenyon S, Kurinczuk JJ (Eds.) labour. www.nice.org.uk/guidance/ng229

Lessons learned to inform maternity care from the UK and Ireland Confidential

National Institute for Health and Care Excellence. (2019). Intrapartum care for women/service

National Institute for Health and Care Excellence. (2022). Fetal monitoring in

National Institute for Health and Clinical Excellence (NICE). Antenatal care: Routine care for

National Institute for Health and Clinical Excellence (NICE). Obesity: the prevention, identification, assessment and management of overweight and obesity in adults and children. December 2006 CG43.

National Obesity Forum (2001) The guidelines on the management of adult obesity and overweight in primary care. 'www.nationalobesityforum.org.uk'.

NICE Medical technologies guidance [MTG43]: PICO negative pressure wound dressings for closed surgical incisions Published date: 09 May 2019 Last updated: 06 August 2019.

NMPA Project Team. National Maternity and Perinatal Audit: Clinical Report 2017.

Ranitidine supply disruption alert (SDA/2019/005) issued on 15 October 2019.
RCOG London, 2017.
reviews for obesity. https://www.nice.org.uk/guidance/ng121/evidence/evidence-review-i-obesity-pdf-241806242772

Routine prophylactic drugs in normal labour for reducing gastric aspiration and its effects. Cochrane Database of Systematic Reviews 2006, Issue 3. Art. No.: CD005298. DOI: 10.1002/14651858.CD005298.pub2.

Royal College of Obstetricians and Gynaecologists (RCOG). Thromboprophylaxis during pregnancy, labour and after normal vaginal delivery. Green top guideline no.37a 2015

Royal College of Obstetricians and Gynaecologists(RCOG). Thromboembolic disease in pregnancy and the puerperium: acute management. Green top guideline no.28 2001

Royal College of Obstetricians and Gynaecologists. Care of Women with Obesity in pregnancy. Green-top Guideline No. 72. BJOG 2018
Shawe, J, Ceulemans, D, Akhter, Z, et al. Pregnancy after bariatric surgery: Consensus recommendations for periconception, antenatal and postnatal care. *Obesity Reviews*. 2019; 20:
The healthy pregnant woman. October 2003 CG6
user with existing medical conditions or obstetric complications and their babies: Evidence

External weblinks: Please note that although Milton Keynes University Hospital NHS Foundation Trust may include links to external websites, the Trust is not responsible for the accuracy or content therein.

5.0 Governance

5.1 Record of changes to document

Version number: 5.0			**Date:** 22/05/23	
Section Number	**Amendment**	**Deletion**	**Addition**	**Reason**
Full document	Reviewed and updated			Update

5.2 Consultation History

Stakeholders Name/Board	**Area of Expertise**	**Date Sent**	**Date Received**	**Comments**	**Endorsed Yes/No**
Erum Khan	O&G Consultant			Incorporated	Yes
Nandini Gupta	O&G Consultant		24/04/2020	Suggested amendments to clinic appointments for women/service users with BMI 35-40	Yes
Michelle Fynes	O&G Consultant		24/04/2020	No suggestions	N/A
Nidhi Singh	O&G Consultant		24/04/2020	No suggestions	N/A
Omar Mulki	O&G Consultant		24/04/2020	No suggestions	N/A
Mary Plummer	Matron		27/04/2020	Incorporated	Yes
Julie Cooper	Head of Midwifery		24/04/2020	Incorporated	Yes
Guidelines group discussion	Obstetricia ns and Midwife		24/06/2020	Include antacid indormation – 150mg ranitidine, omeprazole 20mg twice daily or 40mg Once a day	
Leanne Andrews/Katie Selbie	Audit and guideline midwife/ Clinical Gov. and Quality lead		18/01/2023	Suggested change to regime of BP measurement and urinalysis for PET screening to be in line with the RCOG guideline	Yes
Wendy Bryant	Healthy Lifestyle midwife		02/02/23	Addition of link to the RCOG PIL on Being overweight during pregnancy and after birth	Yes
Eleanor Tyagi	Consultant Anaesthetist		05/07/2023	3.3.8 Change 'Refer to obstetric anaesthetic clinic at 34-36 weeks' s to 'refer to obstetric anaesthetic clinic at first antenatal clinic encounter'	Yes
Anja Johansen-Bibby	Consultant Obstetrician		14/04/23	Among other comments, suggested an amendment to blood testing for nutritional deficiencies in women with bariatric surgery	Yes

Georgena Leroux	Fetal Surveillance Midwife		12/04/23	Incorporated	Yes
Jacqueline McAinsh	Midwife		16/04/23	Incorporated	Yes
Jess Matson	Midwife		12/4/23	Incorporated	Yes
Karen Ann Evans	Maternity Governance and Practice Development Administrator		27/7/23	Incorporated	Yes

5.2 Audit and monitoring

This Guideline outlines the process for document development will be monitored on an ongoing basis. The centralisation of the process for development of documents will enable the Trust to audit more effectively. The centralisation in recording documents onto a Quality Management database will ensure the process is robust.

Audit/Monitoring Criteria	Tool	Audit Lead	Frequency of Audit	Responsible Committee/Board
a) Percentage of women/service users presenting to service with BMI ≥30 b) Audit of outcome for women/service users with BMI≥40 c) Post birth complications in women/service users with BMI ≥ 40 d) Equipment matches specifications above	Audit and statistics	Obstetricians and Midwives	Annually	Maternity CSU

5.3 Equality Impact Assessment

As part of its development, this Guideline and its impact on equality has been reviewed. The purpose of the assessment is to minimize and if possible, remove any disproportionate impact on the grounds of race, gender, disability, age, sexual orientation, religion or belief, pregnancy and maternity, gender reassignment or marriage and civil partnership. No detriment was identified. Equality Impact assessments will show any future actions required to overcome any identified barriers or discriminatory practice.

Equality Impact Assessment			
Division	Women and Children's Health	Department	Maternity
Person completing the EqIA		Contact No.	
Others involved:		Date of assessment:	04/2020
Existing policy/service	Yes	New policy/service	No

Will patients, carers, the public or staff be affected by the policy/service?	Yes
If staff, how many/which groups will be affected?	*All staff working in maternity*

Protected characteristic	Any impact?	Comments
Age	NO	Positive impact as the policy aims to recognize diversity, promote inclusion and fair treatment for patients and staff
Disability	NO	
Gender reassignment	NO	
Marriage and civil partnership	NO	
regnancy and maternity	NO	

Race	NO	
Religion or belief	NO	
Sex	NO	
Sexual orientation	NO	

What consultation method(s) have you carried out?
Circulation via email, discussion at guidelines meeting and WH CIG
How are the changes/amendments to the policies/services communicated?
Circulation via email, discussion at guidelines meeting and WH CIG
What future actions need to be taken to overcome any barriers or discrimination?

What?	Who will lead this?	Date of completion	Resources needed
Review date of EqIA			

Appendix 1: Raised BMI Care Pathway

Document BMI at booking and consider the following:

Pregnancy and labour care pathway for women/service users with BMI ≥30 or above			
Action required	**Notes**		
Advised to take increased dose of folic acid – 5mg – in first trimester	Available as PGD from the midwife		
Advised to take 25mcg vitamin D throughout pregnant and whilst breastfeeding	Vitamin D available from GP's/ pharmacy		
Screening for gestational diabetes between 24-28 weeks gestation			
Increased risk of pre-eclampsia. Blood pressure and urine at every encounter, manage as per hypertension in pregnancy guideline	Do not send to ADAU unless indicated		
Place of birth discussed in antenatal period and recorded in notes by 36/40 (Home, Delivery Suite) and **discussion of associated risk**	Mothers may want a home birth or to use pool. Need to consider this in discussion. **See points over page**	Home Delivery Suite	
Overall obstetric management plan for intrapartum and postnatal care documented in notes			
Active management of 3rd stage discussed	Discuss increased risk of bleeding		
Additional pregnancy care for all women/service users with BMI ≥35			
Referral for consultant led care, shared with maternity team.	As per guideline		
Additional fetal ultrasound for growth and liquor volume at 36 weeks gestation.	As per guideline		
Assessment for specialist equipment requirement after 36 weeks.	See **manual handling guideline**		
Additional pregnancy care for all women/service users with BMI ≥40			
Consultation in joint Obstetric/anaesthetic clinic after 32 weeks.	Ensure appointment made to see Anaesthetist		
Consider tissue viability and manual handling requirements from 36 weeks gestation. *See Trust Guideline*	Look at PUP guideline.		

Information mothers need to know

Most pregnancies in women/service users with raised BMI will result in a healthy baby. However, adverse pregnancy outcomes also rise with BMI.

Women/service users are at a higher risk of:

1. Increased risk of Gestational diabetes
2. Hypertension
3. Thromboembolism
4. preterm labour
5. Increased risk of induced labour
6. Increased risk of instrumental delivery
7. Increased risk of operative delivery
8. Increased risk of maternal death

For further information please refer to the NICE guidance for 'Dietary interventions and physical activity interventions for weight management before during, and after pregnancy'

http://www.nice.org.uk/guidance/PH27

Other considerations

1. BMI > 30 poses greatest risk to mother and baby.
2. Advice needs to be given regarding healthy diet and being physically active
3. Making changes during pregnancy will make it easier to move towards a healthy weight after giving birth
4. Manual handling considerations apply to mothers with any reduced mobility, but should also be considered for labour
5. Tissue viability – see Trust guideline: Pressure Ulcer Prevention Guidelines.pdf (sharepoint.com)

Appendix 2: Patients with morbid obesity - practical aspects

Equipment

- Table: Maternity theatre 1 table X 350KG: Table 2 x450kg.
- Lithotomy poles: The current Lithotomy poles are sufficient to support Women/service users with raised BMI.
- Slide sheets: 115cms wide kept in all clinical areas.
- Wide BP cuffs: All clinical areas.
- Arterial line: Consider for most patients the need to use the forearm.
- Epidural / spinal: Consider using two foot stool without wheels as foot rests whilst patient undergoes siting of regional block.
- Nasal cannulae: For overnight oxygenation.
- Electric bed: Post operative management.

Anaesthetic kit

- Tuohy needles: 80mm, 110mm and 150mm 18g or 16g.
- CSE kits: (Pjunck) 90mm Tuohy kits 18g or 16g, or use 110mm Tuohy with Vygon 25g x 145mm whitacre (pencil point) spinal needle.

Pre Delivery

- Early anaesthetic review
- Check airway and intubation parameters.
- Check supine Sp02 >96% on room air.

Delivery

- Get extra experienced hands.
- Consultant Obstetric Anaesthetist and Consultant Obstetrician to be informed of admission and impending delivery.
- Make a strong attempt to avoid a general anaesthetic.
- Regional anaesthesia using standard doses. The epidural space is full of fat so there can be more rather than less spread of a conventional dose.
- Antacid prophylaxis use rigorously.
- Pre-oxygenate in head up position.
- Use the ramp position for intubation i.e. External auditory meatus and the sternal notch horizontal, use a pillow or blankets under the upper chest to achieve this position.
- Polio blade is useful to overcome large breasts.
- Awake intubation may be needed.
- Panniculus will need to be retracted, aim for a vertical pull using sponge forceps and bandages over the top of a weighted drip stand and attach to a firm object.

Post Delivery

Thromboprophylaxis - use the larger doses of low weight molecular heparin, consider discussion with haematologist/ Mat med Cons Miss Khan

- Electric bed.
- HDU may be required.
- CPAP may be needed if sats pre – op reduced.

Appendix 3: Template for Anaesthetic Assessment for Obstetric Patients with BMI>40

Management plan
High Risk Obstetric Anaesthetic Clinic,

Name _____

DOB _____ **Hosp. No** _____
BMI _____ **BP** _____
Obstetric status _____ **EDD** _____
Co-Morbidities

_____
_____

Allergies

_____

Airway Assessment

Mal I II III IV

Neck _____ **TMD** _____

Jaw Protrusion A B C

Spine

Spaces felt yes no

Anatomic abnormalities

_____
_____
_____

Problems with anaesthesia anticipated?

_____
_____

Anaesthetic management plan _____
_____
_____

Specialist bariatric equipment requirements

Bed
Theatre bed
Chair
Wheelchair
Hoist
Ex large BP cuff
Ex large TEDS

Assessed by **Date**

Sign:

Print: