East Lancashire Hospitals NHS Trust
A University Teaching Trust

	DIVISIONAL DOCUMENT
Delete as appropriate:	Clinical Guideline
DOCUMENT TITLE:	**Management of Maternal Obesity in Pregnancy**
DOCUMENT NUMBER:	**G39 v5**
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LEAD EXECUTIVE DIRECTOR DGM	Divisional General Manager
AUTHOR(S): Note should not include names	Consultant Obstetricians Consultant Anaesthetist

TARGET AUDIENCE:	Midwives, Obstetricians, Anaesthetists, Dieticians and Theatre, HDU & ICU Staff, Diabetic Team
DOCUMENT PURPOSE:	To describe the management of maternal obesity in pregnancy when providing antepartum, intrapartum and postpartum care to women with BMI ≥ 30.
To be read in conjunction with	Maternity Services Guidelines – G18A Management of pre-existing diabetes and gestational diabetes before and during pregnancy G22 Thromboprophylaxis G27 Transfer of Care G41 Booking and Referral G68 Detection and Management of Fetal Growth Restriction

SUPPORTING REFERENCES	1. Knight M. The Women Who Died 2013-2015. MBRRACE-UK report. 2. World Health Organisation (2009) Global database on body mass index 3. CMACE/RCOG Joint Guideline, Management of Women with Obesity in Pregnancy, March 2010. 4. Krishnamoorthy U, Schram CMH and Hill SR (2006) Maternal Obesity in Pregnancy: is it time for meaningful research to inform preventive and management strategies? Review Article. British Journal of Obstetrics & Gynaecology 113: 1134-1140 5. Institute of Medicine (1990) Nutrition during Pregnancy, Part I: Weight Gain; Part II: Nutrient Supplements. The National Academy of Sciences, Washington DC 6. National Institute for Health and Clinical Excellence (2008). Antenatal care: Routine care for the healthy pregnant woman. London: NICE. Available at: www.nice.org.uk 7. Multi-disciplinary team meeting and discussions on Obesity Study Day, 6th December 2006, The Learning Centre, Royal Blackburn Hospital, East Lancashire Hospitals NHS Trust: 3 audit presentations on obesity, a questionnaire based evaluation of views of ELHT professionals and a presentation of evidence base to develop care package for obese women. 8. RCOG Guideline number 37a, April 2015: Reducing the Risk of Venous Thromboembolism in Pregnancy and the Puerperium. RCOG Press, London. 9. NICE public health guidance No.27 July 2010, Weight management before, during and after pregnancy. 10. Peri-operative management of the obese surgical patient. The Society for Obesity and Bariatric Anaesthesia, March 2015. 11. RCOG Guideline number 72, November 2018: Care of women with obesity in pregnancy 12. NICE NG121 Intrapartum Care for women with existing medical conditions or obstetric complications and their babies, March 2019

CONSULTATION		
	Committee/Group	Date
Consultation	Consultants	March 2022
Approval Committee	Women and Newborn QSB	March 2022
Ratification date at WNQSB	March 2022	
NEXT REVIEW DATE:	March 2025	
Amendments	March 2022 Full review and update Wording on folic acid to commence pre-conception added New section on screening and its limitations New recommendation to consider induction of labour at term to reduce chance of emergency caesarean section New recommendation on mode of birth counselling in obese women with LGA New recommendation on place of birth discussion New recommendation on ultrasound to confirm cephalic presentation at onset of labour. New recommendations within section on caesarean section New recommendations within postnatal section New SOP for theatre.	

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39.1 Introduction

Overweight or obese pregnant women and their babies face an increased risk of complications during pregnancy and childbirth, such as:

Mother:

- impaired glucose tolerance and gestational diabetes
- miscarriage
- pre-eclampsia
- venous thromboembolism
- haemorrhage
- dysfunctional labour
- shoulder dystocia
- death
- mental health problems

Baby:

- macrosomia
- congenital anomaly
- obesity in later life
- stillbirth and neonatal death.

39.2 Booking and care pathway planning

- Patients who have undergone bariatric surgery should ideally wait 12-18 months after surgery before conceiving. When presenting for antenatal care, these women should be identified and allocated to consultant led care.

- Height and weight must be measured, and BMI calculated for all women at booking or at time of dating scan if this is not possible, but certainly by 12 weeks. BMI charts/wheels are available for staff to undertake this and inform women of BMI calculated. This should then be documented in the handheld notes.

- Women should be advised to book for Midwifery-led care with normal BMI 18.5 - <25, or BMI 25-34.9 with no other risk factors present. Women with BMI 30-34.9 should have a referral for consultant opinion **only if there are other risk factors**. This BMI alone does not warrant a consultant opinion. (See ELHT Maternity Services Clinical Guideline: 41 Booking and Referral).

- Women with a BMI ≥35 should be booked for consultant care including a discussion on place of birth. (See ELHT Maternity Services Clinical Guideline 41: Booking and Referral).

- If women with a high BMI chooses not to give birth within the recommended care setting, they should be counselled on the risks, benefits and alternatives (as appropriate) and an individual management plan should be developed with the woman and an appropriately trained professional (Birth Centre lead midwife/ obstetrician/anaesthetist) and documented in the maternity records.

- All women with BMI ≥30 should have a documented antenatal consultation with an appropriately trained professional to discuss possible complications.

39.3 Antenatal care

<u>All women with BMI ≥30</u>

- Antenatal raised BMI checklists should be used in care of all pregnant women with booking BMI of ≥ 30 (Appendices 1 and 2). The relevant checklist should be added to the maternity notes.

- Explain the implications of high BMI – refer to patient information leaflet.

- Advise all women on healthy lifestyle and diet to moderate weight gain in pregnancy. Lifestyle and healthy diet are more beneficial when compared to prescribed weight gain targets. Emphasise that active weight loss measures are **not** recommended in pregnancy. If BMI is > 30 advise on healthy lifestyle and exercise and offer referral to dietician. (Appendix 3)

- Women should be advised to continue 5mg folic acid daily up to 12 weeks, ideally commencing at least 1 month prior to conception.

- Commence 10 mcg Vitamin D daily throughout pregnancy.

- Also consider 150 mg aspirin if additional moderate risk factors for pre-eclampsia.

- Thromboembolism risk should be assessed and thromboprophylaxis prescribed if indicated.

- Document blood pressure and cuff size at booking.

- Book Glucose Tolerance test (GTT) at 26 weeks.

<u>Additional Care for Women with BMI ≥ 35</u>

- Arrange serial growth scans in line with current guidance (See ELHT Maternity Services Clinical Guideline 68: Detection and Management of Fetal Growth Restriction).

- Reweigh at 36 weeks to ensure appropriate care in labour and explain obstetric/midwifery safer handling risk assessment care plan. (Appendix 4).

- Facilitate an anaesthetic review if BMI ≥ 40 or ≥ 35 with other potential cause for concern. The referral should be sent via Badgernet or ICE and the woman should be informed to expect such a consultation in the antenatal period (see section 39.6 on anaesthetic requirements; see also ELHT Maternity Services Clinical Guideline 41 Booking and Referral).

- Ensure all plans are documented within the maternity notes.
- Women with BMI ≥ 35 who are multiparous and who have no other risk factors should be offered the range of birthplace settings, with plans for recourse to CLC unit if complications arise. This group of women are suitable for shared care and not for entirely midwife led care.

- If body weight is ≥ 130 kg, theatre staff should be made aware for a manual handling assessment on admission.

- All labour beds (Hillrom Affinity 4) can hold up to 227kg in lithotomy.

- The theatre table in theatre one can accommodate a body weight of 218kgs in both supine and lithotomy positions. Two of the tables can accommodate a body weight of 360kgs in both supine and lithotomy.

- Guidance is available on all wards / departments in the Trust for ordering / renting bariatric equipment (Trust Guide to Safer Handling file, Section 1).

- All women with BMI ≥ 40 should also have an individual documented assessment within the third trimester by an appropriately trained professional to determine manual handling requirements for childbirth, consider tissue viability issues and current weight, including the relevant tissue viability teams if necessary.

Screening

- Women should be counselled that all screening methods in pregnancy, particularly ultrasound scans for structural anomalies are more limited in obese pregnant women.
- Consider the use of transvaginal scanning for nuchal translucency if difficult to obtain transabdominally.

39.4 Intra-partum care

- Recommend active management of the third stage of labour for all women with BMI ≥ 30.

- For fetal macrosomia, induction of labour/planned Caesarean section may be considered after a thorough discussion with the woman and a senior clinician on the benefits and risks of these methods vs expectant management. Use the LGA proforma to counsel these women.

- Elective induction of labour at term in obese women 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[11]. Women with a BMI >35 should be counselled on this and have elective induction of labour offered to them at term on this basis.

- Consider ultrasound scanning at the start of established labour if the baby's

presentation is uncertain for women with a BMI over 30 kg/m^2 at the booking appointment, particularly those with a BMI over 35 kg/m^2 [12]

- For women with a BMI over 30 kg/m^2 at the booking appointment and reduced mobility in the third trimester, consider advising the lateral position in the second stage of labour[12].

- For those with prior Caesarean section, discussion must be undertaken in line with G42 v4 VBAC.

Caesarean Section (to be read in line with G21 Caesarean section)

- Close subcutaneous fat where the depth of this tissue is 2cm or more.
- There is a lack of evidence for the use of negative pressure dressings, barrier retractors and subcutaneous drains to prevent infection so these should not be used routinely.
- The decision for a woman to have a planned Caesarean section based on maternal obesity should be multidisciplinary, taking into account comorbidities, antenatal complications and the woman's wishes.
- The consultant obstetrician should be present for theatre cases in women with BMI 50, or where requested.

Women with BMI ≥ 40 – **Intrapartum Checklist is part of Appendix 2**

39.5 Anaesthetics Requirements:

- The resident obstetric anaesthetist must be informed when a woman with a BMI ≥ 40, or ≥35 with other potential cause for concern, is admitted to Central Birth Suite.

- The Consultant Anaesthetist must be informed about women in Central Birth Suite who have a BMI >50 (or lower, if there are additional risk factors.)

- Consider a second anaesthetist for caesarean birth of a woman with BMI > 50 (or lower, if there are additional risk factors), although it may not always be possible to wait for their arrival.

39.6 Post-partum Care

- Thromboprophylaxis as per Postnatal VTE Risk Assessment. (See also ELHT Maternity Services Clinical Guideline 22: Thromboprophylaxis)

- Discuss postnatal contraception with due consideration to the risk of venous thromboembolism in the postnatal period. Specifically, advise a progestogen-based contraceptive as opposed to those containing estrogen.

- Women with obesity have lower rates of breastfeeding initiation and maintenance. Women with BMI >30 should receive appropriate specialist advice and support antenatally and postnatally regarding the benefits, initiation, and maintenance of breastfeeding.

Post-operatively patients with BMI >50 (or lower if there are additional risk factors) must be individually assessed with regards to immediate postnatal management.

- Women with BMI >50 who meet the below criteria can be moved to the postnatal ward when ready:
    - normal birth with normal blood loss
    - mobile, eating and drinking with normal oxygen saturations on air
    - no narcotics in the last 4 hours
    - no other co-morbidities.

- Factors to consider when planning higher level immediate postnatal care include:
    - Pre-existing co-morbidities
    - Limited functional capacity
    - Surgical procedure indicates
    - Untreated obstructive sleep apnoea plus a requirement for postoperative parenteral opioids
    - Local factors including the skill mix of ward staff. [10]

- The need for higher level care must be assessed and transfer to the High Dependency Unit (or even ITU) may be necessary (see also ELHT Maternity Services Clinical Guideline 27: Transfer of Care).

Women should be informed that weight loss between pregnancies reduces the risk of stillbirth, hypertensive complications and fetal macrosomia. Weight loss will also increase the chance of success when attempting VBAC.

39.7 Monitoring of compliance with guideline

The guideline will be reviewed and audited when.

I. Clinical Risk Management dictates.
II. National guidance is updated and implemented

APPENDIX 1

CHECKLIST FOR WOMEN WITH BMI 30-34.9 IN PREGNANCY

AT BOOKING

Calculate BMI at booking	
Use appropriate cuff for blood pressure and document cuff size	
Advise 5mg Folic Acid up to 12/40	
Advise 10mcg vitamin D throughout pregnancy	
Give information leaflet 'Raised BMI in pregnancy'	
Discuss antenatal, intrapartum and postnatal risks associated with raised BMI in leaflet	
Discuss appropriate weight gain in pregnancy (refer to leaflet)	
Discuss and arrange OGTT at 26/40	
Refer for consultant opinion as per booking and referral criteria (if other risks)	

CHECKLIST FOR WOMEN WITH BMI >35 IN PREGNANCY

BOOKING

	√
Use appropriate cuff for blood pressure	
Advise 5mg Folic Acid up to 12/40	
Advise 10mcg vitamin D throughout pregnancy	
Give information leaflet 'Raised BMI in pregnancy'	
Discuss antenatal, intrapartum and postnatal risks associated with raised BMI in leaflet	
Discuss appropriate weight gain in pregnancy (refer to leaflet)	
Discuss and arrange OGTT at 26/40	
Refer for consultant opinion as per booking and referral criteria	
Reweigh at 36 weeks	
Anaesthetic referral as per booking and referral criteria	

STANDARD MANGEMENT PLAN FOR DELIVERY - CHECKLIST

On admission (BMI ≥ 40):	√
Inform senior obstetrician	
Inform senior anaesthetist	
Inform theatre	
Tissue viability assessment	

In Labour (BMI ≥ 40):	√
Check antenatal safer handling assessment – do if not done	
Early IV access and bloods for Group & Save and FBC	
Antacid prophylaxis	
Consider FSE if difficulty monitoring	
Consider instrumental birth to be undertaken in theatre	
Consultant must be informed if caesarean section is for a woman with a BMI ≥ 50.	

POSTNATAL

All women:	√
Encourage to mobilise as early as practicable	
BMI>50:	
Individual assessment regarding postnatal care	
Consider 24hr stay on CBS if additional risks, eg. PPH, EMCS, sepsis.	

Hospital Number .....DOB.....
First Name .....M / F.....
Last Name .....Religion.....
Address.....GP.....
.....
NHS Number .....

East Lancashire Hospitals NHS Trust

NUTRITION AND DIETETIC SERVICE:
Adult Outpatient Referral Form

Tel. no. _____
GP details: Name_____Address _____

DIAGNOSIS/REASON FOR REFERRAL – please tick

□ Nutrition support (refer to Malnutrition Universal Screening Tool 'MUST')
____% weight loss; 'MUST' score _____
□ Overweight/obese If the referral is for weight reduction advice only, patient to self-refer into the service via the freephone number 0300 3000 130
□ Newly diagnosed diabetes (type 1 / type 2 *) / IGT (please delete as appropriate)
□ Existing diabetes needing dietetic review / recently commenced on insulin
□ Hepatic / renal disease
□ Hyperlipidaemia. CHD risk score _____%
□ Coeliac disease Date of diagnosis____/____/____Diagnosis by: □ biopsy; □ blood test
□ IBS (screening for coeliac disease done □)
□ Inflammatory bowel disease i.e. Crohns disease and ulcerative colitis
□ Allergy (confirmed/suspected*) new/review* of diet
□ Other (please specify) _____

RELEVANT DETAILS TO AID PRIORITISATION
e.g. medical history, investigations, drug therapy, social circumstances, relevant blood results.
……
……
Urgency of referral: Non-urgent □ Urgent □ If urgent please specify reason:
Is a home visit required? No □ Yes □ If yes please specify reason:
Are there any safety/security: No □ Yes □ If yes please give details
issues involved in seeing this patient?.....
Other services involved (e.g. District Nurses/Consultants/other hospital services)
Any special requirements (e.g. any communication & language needs)
REFERRER DETAILS: Name _____ Position _____
Address_____Contact number _____
Signature of referrer_____Date of referral_____/_____/_____
This referral has been agreed with the patient Yes □ No □ Implied □

INCOMPLETE FORMS WILL BE RETURNED TO THE REFERRER
Please fill out the form giving as many details as possible

- **Burnley office - Tel: 01282 602452 Fax: 01282 691770**
- **Blackburn office - Tel: 01254 734059 Fax: 01254 736162**

Essential on all referrals:
Weight:_____kg Height:_____m BMI:_____kg/m2

APPENDIX 4 Midwifery/Obstetric Pressure Damage and Safer Handling Risk Assessment/ Care Plan

Hospital Number .....DOB.....

First Name .....M / F.....

Last Name .....Religion.....

Address.....GP.....

.....

NHS Number .....

This care plan is for use with all women with a BMI≥ 40 and should be discussed and documented with the woman and her birth partner (if possible) in the third trimester. The care plan should then be reviewed in conjunction with the woman and her birth partner on admission in labour. Please refer to the following Trust guidelines for further information:

- ELHT Maternity Services Clinical Guideline 39: Management of Obesity
- ELHT Clinical Practice Manual CP25: Pressure Ulcer Policy.
- ELHT Corporate Policy C029 Safer Handling Policy.

If any deviations are identified than an individualised midwifery / obstetric management plan MUST be implemented and documented.
To be used in conjunction with the Pressure Damage Risk Assessment on admission.

PROBLEM	GOAL	ACTION	DATE DISCUSSED	SIGNATURE DESIGNATION	DATE REVIEWED	SIGNATURE DESIGNATION
Pressure Damage	To prevent pressure damage	1.) Ensure positional change every 2 hours.				
		2.) Discuss with the woman and her birth partner the need to remind staff if assistance with positional change is required.				
		3.) Ensure that positional change of at least 20 degrees occurs; ensure the woman is aware that by altering the position of the bed e.g. raising / lowering the back of the bed, altering the lower part of the bed so that the knees are raised is a positional change.				
		4.) Whilst supporting / undertaking 2 hourly positional changes assess skin integrity, observing for redness / blanching, document and act on any change accordingly.				
		5.) If there are any underlying skin conditions e.g. eczema /psoriasis then positional change and the assessment of skin integrity must occur hourly.				

		6.) If birth is by Caesarean Section then sutures need to remain in situ for 14 days.				
PROBLEM	**GOAL**	**ACTION**	**DATE DISCUSSED**	**SIGNATURE DESIGNATION**	**DATE REVIEWED**	**SIGNATURE DESIGNATION**
Safer Handling	To ensure safer handling requirements are met ensuring there is no risk to the woman or staff.	1.) Utilise slide sheets for moving and handling.				
		2.) For transfer to theatre use the appropriate trolley in conjunction with the pat slide and slide sheets (Pat Slide maximum weight 200kgs / 32 stone).				
		3.) For transfer from theatre to COU the Hillrom bed with a maximum weight capacity of 185 kgs needs to be brought into theatre. This will reduce the number of transfers thereby maintaining the safety of the woman and staff				
		4.) When lithotomy position is required 2 staff need to be available to move each leg as each leg accounts for 20% of the total body weight				
		5.) Utilisation of the correct equipment and the appropriate number of personnel during safer handling procedures E.g. for transfer into theatre 4 members of staff need to undertake the transfer, it is required that they are suitably fit persons that is not pregnant, two staff need to be at the head and two at the foot of the bed for transfer.				
		6.) Contact Safer Handling Lead Training and Community Ext 13357 if further advice is required.				

Hospital Number ..... DOB .....
First Name ..... M / F .....
Last Name ..... Religion .....
Address ..... GP .....
.....
NHS Number .....

APPENDIX 5

East Lancashire Hospitals NHS Trust

Maternity Services
Pressure Damage Risk Assessment

	DATE: TIME:							
Moisture								
Membranes intact	**0**							
Clear liquor	**1**							
Stained liquor	**2**							
Meconium liquor	**2**							
Mobility								
Reluctant to mobilise	**2**							
Restricted eg.monitoring/other equipment/drugs	**3**							
Bed/chair bound, theatre, lithotomy, instrumental delivery	**5**							
Build								
BMI 20-30	**0**							
BMI >30	**2**							
BMI >41	**3**							
BMI <20	**3**							
Appetite								
Poor during whole pregnancy/last month	**1**							
No diet for last 12 hours	**1**							
Fluids only	**2**							
Anorexia	**2**							
Risk areas: Visual Skin Type								
Healthy	**0**							
Tissue paper	**1**							
Dry	**1**							
Oedematous	**1**							
Clammy/pyrexial	**1**							
Maceration post birthing pool	**2**							
Discoloured Grade 1 damage (red, purple or blue)	**2**							
Broken areas Grade 2-4 (blister or open wound)	**3**							
Epidural/Spinal								
<2 hours	**4**							
2-4 hours	**5**							
>4 hours	**6**							
Caesarean (only one score in this section)	**5**							

Scores can be discontinued after patient fully mobile

APPENDIX 5

Diabetes								
Gestational – diet controlled	**1**							
Gestational – insulin controlled	**2**							
Pre-existing well controlled	**4**							
Pre-existing poorly controlled	**6**							
Tissue Malnutrition								
Smoking	**1**							
Anaemia Hb<8	**2**							
Single organ failure e.g. Renal, cardiac, severe PIH	**5**							
Multiple organ failure, severe PET	**8**							
Total Below 15; Score 15- 20, Above 20								
Signature								

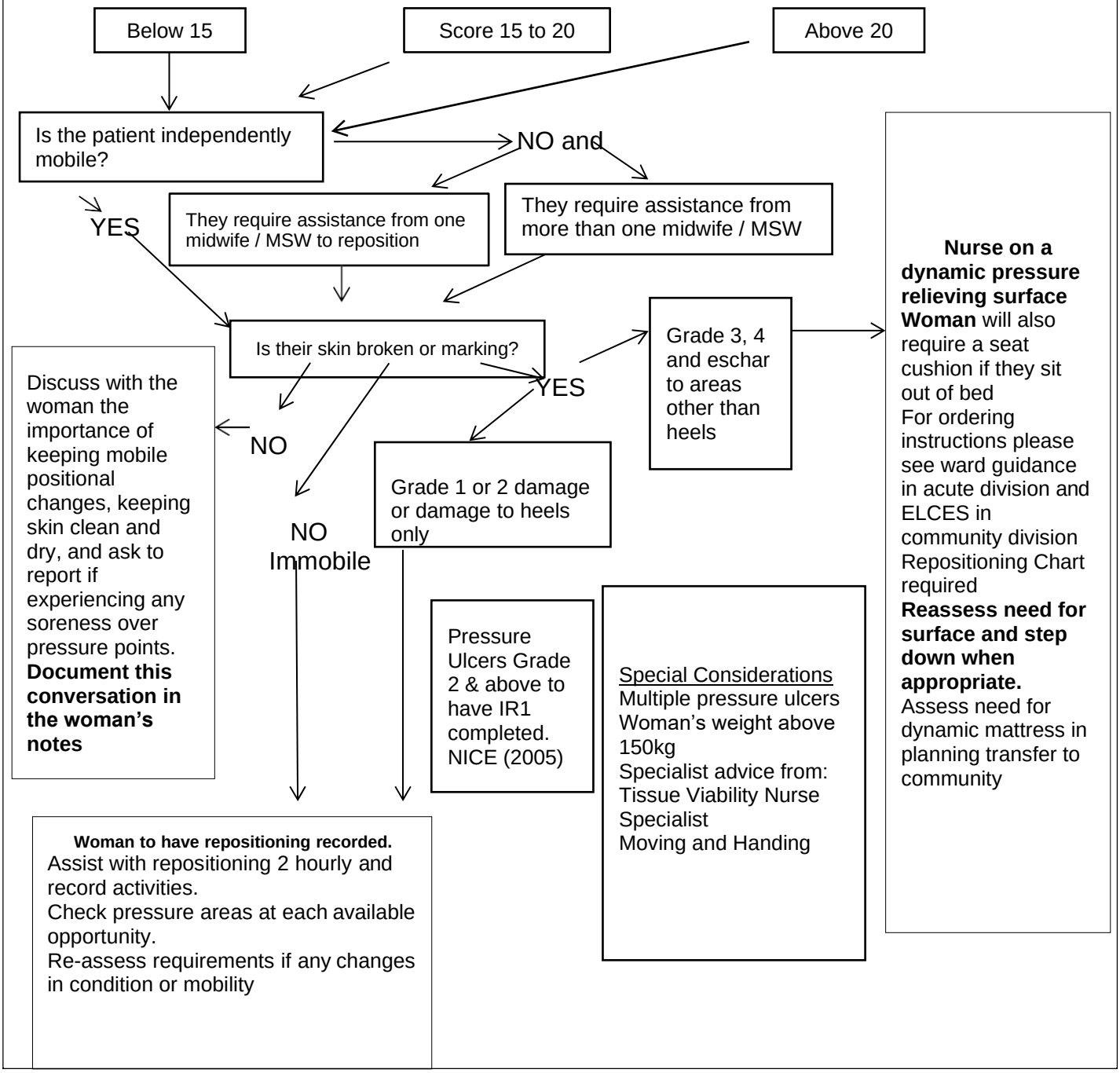
Scores can be discontinued after patient fully mobile

APPENDIX 6

East Lancashire Hospitals NHS Trust

Waterlow Score

Must be calculated and recorded on admission to each ward and when there is a change in condition/mobility. Repeat at least DAILY until fully mobile.



Scores can be discontinued after patient fully mobile

Standard operating procedure for theatre management of obstetric patients with BMI>40kg/m^2

Time	Action
Antenatal clinic	Reweigh at 36+ weeks. Refer for anaesthetic review via Badgernet referral
Booking of Caesarean section	Ensure patient has been reviewed in antenatal anaesthetic clinic.
	Request extra theatre time – book for double slot to permit longer anaesthetic time and longer operating time, where possible.
	Moving and handling assessment – appendix within obesity in pregnancy guideline, to do in antenatal clinic.
	Email theatre co-ordinator and Band 7 co-ordinators to inform of patient's procedure date and allow requests for appliances below. Bariatric appliances: • Bariatric bed and hover mattress • Bariatric wheelchair • Large blood pressure cuff • Appropriate operating table • Table extenders • Hoist and appropriate moving and handling transfer board (Pat slide)
Day of Caesarean section	Check all safe working loads of equipment.
	Consultant to be present for all CS where patient's BMI is 50+, or where requested. Consider extra assistant where possible.
	Extra operating equipment: • Extra surgical drapes • ALEXIS O C-Section retractor (size M/L/XL) • Morris retractor • Large Doyen's retractor • Littlewoods tissue forceps
	Position the patient on the operating table at a 10-15 degree left lateral tilt.
	Open via low transverse skin incision and transverse uterine incision.
	Use Polydioxanone suture (PDS) for rectus sheath closure.
	Subcutaneous fat layer closure via interrupted or continuous suture.
	Prescribe thromboprophylaxis (LMWH) adjusted to body weight.
	Consider extra dose of intra-operative antibiotics
Postnatal period	Assign experienced nursing staff to care for the patient during post-operative recovery.
	Counsel women and encourage postpartum weight reduction prior to future pregnancies.