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APPENDIX A
MANAGEMENT OF CHRONIC HYPERTENSION AND GESTATIONAL HYPERTENSION WITHOUT PROTEINURIA
1. MODERATE AND HIGH RISK OF PRE-ECLAMPSIA PATHWAY | 26
2. CHRONIC HYPERTENSION PATHWAY | 27
3. GESTATIONAL HYPERTENSION PATHWAY (ANTENATAL) | 28
1.0 PHILOSOPHY

Our philosophy is one which is based on respect for pregnancy as a state of health and childbirth as a normal, healthy, physiological process.

The maternity care provided will respect the diversity of women’s needs and the variety of personal and cultural values that women, families and communities bring to these events. Care will be continuous, personal and responsive to a woman’s social and emotional needs.

The professionals involved will encourage decision-making as a shared responsibility between the woman, her family and her care givers. The woman is recognised as the primary decision maker. To facilitate this, care provision must include evidence based information, education and counselling support to enable the woman to make informed choices.

We aim to provide a safe and supportive environment for pregnancy and childbirth. We strive to provide an accessible and excellent service to meet individual needs.

2.0 INTRODUCTION & AIMS OF THE GUIDELINE

This guideline is a practical manual written for doctors and midwives working in the area served by the Homerton. Since 1984, antenatal care has been largely based on community clinics supported by a central Antenatal clinic and Fetal Medicine department at the Homerton Hospital. These community clinics are both ‘shared care’ clinics and ‘midwife led’ clinics. This guideline is intended to help doctors and midwives throughout the district deliver a consistently high standard of care to pregnant women.

Although we have identified specific risk factors and management strategies, it cannot be sufficiently emphasised that individualisation of care is paramount. Each community clinic has a named consultant obstetrician, who is happy to advise midwives and GPs directly when needed. A consultant midwife is also available for referral if the woman has additional midwifery needs.

If the patient’s designated consultant is away, the consultant on call should be consulted with any urgent queries.

At times of prolonged unexpected consultant absence, for example due to illness, a senior registrar or locum consultant would be allocated with the support of the consultant body and high risk cases appropriately assigned.
The Homerton midwives are grouped into 6 zones. Each zone covers a specific geographical area of Hackney. Each woman is allocated to a team according to her postal address, and a member of that team will endeavour to see her at each “midwife” antenatal visit, whether that is in the community or the hospital antenatal clinic. Whenever possible a woman will be seen by her ‘named midwife’ in order to ensure continuity of care.

Specialist midwives are available for specific support in: Infant Feeding; HIV; Haemoglobinopathies; Fetal Welfare; Substance Abuse; Bereavement; Risk management, Smoking Cessation, mental health and antenatal screening.

2.1 CHILDREN’S CENTRES

Children’s Centres are a government initiative which aims to improve the lives of children and families by targeting early health (including pregnancy), education and social support interventions for specific communities and vulnerable families. The emphasis is on collaborative work across health, social and educational agencies.

In Hackney there are numerous Children’s Centre midwives with this important Public Health Profile. The targets for these midwives include: early pregnancy contact for all women in their area (an enhanced ‘booking’ encounter), support for pregnant teenagers, targeted antenatal work and drop in sessions, support for breast feeding initiatives and other postnatal support. The midwives aim to identify and support the most vulnerable women: teenage pregnancies, recent arrivals and asylum seekers, women with mental health issues, women with substance misuse history, and women known to social workers, (Saving Mother’s Lives 2006-2008). These midwives can be accessed via the ANC.

2.2 MIDWIFE LED CARE

Within the team structure there is a well established system for midwifery led care for women at ‘low risk’ of complication in pregnancy and or birth. An antenatal risk check list is used for initial screening for care, but midwives make direct referral for obstetric opinion as necessary. An appropriate plan for care will follow. (See page 7 for specific guidance).

2.3 SUPERVISION OF MIDWIVES

A Supervisor of Midwives is on call 24 hours a day. She/he can be contacted via the Homerton Hospital switchboard.

3.0 PRECONCEPTION

GPs should provide preconceptual care to all women of child bearing age. Rubella and haemoglobinopathy screening should be routinely offered and recorded. Folic acid (low risk 400mcg, high risk such as diabetes, epilepsy, and obesity 5mg) and Vitamin D supplementation (10mcg) should be discussed. General advice on diet and optimal weight, smoking and alcohol should also be available. Women may access this advice directly through the Maternity Helpline. Women at particular risk should receive specific advice, especially those with Diabetes, Epilepsy, severe uncontrolled hypertension and significant mental health problems. Any diabetic woman contemplating pregnancy should be referred to the Obstetric Medicine Clinic at The Homerton on a Wednesday afternoon for pre-conceptual advice and help in optimising glycaemic control. Any further advice with regards to chronic disease and pregnancy may be sought from obstetricquery@homerton.nhs.uk.

4.0 REFERRAL FOR BOOKING

The majority of women are referred by their GP. Women can self refer either by direct contact with the Homerton or via the Maternity Helpline. Some women, particularly those booking late, may be referred by other services. The woman’s GP should be notified if she books directly with a midwife or books
late to avoid child protection issues. All women who do not have a registered GP should be advised to register as soon as possible and information on Find a Doc given to them. All efforts must be made for booking to take place before 12+6 weeks.

Referrals by GPs should be made as soon as pregnancy is confirmed. The electronic referral form should be used for all referrals regardless of risk or where the women will be seen. It is faxed or emailed to the Homerton referral office. If the form is not available electronically GPs should fill in and fax a manual copy of the same form. This form contains crucial information for the Maternity service and forms the basis of good communication. All GPs signed up to the Enhanced Service for Maternity Care are committed to improving this transfer of data. The form contains Past Medical and Obstetric history, information on family, social and cultural needs and what screening has been done preconceptually and already antenatally. The form also indicates if the Combined test has been booked.

The majority of women booking through the Homerton will be seen by midwives and their GP in the community for some if not all their appointments. Some women will be advised, due to increased risk, to have all/some of their care at Homerton ANC. The schedule outlined in 7.0 is for Low Risk Women. All women whose care deviates from this schedule should be offered as flexible and individualised care pathway as possible with explanation at every step why they are considered at higher risk and offered an increased schedule of care; the woman’s GP must be involved in this discussions.
4.1 The Obstetric Medicine Clinic (for women with high risk conditions) OMC

The Obstetric Medicine Clinic takes place at The Homerton every Wednesday afternoon. Three consultant obstetricians (Mr Dorman, Dr Erskine, and Dr Parisaei) attend, with a consultant endocrinologist, diabetic nurse specialist, consultant HIV specialist, Specialist Midwives and a dietician. A consultant physician with special interest in hypertension & a consultant obstetric anaesthetist are also available. All women with pre-existing diabetes or gestational diabetes, endocrine problems, HIV, sickle cell disease, severe hypertension, autoimmune disease, previous VTE or other significant medical problem such as epilepsy should be referred by either their GP or midwife to this clinic, at booking if possible. Women with pre-existing diabetes are welcome to attend for pre-conceptual counselling to optimise their diabetic control prior to conceiving, and receive advice on various aspects, including the taking of folic acid (5mg daily for diabetic women).

5.0 GOAL ORIENTATED ANTENATAL CARE

5.1 FIRST CONTACT with usually GP, may be midwife

- Confirm pregnancy
- Confirm desire to continue pregnancy and discuss any immediate social and psychological needs
- Discuss lifestyle issues and antenatal arrangements
- Provide and refer for stop smoking advice where appropriate
- Provide advice on diet and medication
- Confirm language and cultural issues
- Discuss booking visit and role of blood tests and scan.
- Arrangements for bloods (see list of blood tests below) to be taken to be made during this appointment (by GP or practice nurse/HCA within the next week)
- Discuss and identify risk – social and obstetric – and refer appropriately
- Discuss screening and book combined test or plain ultrasound scan as appropriate
- Refer the woman for a booking appointment in a timely fashion to allow for booking by 12+6 weeks whenever possible.
- Ensure folic acid supplementation is taken at correct dose.

5.2 BOOKING VISIT by the midwife

**Comprehensive history should be taken**

- Obstetric, medical, surgical, mental health, family & social and risks identified and clearly documented with appropriate referral.
- Lifestyle factors-this should include dietary advice regarding Vitamin D and Healthy Start multivitamin supplementation where appropriate, food acquired infections, alcohol consumption and exercise
- Current pregnancy history including choices re: antenatal screening
- Review GP referral letter and previous maternity notes
- Agreed pregnancy care pathway e.g. community based midwifery led care, shared care or hospital based antenatal care with midwives, obstetricians and additional specialist care.
- VTE risk assessment
Investigations: if not already done by the GP

- Full Blood count
- ABO & Rh D group & Antibody Screen
- Random Blood Glucose
- Rubella serology (if not done preconception)
- Syphilis serology
- Hepatitis B serology
- HIV
- Haemoglobinopathy screen (if not done preconception)
- Mid Stream Urine for microbiology
- Low vaginal swab if there is an abnormal discharge
- HIV test should be offered and discussed again if declined previously.
- Dating + combined serum screening (11-14 weeks) if wanted and not already done.
- Serum screening if late booking (14+2 – 20+0) if wanted
- Arrange GTT if RBS ≥ 7.0 mmol/l
- Chlamydia screening for women under 25

Examination

- BMI
- Blood pressure
- Abdominal examination if late booker.
- Heart auscultation. Traditionally, a doctor has auscultated the heart of each woman in early pregnancy. This is a good idea if a woman is new to the UK or has any relevant past medical history. Women booked under MW only care that have no risk factors may not necessarily need cardiac auscultation.

Information

An antenatal information pack should be given to all women at booking. The birthing information pack should be given at 34 weeks, and the postnatal pack within 2 days of delivery.

Booking details are entered onto the electronic patient record (EPR). The booking midwife must print the Booking Summary and file this into the woman’s hand held notes.

Domestic violence is recognised as a contributory factor in maternal death (Why Women Die 2002). The recommended screening questions for mental health should be asked of all women booking for maternity care. Appropriate referral to the Perinatal Mental Health Services should be made. If this is declined this should be documented and the GP informed.

5.3 FOLLOW-UP ANTENATAL VISITS

AT EACH VISIT

- BP with appropriate sized cuff
- Weight – Each trimester
- Urine for protein.
- The fundal height measured in centimetres should be recorded in the notes from 26 weeks
- Fetal heart auscultation from 20 weeks
- Fetal movements should be commented upon
- Fetal presentation should be commented upon from 34 weeks
- The professional should indicate when the next visit should be & with whom; they should also sign and print their name

At each visit the woman and her partner should be encouraged to discuss the pregnancy and any particular anxieties noted.
20 weeks
- Screening for fetal anomalies is offered to all women

26 weeks
- FBC
- RBS
- ABO and RhD Group & antibody screen
- Ensure Rhesus Negative women have been referred to the Rhesus antenatal clinic for the option of prophylactic Anti-D
- If HIV not already tested, repeat the offer

34 weeks
- FBC
- RBS

5.4 RHESUS NEGATIVE WOMEN

When a woman is identified as Rhesus Negative at booking, the results are sent to the Hospital ANC. Hospital appointments are sent out to the women for an injection of Anti-D at 28 weeks. Women should be given the leaflet about Anti-D. (Use of Anti-D Immunoglobulin for Rh Prophylaxis RCOG “Green Top” 1999 guideline NICE Anti D technology appraisal 2008)

6.0 THE MATERNITY NOTES

All women carry their own maternity notes. Some information therefore may need to be recorded in a sensitive manner; relevant information should always also be recorded in the hospital pink notes. Women should be given their notes at booking, and results filed the next time that they are seen.

Well kept up to date notes that are easily accessible to the pregnant woman is of the utmost importance for all health professionals involved. Communication between professionals is equally paramount. GPs, community midwives and the hospital staff are responsible for ensuring they have current channels of communication with their colleagues. (CNST Guidance for Trusts, NHS Litigation Authority). Appropriate filing of all investigations and encounters is vital.

At the booking appointment
- The woman is provided with a copy of her blue antenatal notes which include a summary of her appointments.
- If the woman has delivered previously at the Homerton, the previous health care records should be available at booking if seen in the hospital.
- If the woman is seen in a community clinic, the midwife has access to previous obstetric and medical history via remote access to EPR (which will have information on any care provided by Homerton Hospital, since 2004).
- The midwife will ensure that the patient’s Electronic Patient Record is updated within five days of appointment and the Electronic Booking Summary is completed.

For follow up appointments
- All patients in the Obstetric Medicine Clinic, will be seen with their full patient record (pink notes) as well as hand held antenatal notes
- If the clinician requires pink notes for women seen in the hospital antenatal clinics, they request these from the receptionist who will retrieve them from health care records..
- If notes are required from another hospital this should be discussed with the antenatal clinic team leader.
**SCHEDULE OF ANTENATAL VISITS FOR LOW RISK WOMEN**  
*(Based on NICE 2008)*

<table>
<thead>
<tr>
<th>Weeks of pregnancy</th>
<th>Purpose of Visit</th>
<th>Possible tests or procedures</th>
<th>Place of visit</th>
<th>Which professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 weeks onwards</td>
<td>Confirm pregnancy, initial advice for healthy pregnancy, offer choice of provider, information on referral process and service to expect. Counsel and book combined test</td>
<td>Blood tests MSU</td>
<td>GP</td>
<td>GP or direct contact with Midwife</td>
</tr>
<tr>
<td>6–12 weeks, ideally by 10 weeks (or date of first visit if after 12 weeks)</td>
<td>Initial interview (booking) – full discussion of health, pregnancy (and previous pregnancies), tests available, options for care, hopes and fears</td>
<td>Blood tests MSU, if not already done</td>
<td>Community clinic (CC), GP, Children’s Centre or Hospital ANC (HANC)</td>
<td>Midwife</td>
</tr>
<tr>
<td>11-13+6 weeks</td>
<td>Combined Test if requested</td>
<td>Picton HUH</td>
<td>Midwife &amp; Ultrasonographer &amp; phlebotomist</td>
<td></td>
</tr>
<tr>
<td>16 weeks</td>
<td>Review results of initial blood tests and Combined test, document all results in notes Discuss anomaly scan</td>
<td>CC/GP/HANC</td>
<td>GP or MW</td>
<td></td>
</tr>
<tr>
<td>20 weeks</td>
<td>Review results of anomaly scan Antenatal check. Mat B1</td>
<td>US</td>
<td>CC/GP/HANC</td>
<td>Midwife &amp; Ultrasonographer</td>
</tr>
<tr>
<td>26 weeks</td>
<td>Antenatal check Information on antenatal classes Ensure Rhesus Negative women have been given an Anti-D appointment</td>
<td>Blood tests CC/GP/HANC/home</td>
<td>Midwife</td>
<td></td>
</tr>
<tr>
<td>30 weeks</td>
<td>Antenatal check Discuss antenatal classes</td>
<td>CC/HANC/GP/home</td>
<td>GP or Midwife</td>
<td></td>
</tr>
<tr>
<td>34 weeks</td>
<td>Antenatal check; discuss infant feeding and labour/ birth arrangements</td>
<td>Blood tests CC/GP/HANC/home</td>
<td>Midwife</td>
<td></td>
</tr>
<tr>
<td>36 weeks (first babies only)</td>
<td>Antenatal check Results of blood tests</td>
<td>CC/HANC/GP/home</td>
<td>GP or Midwife</td>
<td></td>
</tr>
<tr>
<td>38 weeks</td>
<td>Antenatal checkDiscuss onset of labour Discuss Sweep</td>
<td>CC/HANC/GP/home</td>
<td>GP or Midwife</td>
<td></td>
</tr>
<tr>
<td>40 weeks (first babies only)</td>
<td>Antenatal Check Discuss plans for labour if overdue Offer Sweep</td>
<td>CC/HANC/GP</td>
<td>GP or Midwife</td>
<td></td>
</tr>
<tr>
<td>41 weeks</td>
<td>Antenatal Check Offer sweep Arrange out-patient IOL for 41+</td>
<td>CC/HANC/GP</td>
<td>GP or Midwife</td>
<td></td>
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- If the community midwife has concerns these will be discussed where possible with the GP and referral made to an obstetrician if necessary.
8.0  RISK FACTORS & SUGGESTED MANAGEMENT PROTOCOLS

The following tables of risk factors and suggested protocols of management were arrived at by consensus of the Obstetricians, Midwives, General Practitioners, Paediatricians, Community Physicians and Pathologists of the Health District. They are not “set in stone”, and have gradually evolved.

Factors below in bold indicate that urgent referral to the consultant is required.

Every woman is different and care must be individualised; these are guidelines only. The consultant should always be involved in significant problems.
Risk assessment is undertaken throughout the antenatal period and individualised care plan will be formulated and documented as necessary.

The obstetrician who sees the women should document in notes if midwifery led care is appropriate. The appropriate place of birth is discussed at booking, due to risk factors in the pregnancy any changes to the place of birth must be documented clearly in the notes.

Advice from an obstetrician is also available via obstetricquery@homerton.nhs.uk.

8.1  Maternal Factors

<table>
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<th>FACTOR</th>
<th>POTENTIAL ADVERSE EFFECTS</th>
<th>SUGGESTED PROGRAMME</th>
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| Age<16                      | ● ↑risk of PET  
● ↑risk of prem labour  
● ↑risk of small baby if smoking  
● reluctance to access services | ● referral to Social Worker  
● ↑visit frequency  
● Consider referral to Children’s Centre MW & cons MW for Public Health |
| Grandmultip (Para 6) (NICE 2008) | ● ↑risk of anaemia  
● ↑risk of unstable lie | ● consider checking ferritin  
● refer to consultant team if unstable lie>37 weeks  
● discuss sterilisation if CS necessary |
| IUCD in situ                | ● ↑risk ectopic/miscarriage  
● ↑risk prem labour | ● GP to remove IUCD if easy and <12 weeks, or scan & consultant referral ASAP |
| Infertility>2yrs Natural/assisted conception Ovum Donation | ● ↑parental anxiety  
● ↑risk of PET with ovum donation & PPH | ● discuss strategies to reduce parental anxiety  
● Consultant led care for those with ovum donation/assisted conception: women to see consultant by 20/40 |
| Fibroid/ovarian cyst at booking | ● pain  
● malpresentation  
● obstructed/prem labour  
● cancer risk | ● consultant referral, urgency as appropriate |
| Unsupported, social problem | ● Poor AN attendance leading to non identification of abnormalities | ● consider Children’s Centre referral for additional support re: engagement with services |
| Domestic Violence           | ● significant ↑risk during pregnancy | ● consider S/W/Children’s Centre/cons MW referral |
| Smoking>5/day, tobacco/cannabis | ● ↑risk IUGR  
● ↑risk prematurity  
● ↑risk abruption | ● Counsel  
● Strongly recommend smoking cessation programme and offer referral to smoking cessation midwife. |
<table>
<thead>
<tr>
<th>FACTOR</th>
<th>POTENTIAL ADVERSE EFFECTS</th>
<th>SUGGESTED PROGRAMME</th>
</tr>
</thead>
</table>
| Hypertension | • Superimposed PET  
• IUGR  
• Abruption  
• Teratogenicity of some drugs | • If on ACE inhibitor change to labetolol asap  
• Booking baseline U&E,  
• Regular urinalysis  
• Consider referral to OMC if poorly controlled or proteinuric at booking  
• ?serial scans  
• See appendix A and full hypertension guidelines for more detailed guidance. |
| Diabetes | • poor pregnancy outcome  
• macrosomia/IUGR  
• poor diabetic control | • refer to Obstetric Medicine Clinic within 2 weeks |
| Heart disease | • ↑cardiovascular demands  
• ?need for warfarin/heparin | • Urgently refer to consultant obstetrician and consultant cardiologist if symptomatic, |
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<th>Condition</th>
<th>Findings</th>
<th>Management</th>
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<td>Sickle Cell Disease</td>
<td>• ↑risk sickle crises</td>
<td>• Specialist MW/nurse referral</td>
</tr>
<tr>
<td></td>
<td>• IUGR</td>
<td>• Joint care Haematology/Obs consultants</td>
</tr>
<tr>
<td></td>
<td>• IUD</td>
<td>• Screen partner</td>
</tr>
<tr>
<td></td>
<td>• ?need for prenatal diagnosis</td>
<td></td>
</tr>
<tr>
<td>Previous thrombosis/Thrombophilia</td>
<td>• Further thrombotic event</td>
<td>• Urgent consultant referral within 2 weeks</td>
</tr>
<tr>
<td>Thyroid disorder</td>
<td>• ?Altered requirements in pregnancy</td>
<td>• Check thyroid function tests at booking &amp; refer to OMC if abnormal; if normal, repeat every 2 months.</td>
</tr>
<tr>
<td>Severe asthma</td>
<td>• May deteriorate in pregnancy</td>
<td>• Consider referral to chest physician particularly if sleep disturbed.</td>
</tr>
<tr>
<td>Cone biopsy /2+loops</td>
<td>• Cervical incompetence</td>
<td>• Refer to consultant by 12 weeks if possible</td>
</tr>
<tr>
<td>Hepatitis B Positive</td>
<td>• Child may be infected</td>
<td>• Refer to Screening Specialist MW</td>
</tr>
<tr>
<td></td>
<td>• Long term implications</td>
<td>• Vaccinations appropriately</td>
</tr>
<tr>
<td>Hepatitis C Positive</td>
<td>• Child may be infected</td>
<td>• Refer to gastroenterologist</td>
</tr>
<tr>
<td></td>
<td>• Long term implications</td>
<td>• Refer baby to paediatrician</td>
</tr>
<tr>
<td>HIV positive</td>
<td>• Child may be infected</td>
<td>• Refer to Specialist Team including Specialist Midwife</td>
</tr>
<tr>
<td>Mental illness</td>
<td>• ↑risk recurrence particularly with bipolar disorders</td>
<td>• Liaise with CPN/social worker/psychiatrist as appropriate</td>
</tr>
<tr>
<td></td>
<td>• child protection issues</td>
<td>• Refer to perinatal mental health team when appropriate.</td>
</tr>
<tr>
<td>History of Medium chain acyl dehydrogenase deficiency (MCADD)</td>
<td>• If parents already have a child who is affected there is a 1:4 chance they could have another baby with the condition. However, any history of MCADD in the extended family of either parent should be investigated. It is advisable that in this situation, parents should be referred to a genetics service for advice.</td>
<td>• Refer to consultant obstetrician</td>
</tr>
<tr>
<td></td>
<td>• Refer to clinical genetics vi the fetal medicine department.</td>
<td>• Doocument history on the yellow neonatal sheet.</td>
</tr>
<tr>
<td></td>
<td>• Doocument history on the yellow neonatal sheet.</td>
<td></td>
</tr>
<tr>
<td>Genetic disorders such as cystic fibrosis, cystic fibrosis, muscular dystrophy,, Gaucher’s disease</td>
<td>• Parents may have an affected child and require counselling regarding the pregnancy . It is advisable that in this situation, parents should be referred to a genetics service for advice</td>
<td>• Refer to consultant obstetrician</td>
</tr>
<tr>
<td></td>
<td>• Refer to fetal medicine department for genetic counselling</td>
<td>• Doocument history on the yellow neonatal sheet.</td>
</tr>
</tbody>
</table>
Abnormal blood antibodies such as anti HPA 1a  
- Risk of fetal anaemia  
- Risk of intrauterine death  
- Refer to fetal medicine department  
- Document history on the yellow neonatal sheet.

### 8.3 Previous Obstetric History

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>POTENTIAL ADVERSE EFFECTS</th>
<th>SUGGESTED PROGRAMME</th>
</tr>
</thead>
</table>
| Stillbirth/NND                              | - Possible recurring factor  
  - Parental anxiety                         | - Consultant referral  
  - ?Involve bereavement team                |
| Congenital abnormality                      | - Possible recurring factor  
  - Possible maternal diabetes  
  - Parental anxiety                         | - Consultant/FMU referral  
  - ?Involve bereavement team                |
| Baby<2.5kgs                                 | - ↑risk this pregnancy  
  - ↑risk gestational diabetes  
  - shoulder dystocia                       | - random glucose each visit  
  - consider GTT                             |
| Baby>4.5kgs (≥4.0 if Asian)                 | - ↑risk this pregnancy  
  - ↑risk this pregnancy  
  - ↑risk maternal diabetes  
  - Parental anxiety                         | - consider Dopplers and scans             |
| ↑BP previous pregnancy                      | - ↑risk this pregnancy                                                                 | - monitor carefully  
  - ↑risk this pregnancy  
  - ↑risk gestational diabetes  
  - shoulder dystocia                       | - refer to consultant if elevated  
  - Consider aspirin 75 mg daily is severe PIH/PET last pregnancy  
  - See appendix A and full hypertension guidelines for more detailed guidance. |
| APH/PPH                                     | - ↑risk this pregnancy                                                                  | - reduce risk factors eg smoking  
  - ↑risk this pregnancy  
  - ↑risk maternal diabetes  
  - Parental anxiety                         | - careful 3rd stage Mx for PPH  
  - consider consultant opinion              |
| 12-24 wk loss/previous cervical suture      | - ?cervical incompetence  
  - ?infected association  
  - parental anxiety                         | - consider cervical suture  
  - consultant referral by 12 weeks if possible |
| Shoulder dystocia/difficult vaginal delivery | - ↑risk recurrence                                                                       | - Request previous delivery notes at booking  
  - ↑risk this pregnancy  
  - ↑risk maternal diabetes  
  - Parental anxiety                         | - consultant review re mode of delivery by 34 weeks                                      |
| Labour <2 hrs                               | - ↑risk this pregnancy  
  - ↑risk maternal diabetes  
  - Parental anxiety                         | - advise parents                                                                          |
| Caesarean or other uterine scar             | - risk of uterine rupture                                                                | - consultant review by 20 weeks, Management plan in notes                            |
| Manual removal of placenta                  | - risk of recurrence                                                                     | - active management of 3rd stage                                                      |
| 3rd degree tear                             | - risk of worsening any residual symptoms  
  - Parental anxiety                         | - Request previous delivery notes and correspondence from perineal clinic  
  - Request previous delivery notes and correspondence from perineal clinic  
  - Consultant review by 34 weeks            |
### 8.4 Booking Examination

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>POTENTIAL ADVERSE EFFECTS</th>
<th>SUGGESTED PROGRAMME</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI &lt;20, &gt;30</td>
<td>● IUGR</td>
<td>● See Obesity Guideline</td>
</tr>
<tr>
<td></td>
<td>● Difficulty assessing growth</td>
<td>● Consider serial scans</td>
</tr>
<tr>
<td></td>
<td>● Diabetes if obese</td>
<td>● Consider dietician</td>
</tr>
<tr>
<td>BP &gt;150/95</td>
<td>● ?essential hypertension</td>
<td>● refer to OMC</td>
</tr>
<tr>
<td></td>
<td>● superimposed PET</td>
<td>● If on ACE inhibitor change to labetolol asap</td>
</tr>
<tr>
<td>Proteinuria</td>
<td>● ?UTI</td>
<td>● MSU</td>
</tr>
<tr>
<td></td>
<td>● ?underlying renal disease</td>
<td>● Urine for Random Protein creatinine ratio.</td>
</tr>
<tr>
<td></td>
<td>● ↑risk adverse obstetric outcome</td>
<td>● Regular urinalysis, consider referral to renal physician</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● ?serial scans</td>
</tr>
</tbody>
</table>
9.0 RESPONSES TO INVESTIGATIONS

When a woman has her booking blood tests taken (including HIV) she should be informed that all results will be given at the next antenatal visit. The only exception to this is when difficulties arise with the tests, in which case she will be contacted directly, or if repeat testing may be required. This possibility should be made clear to the woman.

9.1 Haemoglobin:

Hb, in the absence of a haemoglobinopathy, should be above 10.0 g/dl. Hb is commonly 1-2 grams lower in β thalassaemia, but iron deficiency may be present. If Hb is less than 10 and the MCH<27 or the MCV<80, this may be due to iron deficiency, alpha thalassaemia trait or beta thalassaemia trait. Beta thalassaemia trait will have been diagnosed on the booking haemoglobinopathy screen but there is no specific test for alpha thalassaemia trait, which is a common condition (25% of Afro-Caribbeans). Iron deficiency is suggested by a decreasing Hb and decreasing red cell indices during pregnancy. The cause of a microcytic anaemia can be confirmed by measuring the serum ferritin before starting treatment with iron. Women with beta thalassaemia trait may still become iron deficient. The woman should commence oral iron; if she does not respond to this after 2 weeks consider IM iron. If iron deficient, consider stool examination for ova and parasites. If the MCV is >100fl consider alcohol excess and check vitamin B12 and folate levels.

NICE guidelines recommend:

- At 16 weeks, investigate a haemoglobin level below 11 g/100 ml and consider iron supplements.
- At 28-30 weeks, investigate a haemoglobin level below 10.5 g/100 ml and consider iron supplements.

9.2 Blood Group & Antibody screen

All women should have an ABO & RhD group and antibody screen done at booking & 26 weeks. RhD Negative women should be offered prophylactic Anti-D after CVS, amniocentesis, external cephalic version, after any possible trauma even without evidence of bleeding (e.g. a road traffic accident, falling down) or if there is any bleeding. Anti-D is offered to all Rhesus Negative women at 28 weeks; appointments for this are sent out by The Hospital. (Use of Anti-D Immunoglobulin for Rh Prophylaxis RCOG “Green Top” 1999 guideline; NICE 2002, NICE 2008)

9.3 Rubella Titre

If non-immune, ensure 2 does of the MMR vaccination (NSC 2010) in the puerperium.

If there is a rubella contact, and the mother is non-immune, send two blood samples 10 days apart. If the mother was rubella immune at booking and she comes into contact with rubella subsequently in pregnancy, there is no evidence that repeat infections cause fetal damage.

9.4 Syphilis Serology

All women with a positive result, despite past history of treatment should be referred to the Department of Sexual Health within 10 days of the report date (NSC 2011). A copy of the referral form should be sent to the screening coordinator

9.5 Hepatitis B Serology

All women with a Hepatitis B Surface antigen (HbsAg) detected result should be referred to the gastroenterology team, and should be within 6 weeks of the report date (NSC 2011). Bloods for LFT, ALT and HBV DNA should be taken with consent at the appointment when results are given to the patient.
The Hepatitis B vaccination record (pink form) should be attached to the baby’s yellow sheet which is available in mother’s blue notes.

Colindale Laboratories dispense immunoglobulin/vaccine for the expected baby on a named basis and send this c/o Prof. Costeloe at Homerton NNU.

The “named” immunoglobulin/vaccine is stored in readiness in the small refrigerator in NNU.

Full guidelines on clinical care for Hepatitis B, Syphilis and Rubella are all on the intranet.

9.6 **Haemoglobinopathy screen**

If the woman is found to have a haemoglobinopathy trait she should be referred to the Specialist Midwife/Nurse for genetic counselling and partner testing if this has not already been done in a previous pregnancy. The Specialist Nurse/Midwife is available to assist with the counselling of carriers. First trimester diagnosis is available by chorionic biopsy at 11 weeks. It is therefore important that women are screened as early as possible during pregnancy. If they are found to be carriers, their partners should be screened as soon as possible so that the results of both their tests are available in time to allow first trimester termination should that be requested. If a couple are both carriers and decide to continue with a pregnancy without testing, it is important to mark the notes clearly indicating that they are at risk of having an affected baby and that cord blood should be sent.

9.7 **Raised Random Blood Glucose**

If ≥ than 7.0mM, please arrange a glucose tolerance test.

9.8 **MSU**

If a woman has a urinary tract infection (UTI) at any time during her pregnancy, the urine should be checked at least once more after treatment. If a woman has 3 or more documented UTIs in pregnancy, consider prophylactic antibiotics and 4 weekly MSU checks.

9.9 **Cervical Smear**

If the smear shows candida or trichomonas, treat woman and partner appropriately. If colposcopy is recommended, please refer immediately to the Colposcopy Service.

9.10 **Group B Streptococcus**

The carriage rate in East London is high – approximately 20-25% of pregnant women are colonised; 40-70% of their babies will be colonised, and of these babies, 0.1 - 1% will have a severe potentially fatal disease. We therefore recommend offering treatment during labour with intravenous antibiotics to any woman with GBS found at any stage of the pregnancy either in her urine or on a vaginal swab. Women are informed of the result by letter, and an information leaflet is enclosed. This is not a contraindication to using the Birth Centre. If the woman is symptomatic antenatally, she may be treated, but she should still be treated in labour.
PROBLEMS ARISING IN PREGNANCY

10.1 Mental Illness in Pregnancy

There are now structured questions for professionals to use when booking a woman to elicit a history of mental illness within the Antenatal Notes. If the answer is yes to any of these and there is an emergency concern, the Emergency Clinic may be contacted on 020 85108093 during weekdays, or the liaison service may be contacted via bleep. Non-emergency cases should be referred to the Perinatal Mental Health Service by completing the referral form for Dr McDonald’s team. Whenever possible, discuss with the woman’s GP if there are concerns, as they may have important information regarding a woman’s mental health.

Women with minor/moderate mental health problems should be cared for in primary care. Refer to mental well being guideline on the intranet.

10.2 Chicken Pox in Pregnancy

Approximately 90% of UK born adults are immune. However, when it occurs in adults and especially pregnant women, it carries a risk of fulminating varicella pneumonia which can be extremely serious. If a pregnant woman has a significant chicken pox contact, and has no definite history of chickenpox, she should be tested for Varicella Zoster antibodies (approximately 2/3 of women have antibody despite a negative history of chickenpox). Significant contact is defined as contact in the same room for 15 minutes or more, face-to-face contact and contact in the setting of a large open ward. The UK Advisory Group on Chickenpox considers any close contact during the period of infectiousness to be significant.

Saved serum is usually available from booking bloods in the laboratories if necessary to differentiate from past infection. If the woman is antibody negative, Varicella Zoster Immunoglobulin should be given if available as soon as possible and within 10 days. This does not prevent infection, but may attenuate the disease in pregnant women. It does not prevent congenital varicella syndrome (limb hypoplasia, microcephaly, etc. occurring in <1% of infected pregnant women, commoner if infected in the first 5 months). When supplies of VZIG are short it may not be possible to issue it for pregnant contacts. The incubation period is 7 days from the first contact to 21 days from the last contact, or 28 days if given ZIG. Please ensure that no woman who might have chicken pox is sent to the ANC as she could be putting other pregnant women at risk.

10.3 Itching In Pregnancy

Itching in pregnancy is a common symptom, and usually has no clinical significance. However, it can be associated with obstetric intrahepatic cholestasis, which has important problems associated with it such as fetal distress in labour, meconium staining in labour, PPH and stillbirth. Obstetric cholestasis is diagnosed when otherwise unexplained pruritus occurs in pregnancy with abnormal liver function tests (LFTs) and/or raised bile acids.

If a woman complains of itching in pregnancy in the absence of any obvious underlying cause such as a simple pregnancy rash (pruritic purpura of pregnancy), her LFTs and bile acids should be checked. If these are normal, they should be repeated every 2 weeks as long as the itching persists.

Women with obstetric cholestasis should be booked in for consultant-led care, and give birth in the consultant led delivery suite (RCOG 2011). Ursodeoxycholic acid 500mg bd (UDCA) improves pruritus and liver function in women with obstetric cholestasis. Women should be informed of the lack of robust data concerning protection against stillbirth and safety to the fetus or neonate. Women should be advised that where the prothrombin time is prolonged, the use of water-soluble vitamin K (menadion sodium phosphate) in doses of 5–10 mg daily is indicated. The baby should be considered for Vitamin K (Mazzella et al 2001). Women should be informed of the inability to predict stillbirth if the pregnancy continues beyond 37+0 and induction of labour should be offered.

The woman should see her GP at six weeks post partum for repeat LFTs. These should have normalized. If not she should be referred to a liver specialist.
10.4 **Breech Presentation**

Most babies presenting by the breech in early pregnancy will spontaneously convert to a cephalic presentation. If the baby is a persistent breech ≥ 37 weeks, the mother should be referred to the consultant in ANC. ECVs are carried out on the Delivery Suite. Approximately 50% of babies can be successfully turned. An information leaflet for mothers is available; the mother should be asked to be nil by mouth from midnight, but may drink water and attend Delivery Suite at 09:30 am.

11.0 **ULTRASOUND, COMBINED TEST, AMNIOCENTESIS & CVS**

The parents should be informed that ultrasound scans are recommended to detect fetal abnormalities, as well as to confirm the gestation, placental localisation and growth. In line with BMUS and NICE guidelines, we plan to make it policy to date all women purely on crown rump length (CRL) - provided that this is <84mm or approximately 14 weeks. When a scan has been done <14 weeks there is very clear evidence that the CRL is a better guide to gestational age than even the most certain menstrual dates. With dating later in pregnancy, the recommendation is that we use head circumference as the most reliable parameter.

**Booking or dating scan**

This is best performed at 11-14 weeks. Fetal viability, size, the number of babies (chorionicity) and any obvious abnormalities will be commented upon.

**The Combined Test**

This test is for Down’s syndrome and other chromosomal abnormalities. A nuchal scan between 11 weeks and 2 days and 14 weeks and 1 days (a CRL of 45-84 mm) is performed on the same day as a blood test hence the name Combined Test; from these a risk for Down’s is calculated. If the result is screen positive (risk ≤ 1:150) the woman will be contacted by phone directly by FMU. If screen negative (risk ≥ 1:150) the woman will get a letter confirming this within 2 weeks of the sample date. Women should understand that a “screen negative” results does not guarantee a normal baby. Appointments on the Picton Suite for the Combined Test can be booked by any health or admin staff or self booked by the woman herself.

**Anomaly Scan**

This is usually offered at 20-22 weeks. If parents wish to know the sex of the baby, the ultrasonographer may try to see – correct diagnosis of the sex cannot be guaranteed, and the parents should be aware of this. If any abnormality is noted the woman will be referred to Fetal Medicine Unit. If the placenta is low (as occurs in approximately 10% of women) a repeat scan will be arranged at 32-36 weeks.

**Growth or Late Scan**

This is only arranged to check fetal growth if clinically indicated or if the placenta was thought to be low lying on the anomaly scan at 20 weeks.

**Amniocentesis & Chorionic Villous Sampling (CVS)**

These are used to detect chromosomal abnormality such as Downs syndrome and some other genetic disorders, such as thalassaemia. They may be offered to women with a “screen positive” screening test or in whom fetal abnormalities have been noted on ultrasound, and women with a previous history of a chromosomal abnormality if her screening risk is high. Amniocentesis can be performed usually from 15+ weeks and CVS from 11+ weeks. Please note that the procedure-related miscarriage rate is the same for both procedures (1%) in East London. The FMU Midwife is available to discuss the various options of screening and diagnosis with any woman who is concerned about chromosomal abnormality.
12.0 THE “BARTS” or “QUADRUPLE” TEST

This is a maternal blood test performed between 14+2 and 20+6 weeks of pregnancy by ultrasound dates. A yellow Quadruple test form should be filled in by the referrer and the blood sample should be taken by the phlebotomists at the Homerton antenatal clinic. From the concentration of four hormones and the maternal age, a risk for Down’s syndrome is calculated. The result is called “screen positive” if the risk is greater than 1:200. If a woman’s result is “Screen positive”, she will be contacted by the Fetal Medicine/Assessment Unit Midwife to arrange for counselling and follow up. If the result is “screen negative”, the woman is not routinely contacted. The test is more accurate if there has been a dating scan. Women should not be offered the combined test and the quadruple test. Women who opt for this test should understand that a “screen negative” results does not guarantee a normal baby.

13.0 HIV

It is obligatory on those providing care to offer and recommend HIV testing to all women as an integral part of antenatal care (BHIVA).

If a woman is found to be HIV positive, she will be contacted in writing and asked to visit the ANC to see the specialist midwife with her team midwife when possible; the specialist midwife will then arrange further care. Contact should not be made by telephone. If the woman wished to receive the result of an HIV test earlier than her next appointment, she should be able to request an earlier appointment for this purpose. HIV negative results can be given by the midwives or doctors. Ideally the same person who conducted the pre-test discussion should give these results. This session will include health promotion and how to stay negative. The window period should also be discussed again.

The maintenance of confidentiality is essential. This must be strictly upheld both during the pre-test discussion and in imparting the results. It is necessary to document HIV testing (i.e. whether accepted or declined) in the hand held or hospital notes.

Women who choose not to test early in a pregnancy should be re-offered the test at 26 weeks. The decision of a woman not to have the test must be respected and they should not be discriminated against in any way.

No result should be written in the hand held notes unless previously agreed by the woman. The booking summary will note they are under the care of Lynne Sivyou and Jane Anderson’s team. On the Electronic Patient Record further details can be found in the confidential part section that does not get printed into hand held notes.
14.0 SICKLE CELL DISEASE

These women should receive joint care from the Consultant Obstetrician & Haematologist and the Haemoglobinopathy Specialist Midwife. All women should receive folate supplements and be given advice about simple prophylactic measures such as good hydration, rest and keeping warm. Special attention should be given to detecting and treating infection, which may provoke a sickle cell crisis, and intrauterine growth retardation. An initial growth scan should be done at 26 weeks, and then 4 weekly after. Uterine artery Doppler assessment may be recommended. These women are at a higher risk of pre eclampsia and delivering growth restricted pregnancy. A sickle cell crisis presenting in pregnancy should be managed in the same way as outside of pregnancy; individualised protocols are kept on the Delivery Suite. Consultant haematologist, obstetrician and Specialist midwife should be informed of admissions.

IT IS VITAL THAT RELEVANT INFORMATION IS RECORDED ON THE LABOUR PAGE & IN THE NEONATAL NOTES.

15.0 GLUCOSE TOLERANCE IN PREGNANCY

Women with pre-existing diabetes should be referred immediately to the Obstetric Medicine Clinic; They should be commenced if not already on 5mgs folic acid daily.

Gestational diabetes (GD) was re-defined by the World Health Organisation in 2000 to incorporate what used to be called both gestational diabetes mellitus (GDM), and impaired glucose tolerance in pregnancy (IGT). This recognises that IGT may progress to frank GDM as the pregnancy advances. East London has one of the highest rates of GDM in the country. Women may change from having a normal glucose tolerance test (GTT) to having frank gestational diabetes within a period of weeks. Screening for GDM is therefore undertaken by performing random blood glucose (RBS) at booking, 26 and 34 weeks. 50% of women will have glycosuria at some stage of their pregnancy due to increased glomerular filtration, and therefore urine testing for glucose is not recommended; if glycosuria is noted, it may safely be ignored in the absence of other factors. For some women with risk factors a RBS should be done at every visit.

Risk factors for GDM (requiring RBS at each visit):

- Previous IGT/GDM
- 1st degree relative with diabetes
- Previous baby >4.5kgs (4.0kgs in Asian women)
- Previous unexplained stillbirth or unexplained neonatal death
- Polyhydramnios
- BMI >30

Glucose Tolerance Tests (GTT)

GTTs are time consuming and unpleasant for the mother. They should therefore be targeted to the time when a RBS becomes abnormal (>7.0mmol/l). The test should not be performed simply because a woman has a single risk factor (see above); they can have an entirely normal GTT one week and be frankly diabetic a fortnight later. A poorly targeted GTT can be both falsely reassuring and a waste of resources.

A GTT should be considered, without prior RBS measurement, if a woman develops polyhydramnios.

A normal GTT is defined by a 2 hour plasma glucose <7.8 mmol/l. Women with a two hour of ≥7.8 mmol/l are regarded as having GDM and will need referral to the Wednesday Obstetric Medicine Clinic regardless of gestation.
Action for an abnormal GTT

- All women with GDM should be referred to the Obstetric Medicine Clinic. They will meet a consultant obstetrician and the diabetologist and Diabetic nurse specialists. Dietician are also available.
- Regular ultrasound scans are performed for abdominal circumference measurement and liquor assessment. The frequency is individualised but is usually every 4 weeks from 26 weeks for women requiring insulin.
- Women are given equipment for home blood glucose monitoring and encouraged to test and record their results regularly, aiming for values of 4-7 mM
- Corrected Fructosamine is measured approximately 4-6 weekly (fructosamine is preferred at The Homerton over HBA1C in pregnancy, as there is a high number of women with haemoglobin variants, and it is thought to reflect more recent glycaemic control)
- Early induction of labour is considered.

The management of women with gestational diabetes in labour is in the Delivery Suite Protocol.

All women with GDM should have a GTT performed 3 months postnatally and arrangements should be made for this prior to discharge by the diabetic team.

16.0 HYPERTENSION AND PRE-ECLAMPSIA

Please see appendix A for guidance on managing women with moderate/high risk of pre-eclampsia, chronic hypertension and gestational hypertension.

For full guidance please refer to Pathway for chronic hypertension and gestational hypertension without proteinuria (available on Homerton intranet).

The risk factors for pre-eclampsia include the following:
- Age ≥ 40 yrs
- Nulliparity
- Pregnancy interval of more than 10 years
- Family history of pre-eclampsia
- Previous history of severe pre-eclampsia
- BMI ≥ 30 kg/m²
- Pre-existing hypertension/renal disease
- Multiple pregnancy

BP measurement and urinalysis for protein should be carried out at each antenatal visit to screen for pre-eclampsia. More frequent BP measurements should be considered for pregnant women who have any of the above risk factors.

All pregnant women should be made aware of the need to seek immediate advice from a healthcare professional if they experience symptoms of pre-eclampsia. Symptoms include:
- Severe headache
- Problems with vision such as blurring or flashing before the eyes
- Severe pain just below the ribs
- Vomiting
- Sudden swelling of the face, hands or feet. (NICE 2008)
17.0 TESTS FOR FETO-PLACENTAL WELL BEING

Clinical Assessment

Measurement of the symphysis-fundal height (SFH) from 26 weeks onwards with a tape measure, and recording the finding in centimetres, is a fairly accurate method of clinically assessing uterine growth, particularly if done by the same carer serially. Between 26 and 36 weeks, if the SFH is more than 2 cms different than the gestation in weeks, consider referral for ultrasound assessment.

Maternal weight gain in pregnancy is a poor predictor of fetal growth.

Fetal movement appreciation by the mother is one of the most important predictors of the health of the baby, and women should be asked about movements at each visit from 20 weeks. Kick count charts have not been shown to be useful in a low risk population, but may be useful for some women.

Ultrasound

Routine ultrasound scans for fetal growth in “low risk” women has a poor pick up rate of problem pregnancies. However, if there is a history of a small baby, or if there is a clinical suspicion, an ultrasound assessment may be useful. A reduced liquor volume implies poor utero-placental function, ruptured membranes, or fetal renal problems. An obstetric review should be arranged.

18.0 BMI GUIDELINE

It is well documented that maternal weight gain in pregnancy is a poor predictor of fetal growth. However, BMI calculation is important since low BMI (< 19) can predispose to intra uterine growth retardation and high BMI (>30) can predispose to medical/obstetric complications e.g. diabetes and hypertension. BMI should be calculated at the initial booking appointment.

If BMI<19, serial growth scans should be considered.

Obesity guidelines

Full Obesity in Pregnancy guidelines available on Homerton intranet and ELIC website

If BMI between 30 and 35
Can be managed in community if no other risk factors exist.

Recommendations:
- 5mg Folic acid from 1 month before conception until 14 weeks gestation.
- 10mcg Vit D during pregnancy and breastfeeding
- Random blood glucose every visit. If this is ≥7, a GTT is required
- Weigh in the third trimester if they are keen for delivery on the Birth Centre. This is to ensure there has been no excessive weight gain

The increased risks of gestational diabetes, pre eclampsia, DVT and PE, unsuccessful VBAC (increased risk of uterine rupture and neonatal morbidity), anaesthetic and operative complications during caesarean, postpartum haemorrhage should be discussed and documented.

If BMI over 35 - as above and including
Monitoring for pre-eclampsia (BP and urine) is required at a minimum of 3 weekly intervals between 24 and 32 weeks gestation, and 2 weekly intervals from 32 weeks to delivery, if they have no other risk factors for pre-eclampsia. Extra visits for these observations should be done in the community.

Should deliver on the consultant led delivery suite
If BMI over 40 - as above and including

Give Patient Information Leaflet. This can be downloaded from the Obesity guideline.

Risk Assessment Form (including management plan) to be completed by booking midwife and inserted into hand held notes.

Document and offer an appointment for “Wednesday Club Clinic” to be seen by a Consultant Obstetrician, a Consultant Obstetric Anaesthetist and a midwife.

These women are at high risk of thromboembolism and recommended to have one week of prophylactic Clexane postnatally regardless of mode of delivery.

19.0 MULTIPLE PREGNANCIES

Mothers with multiple pregnancies should be referred to their consultant at diagnosis. Monochorionic twins are usually scanned every 3 weeks. These women require an extra scan at 16 weeks in Fetal Medicine Unit. Dichorionic twins will be scanned every 4 weeks. Twin pregnancies are at increased risk of maternal and fetal morbidity and should be under consultant led care.

20.0 MANAGEMENT OF REDUCED FETAL MOVEMENTS

Maternal perception of fetal movement is a dependable way of monitoring fetal activity; the mother is accustomed to her baby’s pattern of movement; she is the best judge of what is normal for her baby (Dipietro et al, 2001 In the third trimester there are less limb movements and more trunk movements; however a dramatic reduction or complete cessation of fetal movement is not normal (Harrington et al, 1998).

If the pregnancy is less than 26 weeks, the fetal heart should be auscultated; if no abnormalities are found the mother should be reassured.

CTG monitoring may be performed from 26 weeks. If a general examination of the mother has been performed and no abnormalities have been identified and the CTG is reassuring, the woman is discharged. Any further episodes of reduced fetal movements require obstetric review via the fetal welfare unit (09:00-16:30 tel: 0208 5107291/7807)

21.0 POST-DATES PREGNANCY

Consider induction of labour from 41-42 weeks. Offer a sweep at 40 weeks for primips, and at 41 weeks for multips. The exact timing of IOL should take into account the woman’s preferences and local circumstances. (NICE 2008). Low risk women should be offered “out-patient” IOL, with the first Prostin being given on the FWU. If a woman declines induction, she should be referred to a consultant obstetrician. Women over the age of 40, and those with assisted conception, have an increased risk of late stillbirth; induction may be offered from 38 weeks.
22.0 THE POSTNATAL VISIT

This is usually with the GP. If there was an emergency Caesarean section, a major post-partum haemorrhage, or other serious problem, the postnatal visit should be with the consultant. Women who have had a third degree tear will be seen in the Perineal Clinic at 6 weeks; this should be arranged before they leave hospital. This visit should be to ensure that she understands her care, gives her the opportunity to discuss her experience and highlight any problems. With increasing evidence of the wide-spread nature of postnatal depression, and its possible long term effects on the children, every effort should be made to identify women at risk.

It is important to check that women who had gestational diabetes have a GTT at 3 months. Women who have had hypertension and/or proteinuria should have this checked; if there is persistent proteinuria, the woman should be referred to a renal physician.

It is vital that the GP receives information about the labour which may affect future pregnancies, and that women understand what went on. If there is any doubt that a woman may be unclear about the circumstances surrounding her delivery, an appointment should be made for her to see the consultant.

23.0 DNA POLICY

If a woman does not attend her booking appointment, check she has not miscarried and then contact the GP. If a woman does not attend a follow-up appointment after checking she has not delivered, she is sent 2 further appointments. If there are 3 consecutive DNAs or self-cancelled appointments, we attempt to contact the woman by telephone, contact the GP, or ask her midwife to visit. See DNA guideline.

24.0 AUDIT/MONITORING

<table>
<thead>
<tr>
<th>Measurable Policy Objective</th>
<th>Monitoring/Audit</th>
<th>Frequency of monitoring</th>
<th>Responsibility for performing the monitoring</th>
<th>Monitoring reported to which groups/committees, inc responsibility for reviewing action plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appropriate timing of risk assessments and referral when there is a deviation from the norm.</td>
<td>Review of notes and EPR system.</td>
<td>6 monthly</td>
<td>Nominated maternity lead</td>
<td>Multidisciplinary audit meetings Maternity Risk Management meeting</td>
</tr>
<tr>
<td>(See table 8.1 - 8.4)</td>
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<tr>
<td>Documentation of a management plan in the notes.</td>
<td>Review of notes and EPR system.</td>
<td>6 monthly</td>
<td>Nominated maternity lead</td>
<td>Multidisciplinary audit meetings Maternity Risk Management meeting</td>
</tr>
<tr>
<td>Documentation in the notes of when midwifery led care is appropriate,</td>
<td>Review of notes and EPR system.</td>
<td>6 monthly</td>
<td>Nominated maternity lead</td>
<td>Multidisciplinary audit meetings Maternity Risk Management meeting</td>
</tr>
</tbody>
</table>
25 REFERENCES

These guidelines have been reviewed to include the recommendations from:


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APPENDIX A

MANAGEMENT OF CHRONIC HYPERTENSION AND GESTATIONAL HYPERTENSION WITHOUT PROTEINURIA

Please see full guidelines for further information (available on Homerton Intranet)

1. Moderate and high risk of pre-eclampsia pathway

Antenatal care and fetal monitoring

If previous:
- Severe eclampsia
- Pre-eclampsia needing birth before 34 weeks
- Pre-eclampsia with baby’s birth weight < 10th centile
- Intrauterine death
- Placental abruption

Refer for uterine artery dopplers at 22-24/40

Refer for ultrasound of fetal growth, amniotic fluid volume and uterine artery dopplers at 28-30/40 OR at least 2 weeks before previous gestational age of onset of hypertensive disorder if <28/40.

Repeat USS 4 weeks later and discharge if normal

If 1 high risk factor or at least 2 moderate risk factors

Risk Factors for pre-eclampsia

Moderate
- 1st Pregnancy
- Age >40 years
- Pregnancy interval > 10 years
- BMI >35 at 1st visit
- Family history of pre-eclampsia
- Multiple pregnancy

High
- Hypertensive disease during previous pregnancy
- Chronic kidney disease
- Autoimmune disease such as SLE or antiphospholipid syndrome
- Chronic hypertension

Advise women to take Aspirin 75mg/day from 12 weeks until birth*

If fetal activity abnormal, carry out cardiotocography

* Unlicenced indication — obtain and document informed consent
2. Chronic hypertension pathway

**Pre-pregnancy advice**

**Antihypertensive treatment**
Tell women who are taking ACE inhibitors, ARBs or chlorothiazide:
- There is an increased risk of congenital abnormalities if ACE inhibitors or ARBs are taken during pregnancy
- There may be an increased risk of congenital abnormalities and neonatal complications if chlorothiazide is taken during pregnancy
- Limited evidence shows no increased risk of congenital abnormalities with other antihypertensive treatments
- To discuss other antihypertensive treatments with the healthcare professional responsible for managing their hypertension, if they are planning pregnancy

**Dietary sodium**
- Encourage the woman to lower dietary sodium intake or use sodium substitute.

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**Antenatal care**

**Consultations**
Schedule additional appointments based on individual needs

**Timing of birth**
If BP <160/110mmHg with or without antihypertensive treatment:
- Do not offer birth before 37 weeks
- After 37 weeks, timing of and maternal and fetal indications for birth should be agreed between woman and senior obstetrician
- If refractory severe chronic hypertension, offer birth after course of corticosteroids (if required) has been completed

**Antihypertensive treatment**
- Stop ACE inhibitors and ARBs within 2 days of notification of pregnancy and offer alternatives e.g labetalol 200mg t.d.s
- Offer antihypertensive treatment based on pre-existing treatment, side-effect profile and teratogenicity
- Aim for BP < 150/100mmHg
- If target organ damage, aim for BP < 140/90mmHg
- Do not offer treatment to lower DBP to < 80mmHg
- If secondary chronic hypertension, offer referral to obstetric medicine clinic

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**Fetal Monitoring**

**At 28-30 and 30-34 weeks carry out:**
- Ultrasound fetal growth and amniotic fluid volume assessment
- Umbilical artery doppler velocity
If results normal do not repeat after 34 weeks unless clinical indicated

**If fetal activity abnormal carry out:**
- Cardiotocography
- Arrange consultant obstetrician review
3. Gestational hypertension pathway (antenatal)

**Antenatal care**

Carry out full assessment in secondary care
- A healthcare professional trained in the management of hypertensive disorders should carry out the assessment
- Take into account previous history of pre-eclampsia or gestational hypertension, pre-existing vascular or kidney disease, moderate risk factors for pre-eclampsia (see pathway 2) and gestational age at presentation

**Mild Hypertension** (BP 140/90—149/99 mmHg)
- This may be managed by the GP if after 32 weeks.
- Do not admit to hospital
- Do not treat hypertension
- Measure BP no more than weekly
- Test for proteinuria at each visit using an automated reagent-strip reading device or urinary protein:creatinine ratio
- Carry out routine antenatal blood tests
- If presenting before 32 weeks or at high risk of pre-eclampsia: test for proteinuria and measure BP 2 times a week. Once in FWU (Fetal Welfare Unit) and once in consultant antenatal clinic.

**Moderate hypertension** (BP 150/100—159/109 mmHg)
- Do not admit to hospital
- Treat with first line oral labetalol* to keep BP < 150/80-100 mmHg
- BP to be measured twice a week (once in consultant antenatal clinic and once in FWU)
- Test for proteinuria at each visit
- Test kidney function, electrolytes, FBC, transaminases and bilirubin
- No further blood tests if no subsequent proteinuria

**Severe hypertension** (BP > 160/110 mmHg)
- Admit to hospital
- Refer to trust pre-eclampsia guidelines

**Timing of birth**
- Do not offer birth before 37 weeks
- After 37 weeks, timing of and maternal and fetal indications for birth should be agreed between woman and senior obstetrician
- If refractory severe gestational hypertension, offer birth after course of corticosteroids (if required) is completed

In women receiving outpatient care after severe hypertension has been effectively controlled in hospital:
- Measure BP and test for proteinuria twice weekly
- Carry out blood tests weekly

* Offer treatment other than Labetalol only after considering side-effect profile for the woman, fetus and newborn baby. Alternatives include methyldopa and nifedipine