York Hospitals NHS
NHS Foundation Trust

ANTENATAL GUIDELINES FOR COMMUNITY AND DAY SERVICES

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	For Antenatal Appointments and Antenatal Screening Appointments sections please refer to Version 4

VERSION HISTORY LOG

This area should detail the version history for this document. It should detail the key elements of the changes to the versions.

Version	Date approved	Significant changes
1	1994	
2	December 2003	Update of guidelines written by Mr RW Hunter by Midwery Development Team memebers
3	April 2009	Complete overhaul of version 2 with each individual guideline within the full guidelines being referenced and formatting now complying with the Maternity Services 'Development of a Guideline' document.

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1. Introduction & Scope

A wide variety of professionals and services are involved in caring for women of reproductive age and therefore provide care for women who are pregnant These guidelines are designed to provide a framework to enable the consistent provision of high quality, evidence based holistic care to this group when they access services provided by York Hospitals Trust.

These guidelines will mainly be of use for midwives working in the community, ante-natal clinic, ante-natal day assessment unit and ante-natal wards, but will also be a valuable point of reference for a variety of additional groups involved in the provision of ante-natal care or related services (for example GP's Dr's rotating into obstetrics, radiographers, ultra-sonographers, physiotherapists, health care assistants, support workers, nurses working on gynaecology wards etc).

All professionals caring for pregnant women are responsible for their own professional practise and for working within the guidelines detailed in this document. Furthermore, each professional involved in an individuals care is accountable for ensuring they communicate any relevant information with other professionals or agencies as deemed appropriate.

Some of these guidelines within this document need to be read in conjunction with individual policies and procedures which include in depth information on the subject matter e.g. the substance misuse guideline should be read in conjunction with 'Policy and Procedures for the Assessment and Management of Substance Misuse in Pregnancy, Labour and the Puerperium' and will be referenced accordingly.

2. Definitions

Any terminology used within any particular sub-guideline that may require clarification will have a definitions section within it.

3. Guideline Statement and details

The underpinning aim of these guidelines is to ensure a healthy mother and baby and equity of service provision.

These guidelines have been developed following revision of existing local guidelines and are based upon the best available evidence at this time and constitute 'best practise' guidance for the locality. They are intended to provide comprehensive information on the antenatal care of the healthy woman with an uncomplicated singleton pregnancy.

Acknowledgement is given to Mr R.W. Hunter (Consultant Obstetrician & Gynaecologist) whose original guidelines (1994) were used by the Midwifery development Team (MDT) in 2002 as a basis for extended and updated guidelines which were published in December 2003.

These guidelines are divided into the following sub-sections for ease of readability of the full document and accessibility of individual guidelines:

3.1 The booking process
3.2 Antenatal screening
3.3 Common Infections in pregnancy
3.4 Bleeding in pregnancy (& prevention of Rh iso-immunisation)
3.5 Complications of pregnancy
3.6 Maternal illnesses
3.7 Post-term pregnancy
3.8 Miscellaneous
3.9 Referral pathways

3.1 THE BOOKING PROCESS

Once the woman has presented in pregnancy it is the responsibility of the midwifery services to commence antenatal care by providing an initial booking appointment. Ideally this should take place between 8-10 weeks (but no later than 12 completed weeks) of pregnancy and sooner if the woman has complex medical needs, e.g. insulin dependent diabetes (NICE 2008).
Women who present at any gestation after 12 weeks +6 days of pregnancy should be booked within 2 weeks as far as is practicably possible (CEMACH 2007).

Women should receive a 'pre-booking' pack (usually given out by GP's receptionists or can be collected by the woman or her representative from GP surgeries) containing information on the following:

- Safe eating in pregnancy and how to avoid infections
- Antenatal screening for Down's* (including local and national leaflets and phone numbers of centres that offer private nuchal scans)
- Blood testing and screening for haemoglobinopathies*
- Mid-trimester scans*
- Local leaflet to include details on the purpose of the booking process and how to contact a midwife (individual to each surgery)

(All information marked with * is currently available in one leaflet available from national screening committee called 'Screening Tests for you and your baby'.)

The booking appointment is the 1st in a series of risk assessments undertaken in the antenatal period to ensure quality care is provided by the appropriate health professional(s).

3.1.1 CRITERIA FOR MIDWIFE LED CARE

All women with past or present uncomplicated medical or obstetric histories should be offered midwife led models of care. However, the poor value of risk assessment in predicting the outcome of an individual pregnancy should be remembered. Women who are identified as low risk at booking may become high risk during pregnancy or labour. Any woman booked for midwife led care who develops a complication of pregnancy should be referred to a Consultant Obstetrician for assessment, with a referral letter stating the reason for the referral (see section 3.9.3 'Referral flowchart from GP/Midwife to Consultant Care' and 3.9.4 'Referral letter to Consultant'). Depending on the outcome of the assessment, she may remain under the care of the obstetric team or be returned to the care of the named midwife. The consultant team is responsible for completing the lower part of the referral letter sent by the midwife, a copy of which should be returned to the named MW so she is aware of the outcome of the referral.
N.B Jehovah's witness ladies may be booked for midwife led care provided there are no other risk factors. An appointment should be arranged for the woman to be seen by the consultant team after her mid-trimester scan to discuss risk factors associated with declining blood products and to complete relevant paperwork (see appendix K 'Procedure for women who decline blood products').

3.1.2 CRITERIA FOR CONSULTANT LED CARE

The presence of the following risk factors indicates the need for consultant involvement in antenatal care, usually in the form of an initial visit at 16 weeks gestation. In certain circumstances this visit will need to be earlier e.g. mothers with history of thrombo-embolic disorders. Midwives in antenatal clinic who triage the notes will discuss the referral with the appropriate consultant as necessary.

<u>Medical indicators:</u>

- Cardiac disease including hypertension
- Renal disease

- Endocrine disorders
- Liver disorders
- Psychiatric disorders (on medication)
- Previous postnatal depression requiring treatment
- Previous puerperal psychosis
- Haematological disorders, including thrombo-embolic disease
- Autoimmune disorders
- Genetic disorders
- Epilepsy requiring anticonvulsant drugs
- Malignant disease
- Severe asthma
- Drug misuse including alcohol
- HIV, HBV or Hep C positive
- Herpes simplex (of genitalia)
- Obesity (BMI ≥ 35 at 1st contact)
- BMI ≤ 18 at 1st contact
- Anaesthetic difficulties

Obstetric indicators:

- Recurrent miscarriage (3 or more consecutive pregnancy losses or a mid-trimester loss)
- Grand multiparity (more than 5 deliveries)
- More than 6 pregnancies (regardless of parity)
- Previous pre-term birth (<37weeks)
- Severe pre-eclampsia, HELLP syndrome or eclampsia
- Rhesus iso-immunisation or other significant blood group antibodies
- Uterine surgery, including LSCS, myomectomy , (cone biopsy and Lletz if this is the 1st pregnancy following this procedure)
- Retained placenta on 2 occasions
- Previous postpartum haemorrhage
- Stillbirth or neonatal death
- Small for gestational age (less than 5th centile - see appendix C)
- Large for gestational age (greater than 95th centile - see appendix C)
- Babies weighing less than 2500g or more than 4500g
- A baby with congenital anomaly (structural or chromosomal)
- Previous impaired GTT
- Previous 3rd/4th degree tear

Social indicators (more at risk of complications developing):

- Age 40 or more
- Teenagers (<16)
- Women who lack social support (if this impacts directly on the pregnancy)
- Women who smoke heavily (≥ 20/day and decline referral to smoking cessation support)

3.1.3 CRITERIA FOR PLANNED HOME BIRTH

Giving birth is generally very safe for both the woman and her baby and therefore women should be offered the choice on where this is to take place. Among women who plan to give birth at home (or in a midwife-led unit) there is a higher likelihood of a normal birth with less intervention. However women need to be made aware that there is insufficient evidence based information about the possible risks to either the woman or her baby relating to planned place of birth.

Women booked either midwife or consultant led care may request a home birth. However, there are certain instances where it maybe unclear whether a home birth is in the best interests of the woman or her unborn baby and an individual assessment by a Consultant Obstetrician may assist the woman in her decision making.
NB. The feasibility of a home birth in this Trust is based on their being no risk factors present that may put the woman or her baby at significant risk and at the midwifery teams' discretion. A Consultant Obstetrician can only inform the woman that there are no contraindications to a home birth, they cannot prescribe one.

Medical conditions indicating a need for individual assessment (involving a discussion with a consultant obstetrician) when planning place of birth:

- Cardiovascular:
  - Cardiac conditions without intrapartum implications e.g. benign cardiac murmurs
- Haematological:
  - Atypical antibodies not putting the baby at risk of haemolytic disease
  - Sickle cell trait
  - Thalassaemia trait
  - Anaemia - haemoglobin <10.0 g/dl at onset of labour
  - Platelets ≤ 100 (see also section 3.2.21 'screening for low or falling platelets')
- Infective:
  - Hepatitis B/C with normal liver function tests
- Immunological:
  - Non-specific connective tissue disorders
- Endocrinoligical:
  - Unstable hypothyroidism such that a change in treatment is required.
- Skeletal/neurological:
  - Spinal abnormalities
  - Previous fractured pelvis
  - Neurological deficits
- Gastrointestinal:
  - Liver disease without current abnormal liver function
  - Crohn's disease
  - Ulcerative colitis

Other factors indicating a need for individual assessment (involving a discussion with a consultant obstetrician) when planning place of birth:

- Previous complications including:
  - Cone biopsy or large loop excision of the transformation zone (LLETZ)
  - Preterm labour or preterm prelabour rupture of membranes
  - Pre-eclampsia developing at term
  - Placental abruption with good outcome
  - Prolonged labour
  - Previous difficult instrumental delivery
  - Extensive vaginal, cervical or 3rd/4th degree perineal trauma
  - Stillbirth/neonatal death with a known non recurrent cause
  - Previous term baby with jaundice requiring exchange transfusion

- Current pregnancy including:
  - Para 6 or more
  - Ante partum haemorrhage (single episode after 24 weeks gestation)
  - Blood pressure of 140mmHg systolic or 90mmHg diastolic on 2 occasions
  - Clinical or ultrasound suspicion of macrosomia
  - Failure of engagement of fetal head at term in primigravida
  - Post dates if a woman declines IOL by 42 weeks

- Body Mass Index at booking ≤ 18 ≥35 in the absence of any other risk factors
- Under current outpatient psychiatric care
- Recreational drug use
- Smoker ≥20 cigarettes/day
- Age over 40 at booking

- Previous gynaecological history:
  - Fibroids
  - Cone biopsy or large loop excision of the transformation zone (LLETZ)
  - Major gynaecological surgery

- Fetal indications:
  - Family history of disorders with a high risk transmission e.g. Epidermolysis Bullosa
  - Fetal abnormality

- Miscellaneous
  - Height < 150cm (primigravida)

3.1.4 CRITERIA FOR HOSPITAL BIRTH

Medical conditions indicating planned birth at an obstetric unit (due to increased risks):

- Cardiovascular
  - Confirmed cardiac disease
  - Hypertensive disorders
- Respiratory
  - Asthma requiring an increase in treatment or hospital treatment
  - Cystic fibrosis
- Haematological
  - Haemoglobinopathies – sickle-cell disease, beta-thalassaemia major
  - History of thromboembolic disorders
  - Immune thrombocytopenia purpura or other platelet disorder or platelet count below 100
  - Von Willebrand's disease
  - Bleeding disorder in the woman or unborn baby
  - Atypical antibodies which carry a risk of haemolytic disease of the newborn
- Infective
  - Group B streptococcus status whereby antibiotics in labour would be recommended
  - Hepatitis B/C with abnormal liver function tests
  - Carrier of/infected with HIV
  - Toxoplasmosis – women receiving treatment
  - Current active infection of chicken pox/rubella/genital herpes in the woman or baby
  - Tuberculosis under treatment
- Immunological
  - Systemic lupus erythematosus
  - Scleroderma
- Endocrine
  - Hyperthyroidism
  - Diabetes (pre-existing or impaired GTT)
- Renal
  - Abnormal renal function
  - Renal disease requiring supervision by a renal specialist
- Neurological
  - Epilepsy
  - Myasthenia gravis

    - Previous cerebrovascular accident
- Gastrointestinal
    - Liver disease associated with current abnormal liver function tests
- Psychiatric
    - Psychiatric disorder requiring current inpatient care

Other factors indicating planned birth at an obstetric unit (due to increased risks):

- Previous complications:
    - Unexplained stillbirth/neonatal death or previous death related to intrapartum difficulty
    - Previous baby with neonatal encephalopathy
    - Pre-eclampsia requiring preterm birth
    - Placental abruption with adverse outcome
    - Eclampsia
    - Uterine rupture
    - Inverted uterus
    - Primary postpartum haemorrhage requiring additional treatment or blood transfusion
    - Retained placenta requiring manual removal in theatre
    - Caesarean section
    - Shoulder dystocia
    - Rhesus iso-immunisation
    - Previous large baby ≥ 4.5 kg

- Current pregnancy:
    - Multiple birth
    - Recurrent antepartum haemorrhage
    - Placenta praevia
    - Pre-eclampsia or pregnancy-induced hypertension
    - Preterm labour or preterm prelabour rupture of membranes
    - Placental abruption
    - Anaemia – haemoglobin less than 8.5 g/dl at onset of labour
    - Confirmed intrauterine death
    - Post maturity > 42 weeks
    - Infection due to toxoplasmosis, cytomegalovirus or any infection that has a high risk of transmission
    - Substance misuse
    - Alcohol dependency requiring assessment or treatment
    - Onset of gestational diabetes
    - Malpresentation – breech or transverse lie
    - Body mass index at booking of greater than 35 kg/m^2
    - Primigravida age ≤16

- Fetal indications:
    - Small for gestational age in this pregnancy (less than fifth centile or reduced growth velocity on ultrasound)
    - Abnormal fetal heart rate (FHR)/Doppler studies
    - Ultrasound diagnosis of oligo-/polyhydramnios

- Previous gynaecological history:
    - Myomectomy
    - Hysterotomy
    - Uterine abnormalities

References:

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

National Institute for Clinical Excellence (NICE) 2007: Clinical guideline 55:
Intrapartum care: care of healthy women and their babies during childbirth London.

National Institute for Clinical Excellence (NICE) 2008: Clinical guideline 62:
Antenatal care: Routine care for the healthy pregnant woman. London.

3.1.5 FREQUENCY OF ANTENATAL VISITS FOR LOW RISK WOMEN

The following are based on NICE Guidelines (2008) but differ slightly to reflect local Consultant opinion and Trust requirements. Patient choice also needs to be considered when discussing frequency of appointments with women. The pregnancy planner on page 10 of the hand held notes should be completed at the booking appointment.

NULLIPAROUS		**MULTIPS**
Booking visit (8-10 weeks) but no later than 12w+6d		Booking visit (8-10 weeks) but no later than 12w+6d
Nhs Dating scan 10 - 14 weeks Nuchal Scan (if applicable)11w+ 0d – 13w+ 6d Triple Test (if applicable) 15w – 19w+ 6d		Nhs Dating scan 10 - 14 Nuchal Scan (if applicable)11w+ 0d – 13w+ 6d Triple Test (if applicable) 15w – 19w+6d
16 weeks		16 weeks
18 - 21 weeks mid trimester scan		18 - 21 weeks mid trimester scan
24 - 25 weeks		
28 weeks		28 weeks
31 weeks		31 weeks (only for those women who have a gap of ≥ 10 yrs between pregnancies)
34 weeks		34 weeks
36 weeks (for presentation check)		36 weeks (for presentation check)
38 weeks		38 weeks
40 weeks (for membrane sweep)		40 weeks (for membrane sweep
41 weeks (for membrane sweep)		41 weeks (for membrane sweep)

N.B Women with a new partner **do not** need to be seen as per the nulliparous regime; neither do multiparous women who have had a previous LSCS at term unless it has been as a result of medical complications e.g. pre-eclampsia. As pre-eclampsia does not usually develop until 3rd trimester, women with a history of this condition (regardless of type of delivery) do not need to be seen at 24w unless they are otherwise unwell or the pre-eclampsia was early onset and fulminating.
In general, a 24 week appointment for a multiparous lady with no **current** medical or obstetric complications is unnecessary. The main exception to this would be women who are vulnerable or have a history of mental health problems. Where there have been past medical or obstetric problems, individualised patterns of care and frequency of visits will be decided by the consultant team in conjunction with the woman.

Pre-booking:

Women should receive written information for discussion at booking visit on the folowing:-

- Safe eating in pregnancy and how to avoid infections
- Blood testing for infections and screening for haemoglobinopathies
- Screening for Down's syndrome, (local and national information leaflets, including contact details of centres that offer private nuchal scans)
- Mid trimester scans
- Welcome leaflet/pamphlet including introduction to midwifery service and choice of place of birth (individual to each surgery).

N.B The latest national leaflet contains information on **all** antenatal and neonatal screening (including mid-trimester scans). Remind the woman at her booking appt to keep this leaflet safe for reference later on.

Document in the hand held notes (page 7) whether this information was received pre-booking or at booking at the woman's first appointment.

Booking visit:

Preferably should take place between 8 – 10 weeks gestation and no later than 12 completed weeks (12w+6d). If a woman presents in pregnancy at ≥ 13weeks then every effort should be made to book her within 2 weeks.

The booking visit is the first in a series of antenatal risk assessments and its purpose is to:-

- Identify past and current medical and obstetric problems and refer as needed**.**
- Identify any previous or current mental health problems including those who may be at risk.
- Identify any past problems with baby/fetus.
- Identify those women who will need early GTT e.g. previous impaired GTT
- Identify those women with a past history of Group B Haemolytic Streptococcal infections. (Place a yellow, GBS sticker on the front of the hand held notes and write 'PAST', date and sign.)
- Identify whether the woman has had chicken pox
- Identify preferred lead professional and plan pattern of care for pregnancy
- Identify preferred place of birth
- Relay information regarding diet, folic acid***** and Vitamin D****** supplementation

  *****Women with epilepsy or Type 1 diabetes should be given 5mg folic acid

  ******Vitamin D should be recommended at 10mcg/day for those women at risk of deficiency (NICE 2008) e.g.
  - women of S. Asian, African, Caribbean or Middle Eastern family origin
  - women who have limited exposure to sunlight i.e. those who are housebound or usually remain covered when outdoors
  - women who eat a diet particularly low in Vit D such as women who consume no oily fish, eggs, meat, fortified D margarine or breakfast cereal
  - women with a pre-pregnancy body mass index of >30kgm/m^2

  N.B. *There is no single Vitamin D supplement available on prescription. However, there are some combined Vitamin D and calcium supplements that contain 10mcg Vitamin D and 500-600mg of calcium that the DOH (2009) can recommend GP's to prescribe. These include the following preparations: - Adacal -3; Cacit –D3; Calceos, Calcichew –D3 Forte and Natecal –D3. These preparations are suitable for both pregnant and breastfeeding women and this level of calcium is not considered to be harmful for short term use, as in these instances. Healthy start women's vitamins are a suitable alternative in those Trusts where these are issued.*
- Relay information on smoking, dental care, antenatal screening, antenatal classes, exercise in pregnancy and state maternity benefits
- Record personal details, medical, family, social and obstetric history
- Arrange scan(s) and perform weight, height, BMI, blood pressure and urinalysis.
- Offer screening for asymptomatic bacteriuria (if booking before 14 weeks)

- Inform pregnant women younger than 25 years about the high prevalence of Chlamydia infection in their age group, and give details of their local National Chlamydia Screening Programme
- Offer chance to discuss any information (written or verbal) that has been received
- Take blood (provided consent given) for routine booking investigations including FBC, group and antibody screen, syphilis screen, rubella antibodies, HIV, Hepatitis B, haemoglobinopathies (thalassaemia and depending on ethnicity, sickle cell) and chicken pox antibody status if unknown.

If the booking visit takes place close to EDD (≥ 37 weeks) the bloods should be sent as URGENT.

- Complete family origin questionnaire form

Document all findings on the appropriate pages in the hand held notes. The management plan on page 11 must be started and any risks highlighted in the special features section on page 15.
For women who book >12 weeks and 6 days additionally complete appendix J and send it together with the hand held notes into medical records.

Issue the following:-

- Health Education Pregnancy Book (if available) to nulliparous women. This is also available on-line at www.preg.org.uk for those women who have access to a computer.
- 'Pregnant …using alcohol or drugs?' leaflet if appropriate.
- 'Healthy start' (milk and vitamins voucher scheme) to all eligible
- Pregnancy and Obesity Leaflet (York Trust one) for those with a BMI ≥ 30.
- FW8 form for free prescriptions and NHS dental care (for those with an NHS dentist)
- Emma's Diary and Bounty Pack may be offered

A full medical examination of heart and lungs should be carried out by GP ideally before 16 weeks gestation on all primigravid women, multiparous women (if there is no documentation that this had been carried out in the UK during a first pregnancy) and on women entering the country later in pregnancy.

Return appointments:
All return appointments are a continuation of the risk assessment process commenced at booking. A review of the management plan should be made at each visit and any changes clearly documented. An audit of the antenatal risk assessment process will be undertaken as per the audit plan. If any woman presents at a returns appointment without her hand held notes, refer to appendix K 'Procedure for Women Who Attend Antenatal or a Community Clinic without Handheld Pregnancy Records'

10-14 weeks visit: (for all women)
An appointment for a dating scan should ideally be offered within this gestation period but any scan performed at ≥ 8 weeks is appropriate for dating (NSC 2007).

If no Down's screening discussion is requested then a dating scan only with no contact with a screening midwife will be given.

If a Down's screening discussion is required, then the woman will be given an appointment to see the screening midwife straight after her dating scan. The results of all antenatal screening blood tests should be given to the woman by the screening midwife if available, at this appointment.

16 week visit: (for all women)

- Record, review and discuss results with the woman of all screening tests undertaken at booking, including blood results. Refer to the appropriate clinician in a timely manner if any results are outside the 'normal' range.
- Investigate a haemoglobin level below 11 g/100 ml by requesting ferritin, B12 and folate levels. Depending upon the results further treatment and/or iron supplementation may be needed.

- Reassess planned pattern of care for the pregnancy and identify women who need additional care
- Measure BP & test urine.
- Listen to fetal heart.
- Give information leaflet on Rhesus antibodies & routine prophylactic use of Anti D.(if applicable)
- Give information on early bird session with physiotherapist.
- Give information guide produced by FSA 'The parent's guide to money'
- Offer chance to discuss any information (written or verbal) that has been received

18 – 21 week visit: (for all women)
This is a hospital appointment for anomaly ultrasound scan & to determine placental site.
N.B: If placenta found touching or covering the internal os, a repeat scan will be arranged for 34 weeks

- Measure BP and test urine
- Give information leaflets on travel safety, seat belts, and pre-eclampsia.
- Offer Chlamydia screening to women under the age of 25.
- Arrange GTT for 26 weeks if applicable
- Arrange prophylactic Anti D for 28 weeks if applicable
- Give Mat B1 form
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Give VBAC leaflet to those women who have had a previous LSCS for further discussion at the 36w appt

24 – 25 week visit: (for nulliparous women only or vulnerable women/ women with mental health needs)
PET screen (blood pressure and urinalysis)

- Measure and record symphysis – fundal height
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Encourage women to book antenatal classes.
- 'Health in Pregnancy Grant' form can be issued for those ≥ 25 weeks

28 week visit (for all women)
PET (blood pressure and urinalysis) and IUGR screen

- Check FBC, and antibodies for all women
- Offer Anti-D prophylaxis for Rh negative women
- Measure and record symphysis – fundal height
- If smoker, reassess cessation plan
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Give verbal and written information on Vitamin K, information for admission into hospital, pain relief, coping strategies, use of pool for labour, positions in labour, breast feeding workshops and issue the breast feeding DVD. Additionally give the leaflet 'Caring for a baby with drug withdrawal symptoms' if applicable.
- Offer chance to discuss any information (written or verbal) that has been received
- Check if the woman has booked antenatal classes – if she declines them, write 'declined' on page
- Remind the woman to read the section on the newborn hearing test and neonatal metabolic screening in the booklet she was given at booking
- Issue the 'Health in Pregnancy Grant' form if not already done

31 week visit (for all nulliparous women and multiparous women **IF** they have ≥10 years between pregnancies)
PET screen, (blood pressure and urinalysis)

- Measure and record symphysis – fundal height

- Review, discuss and record the results of screening tests undertaken at 28 weeks. Commence oral iron supplementation if Hb ≤105g/l
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Offer chance to discuss any information (written or verbal) that has been received

34 week visit (for all women)
PET (blood pressure and urinalysis) and IUGR screen

- Measure and record symphysis – fundal height
- Review, discuss and record the results of screening tests undertaken at 28 weeks (for multips not seen at 31 weeks)
- Check FBC if iron therapy commenced at 28 weeks
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- If smoker, reassess cessation plan.
- Offer chance to discuss any information (written or verbal) that has been received

36 week visit: (for all women)
PET (blood pressure and urinalysis) and IUGR screen

- Measure and record symphysis – fundal height
- Check FBC for those women who have not needed it checking since 28 weeks
- Rh antibody check for those women who declined prophylactic anti-D at 28 weeks
- Check presentation.
- For women whose babies are in the breech presentation, offer external cephalic version (ECV), unless contraindicated.
- Reassess planned pattern of care for the pregnancy and identify women who need additional care
- Perform maternal weight and document clearly
- Discuss birth plan and mode of delivery
- Discuss VBAC if appropriate (information leaflet given at 18-21w appt)
- Give LSCS leaflet to those women booked for Elective Caesarean
- Offer chance to discuss any information (written or verbal) that has been received

38 week visit (for all women)
PET (blood pressure and urinalysis) IUGR and presentation screen

- Measure and record symphysis – fundal height
- Review, discuss and record the results of any tests undertaken at 36 weeks. Implement any treatment as necessary
- Perform maternal weight and document clearly (if not done at 36w)
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Offer chance to discuss any information (written or verbal) that has been received

40 week visit (for all women)
PET (blood pressure and urinalysis) IUGR and presentation screen

- Measure and record symphysis – fundal height
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Discuss management of prolonged pregnancy
- Offer membrane sweep.
- Give IOL information leaflet and commence IOL checklist
- Offer chance to discuss any information (written or verbal) that has been received

41 week visit (for all women)
Increased fetal surveillance, PET (blood pressure and urinalysis) IUGR and presentation screen

- Measure and record symphysis – fundal height
- Reassess planned pattern of care for the pregnancy and identify women who need additional care.
- Offer membrane sweep
- Discuss any issues arising from written IOL information given at last appt
- Arrange IOL for 40+10 – 40+14 once past 40+5
- Offer chance to discuss any information (written or verbal) that has been received

N.B if any woman does not attend (DNA's) for any appointment in the antenatal period, please refer to Appendix L

References:

Department of Health (DOH) 2009 [online] available at http://www.dh.gov.uk/en/Healthcare/Maternity/Maternalandinfantnutrition/DH_4112476 [Accessed on 27.2.2009]

National Institute for Health and Clinical Excellence (NICE) 2006: Clinical Guideline55: *Intrapartum care: Care of healthy women and their babies during childbirth.* London.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman.* London.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 63: *Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the postnatal period.* London.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 70: *Induction of Labour.* London

Group B Strep Support (GBSS) 2008: Preventing GBS infection in newborn babies: Detailed leaflet: *For women who carry GBS (06/08)*

UK National Screening Committee (2007): Antenatal Screening – Working Standards for Down's syndrome Screening. NHS.

3.1.6 MONITORING COMPLIANCE OF THE GUIDELINE

In order to monitor compliance with this guideline, this guideline will be monitored as follows:

Minimum requirements	Evidenced	CNST standard
a) timing of risk assessments	Notes review	4.3 a)
b) booking visit and notes completed by 12 weeks of pregnancy (12w+6d)	Maternity dashboard	4.1 b)
c) booking visits ≥ 13w are seen within 2 weeks of referral	Appendix J proforma and maternity dashboard	4.1 c)
d) medical conditions considered, including anaesthetic history	Notes review	4.3 b)
e) factors from previous pregnancies	Notes review	4.3 c)
f) lifestyle history considered	Notes review	4.3 d)
g) identification of women who decline blood and blood products	Notes review	4.3 e)
h) identification of women who are at risk or have current mental health problems	Notes review	4.6 a)
i) Evidence of communication between maternity services and mental health teams where appropriate	Notes review	4.6 d)
j) full medical examination for those who have no documentation of this being undertaken in UK	Notes review	4.1 d)
k) risk assessment for appropriate place of birth	Notes review	4.3 f)
l) referral process for those in whom risks are identified	Notes review	4.3 h)
m) evidence of documented management plan for women in whom risks are identified	Notes review	4.3 g) and 4.6 c)
n) process for referral back to midwife led care if appropriate	Notes review	4.3 i)
o) discussion and provision of information to women as clinically indicated in relation to:- • Place of birth options including information on locally provided services • Antenatal screening tests • Induction of labour • Pain management in labour (including regional anaesthesia) • Vitamin K prophylaxis • Vaginal birth following caesarean section (if appropriate) • Elective caesarean sections (if appropriate)	Notes review	4.4 d)
p) women who miss antenatal appointments are followed up and then subsequently seen	Notes review	4.2 b and c)

This will be monitored as part of the annual audit programme

3.2. ANTENATAL SCREENING (AIMS AND OBJECTIVES)

Aims of antenatal screening:

- To offer screening to all pregnant women attending for antenatal care or delivery within the area covered by the York Hospitals Foundation Trust.

- To provide adequate high quality information on the screening process to support each woman to make an informed decision on whether to accept or decline the offer of screening.

- Provision of adequate information and support to enable the woman and her partner to make a decision on the management and outcome of the pregnancy.

- For women with a confirmed case of infection as a result of screening, or with a pre-existing condition, provide optimal management of maternal health and interventions to reduce the risk of vertical and sexual transmission.

- For women with a confirmed case of infection as the result of screening, provide optimal management of the pregnancy, birth and newborn period.

- To identify babies at risk of acquiring infection in order to instigate appropriate management of immunisation strategies.

- For women with a confirmed case of infection as a result of screening who opt for termination of pregnancy, to provide the optimal care and support including bereavement counselling.

Objectives

- To identify and offer screening to all eligible women.

- To provide all women with appropriate support and information at all stages of the screening programme. Information to be available in writing and other formats that meet national standards.

- To process and report on screening tests in a timely manner to support appropriate management of care.

- To offer screening tests as an integral part of antenatal care during their first and **each** subsequent pregnancy in line with national standards.

- To ensure all women are offered screening regardless of gestation. This should include pregnant women presenting in labour who have not received antenatal care elsewhere.

- To ensure disease specific confirmatory testing is offered to all women with screen positive results in line with national standards.

- To provide appropriate information and support for women with a confirmed diagnosis.

- To ensure appropriate referral to agencies responsible for long-term health and social care management.

- To promote an appropriate level of knowledge for all health professionals involved in the screening programme as recommended by the UKNSC.

- To minimise the adverse effects of screening: anxiety, misunderstanding, inaccurate information, unnecessary investigation and follow-up, and inappropriate disclosure of patient specific information.

- To have in place systems for risk assessment and management of adverse incidents occurring during the screening process.

- To have in place effective and robust audit and monitoring processes in line with clinical governance arrangements to improve quality.

- To participate in routine monitoring of the screening programmes to include data collection as specified in national standards.

- To ensure care pathways exist with clear lines of responsibility for acute / primary care sectors to ensure full population coverage of vaccination / immunisation programmes for mothers and babies as appropriate

3.2.1 ANTENATAL SCREENING AND DIAGNOSIS OF DOWN'S SYNDROME

All women, what ever their age, have a small risk of delivering a baby with Down's syndrome, though it increases with the age of the mother. It is caused by the presence of an extra chromosome in the genetic material present in each cell of the baby, so each cell contains 47 chromosomes instead of the usual 46. These chromosomes are vital for the normal function of the body, with the extra chromosome in Down's syndrome leading to physical and mental handicap of varying degrees

Risk of Down's syndrome at term according to maternal age: (Cuckle et al 1987)

Age	Risk	Age	Risk
20	1 in 1527	37	1 in 218
25	1 in 1352	38	1 in 167
30	1 in 895	39	1 in 126
31	1 in 776	40	1 in 97
32	1 in 659	41	1 in 73
33	1 in 547	42	1 in 55
34	1 in 446	43	1 in 41
35	1 in 356	44	1 in 30
36	1 in 280	45	1 in 23

It is possible to estimate the individual risk for each woman of having a baby with Down's syndrome. This is done with a screening test. Women at high risk may choose to have a diagnostic test to determine if the baby is really affected.

Screening Tests:

These estimate the individual risk for each woman of having a baby with Down's syndrome. A screening test will identify women at a low risk (screen negative), or women at a high risk (screen positive) of having a baby with Down's syndrome. The result will be in the form of a statistical estimation of risk with a cut off set at one in 200 (1:200) on a triple test and one in 150 (1: 150) on a nuchal translucency scan.

Therefore: A result of 1:201 (on triple test) or 1:151 (on nuchal scan) or any number greater than this is a low risk, (e.g. 1:400)

A result of 1:200 (on triple test) and 1:150 (on nuchal scan) and any number smaller than this is a high risk, (e.g.1:20).

However, a low risk does not guarantee the baby will not have Down's syndrome, and a high risk result does not mean the baby will be affected. Women at high risk are offered a diagnostic test to determine if the baby is really affected, but it is their choice as to whether they wish to proceed further with testing.

Screening tests available in York:

<u>Dating scan at 10 – 14 weeks</u>

Offered to all pregnant women ideally between 10-14 weeks, but accuracy is not greatly affected if done slightly outside this range. This will be used to confirm viability, detect multiple pregnancies early and to date the pregnancy to calculate the estimated date of delivery. This is in lieu of the LMP to calculate the EDD. If an early scan has already been performed for some other reason with written documentation, and the gestation is 8 weeks or more, the EDD can be calculated from this, so a further dating scan is not required.

Nuchal Translucency Scan (NT Scan) at 11 – 13+6 weeks

This is a scan in which the fluid under the skin at the back of the baby's neck (nuchal translucency) is measured. In babies with Down's syndrome more fluid may collect under the skin at the back of the baby's neck than in babies with normal chromosomes. Therefore the nuchal translucency tends to be thicker, so measuring this can give an indication of risk. Around 75% of babies with Down's syndrome will be identified as high risk by this method. This is not available on the NHS in York at present, so all women have to pay for this service and prices vary. Midwives or GPs can give the ladies the telephone numbers to self refer.
N.B. Women who themselves have had a previous pregnancy affected by Down's syndrome, or some other chromosome abnormalities, can have a nuchal translucency scan on the NHS. Referral to Mr Dwyer or Mr Jibodu at York Hospital will be needed

Telephone Numbers:

York Pregnancy Care	01904 520102
Leeds Nuffield	0113 3882067
Genome Screening services	0113 2849237

Nuchal Translucency scan and Blood Test

This is available to everyone but an extra fee is charged in addition to that of the Nuchal Translucency scan. The addition of the blood test to the NT scan means that around 85% of babies with Down's syndrome can be identified as high risk by this method

Triple Test at 15 – 19 weeks and 6 days

This test is offered free to all women booking In York. It is a maternal blood test taken from 15 weeks gestation by scan. It measures three substances in the woman's blood made by the pregnancy: Alpha-fetoprotein (AFP), free beta human chorionic gonadotrophin (free b-hCG) and unconjugated oestriol (uE3). Around 70% of babies with Down's syndrome will be identified as high risk by this method. If any further information is required, please contact the antenatal screening co-ordinators.

Ultrasound Scan at 18 – 20+6 weeks

This scan is offered to all pregnant women where a detailed assessment of the baby's anatomy is performed. Around 50% of babies with Down's syndrome will show some physical characteristics on the scan indicating the baby is at higher risk of having Down's syndrome. Approximately 50% of Down's syndrome babies will have normal-looking anatomy; therefore Down's syndrome cannot be diagnosed on scan.

Diagnostic Tests:

A screening test can only assess the level of risk of a pregnancy being affected by Down's syndrome for a particular individual. An accurate diagnosis of the condition can only be obtained from a diagnostic test. Therefore women found to be at high risk for Down's syndrome on a screening test will be offered a diagnostic test. There are two diagnostic tests: Amniocentesis (Amnio) and Chorionic Villus Sampling (CVS). Both tests give an accurate diagnosis, however both tests have a risk of miscarriage.

Amniocentesis from 15 weeks

This test is available in York. It involves passing a fine needle through the maternal abdominal wall, under scan control, and drawing of approximately 15mls of amniotic fluid with a syringe. In most cases the fluid is analysed by Quantitative Fluorescent Polymerase Chain Reaction (QFPCR). An accurate result for Down's syndrome (trisomy 21), Edward's syndrome (trisomy 18) and Patau's syndrome (trisomy 13) is usually available in 2 working days. If other chromosomal disorders are suspected a full

karyotype may be requested in which more of the chromosomes are checked. In this case a final result takes approximately 2 weeks. Rarely at amniocentesis a sample cannot be obtained or the cells obtained do not give a result. In this situation the test can be repeated. The risk of miscarriage is 0.5-1% (1 in100-200).

Chorionic Villus Sampling from 12 weeks

This test is performed in Leeds and involves taking a biopsy of placental tissue with a needle and syringe, usually trans abdominally, under scan control. Results and possible technical difficulties are as for amnio. However, with CVS, a full karyotype is routinely done and is available in 2-3 weeks in addition to the rapid result for trisosmy's 13, 18 and 21.The miscarriage risk for CVS is thought to be slightly greater than for amnio at around 1% (1 in 100) as compared to the 0.5-1% for amnio (1 in 100-200).

A normal chromosome result on diagnostic test does not guarantee a normal baby. There are many other causes of disability, which cannot be detected by these tests.

N.B. Diagnostic testing should NOT routinely be offered unless there is a high risk screening test result. Women ≥ 38 years of age who REQUEST diagnostic testing (without having had a screening test 1st) may be offered one on the NHS.

For any further information contact the antenatal screening co-ordinators, Bev Frost
or Moira Brown on 01904 725347

References:

Cuckle H.S, Wald N.J, Thompson S.G (1987) '*Estimating a woman's risk of having a pregnancy associated with Down's syndrome using her age and serum alpha-fetoprotein level'*
Department of Environmental and Preventive Medicine, The Medical College of St Bartholomew's Hospital, London

DOH (2004) *Maternity care component of the NSF document*. London

DOH (2004) *Better information, better choices, better health: Putting information at the centre of healthcare*. London.

DOH (2008) NHS Fetal Anomaly Screening Programme-Screening for Down's syndrome: UK NSC Policy recommendations 2007-2010: Model of Best practice. London.

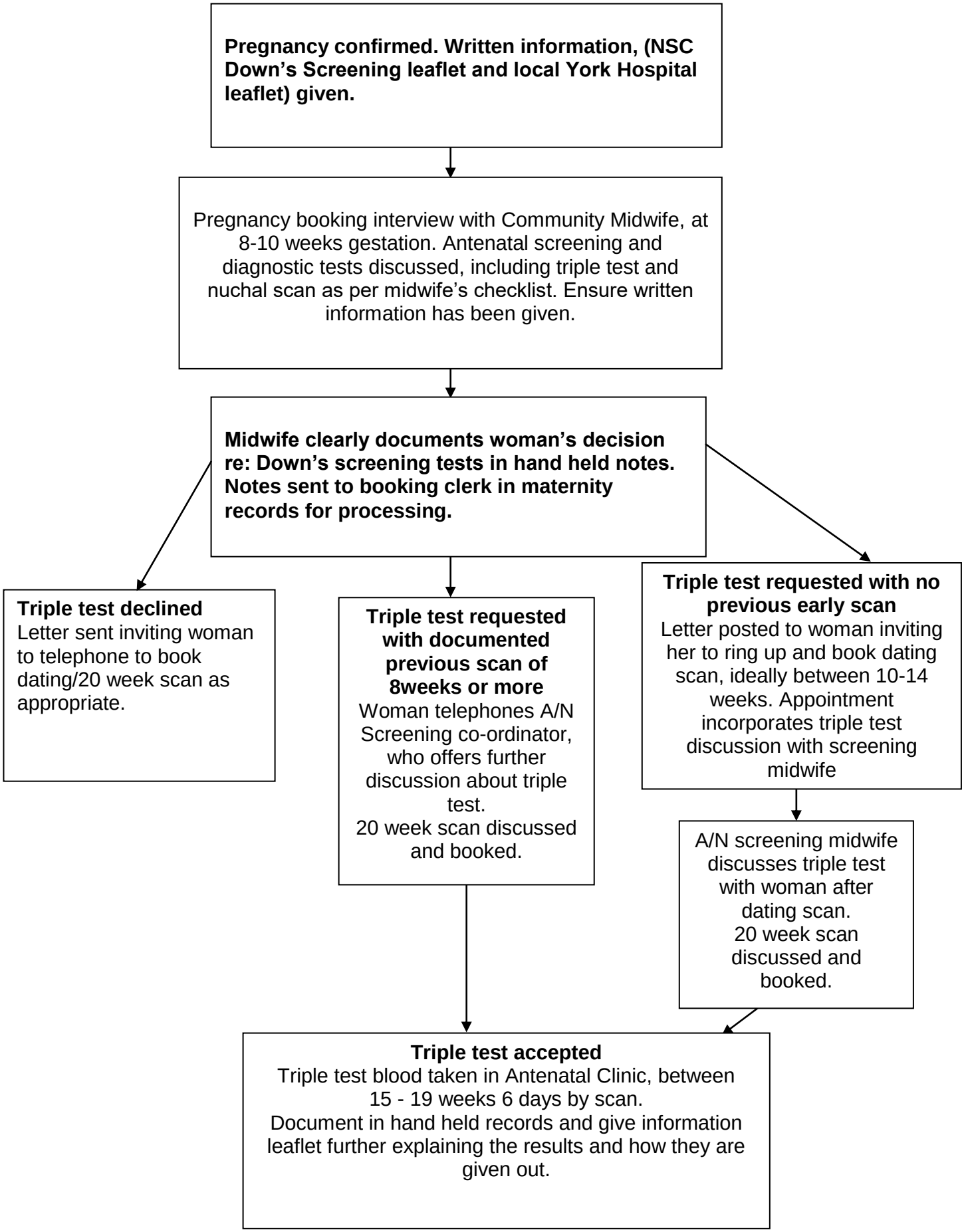
National Down's Syndrome Screening programme for England: National Screening Committee, 2004.

NHS litigation CNST clinical risk management maternity care standards, 2004

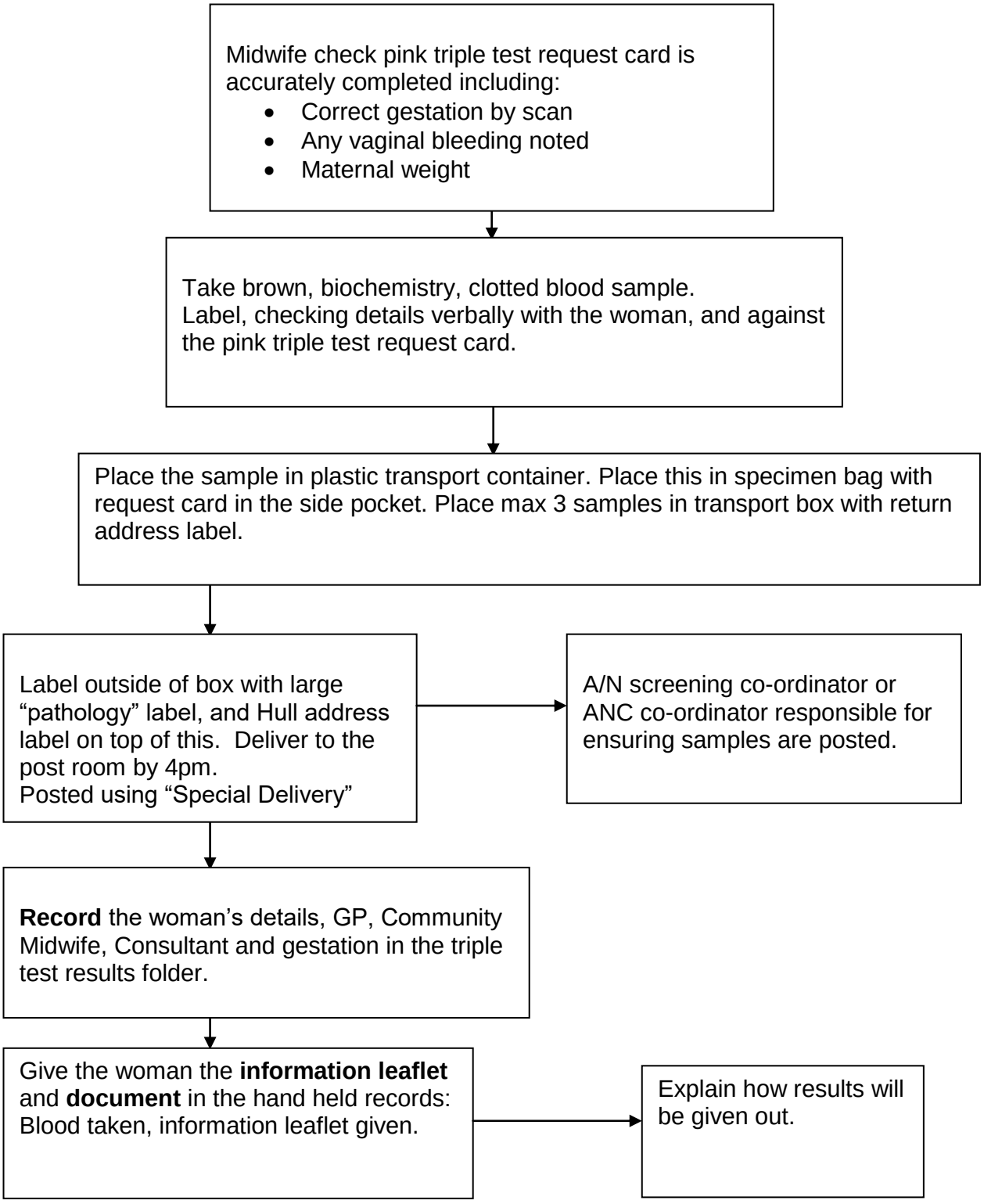
National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62:
Antenatal care: Routine care for the healthy pregnant woman. London.

Our Inheritance, Our Future: Genetics White Paper 2003

3.2.2 CARE PATHWAY FOR TRIPLE TEST (ANTENATAL SCREENING FOR DOWN'S SYNDROME)



3.2.3
PATHWAY FOR TRIPLE TEST BLOOD SAMPLING

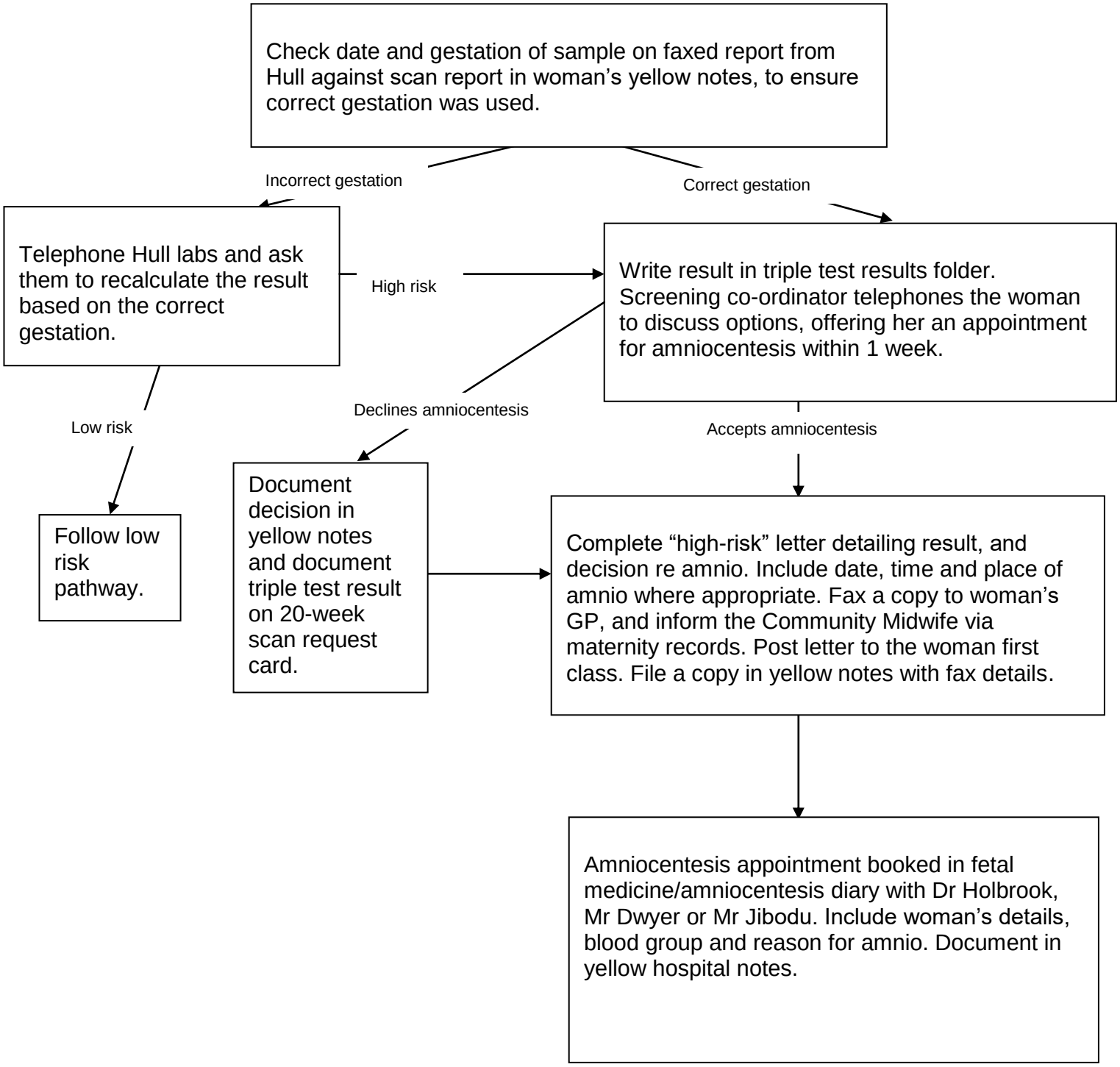


RETURNED BOXES:

- Must be opened to ensure they are empty, and empty pods stored in the blood room, separate from the boxes.
- Blood not taken on Fridays

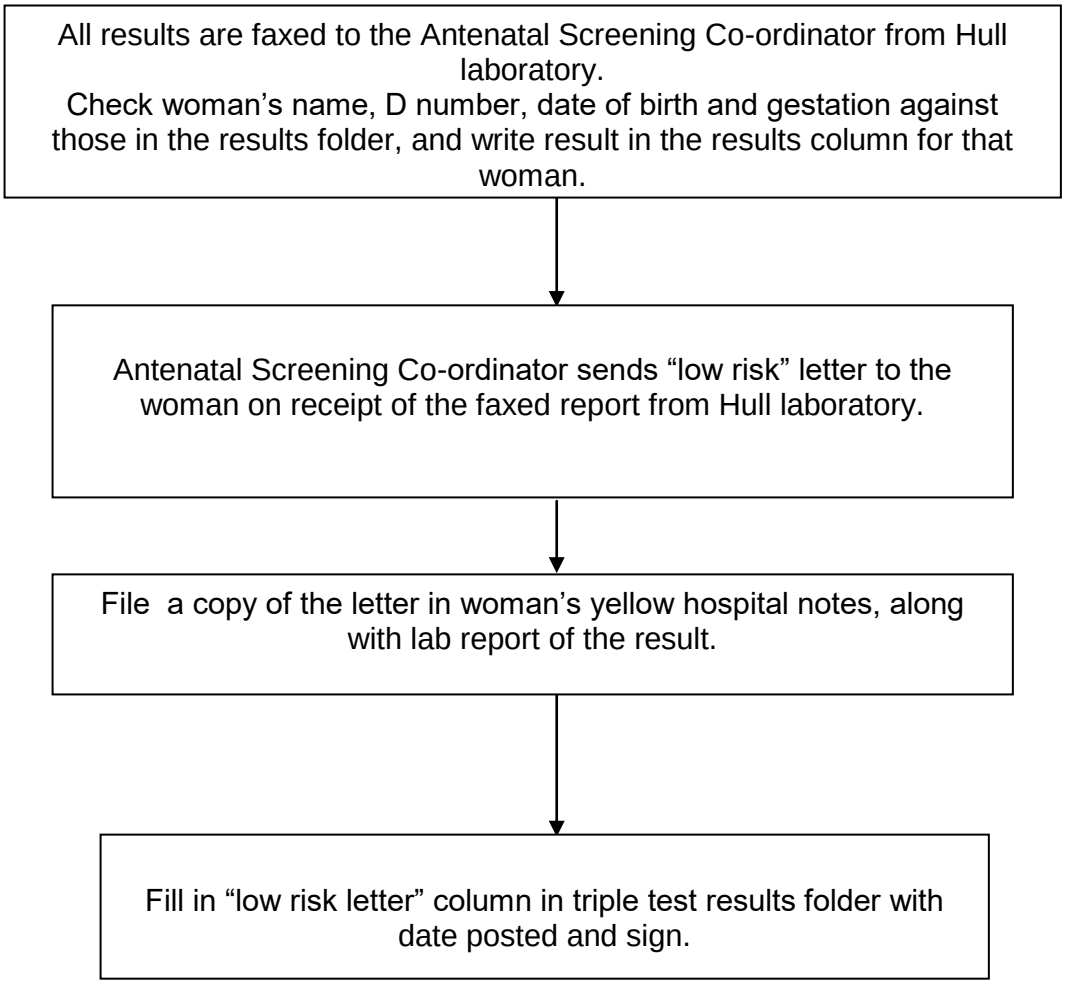
3.2.4

PATHWAY FOR DEALING WITH HIGH RISK TRIPLE TEST RESULTS



Useful telephone numbers:
Triple test results,
Hull: 01482 607754

3.2.5
PATHWAY FOR DEALING WITH LOW RISK TRIPLE TEST RESULTS



3.2.6 ANTENATAL SCREENING FOR INFECTIOUS DISEASES

In August 2003 the Department of Health (DH) released the standards *Screening for Infectious Diseases in Pregnancy.* These were developed by the DH expert advisory committees and the UK National Screening Committee to support the four infections that are currently included in the UK antenatal screening programme: Hepatitis B, HIV, syphilis and Rubella.

Other infections not routinely investigated include cytomegalovirus, Chlamydia, Hepatitis C, Streptococcus Group B, Toxoplasmosis, Genital Herpes Simplex Virus and HTLV-1.

The standards were designed to ensure that procedures were uniform across the UK and to ensure that all women receive the same level of care. They include monitoring of the screening programme to ensure quality relevant to commissioners and providers of screening services and for those with performance management responsibilities. A useful outcome of the programme is the ability to monitor the level of the four infections in the local population.

Screening for HIV and Hepatitis B was introduced in response to the release of Health Service Circulars (HSC):

- HSC1998/127 Screening of Pregnant Woman for Hepatitis B and Immunisation of Babies at Risk

- HSC 1999/183 Reducing Mother to Baby Transmission of HIV

3.2.7 HUMAN IMMUNODEFICIENCY VIRUS (HIV)

HIV infection in adults leads to the development of AIDS (Acquired Immune Deficiency Syndrome). Conditions associated with AIDS include opportunistic infections such as candida, pneumocystis carinii pneumonia, tuberculosis and lymphomas. In babies AIDS can develop after only 8-12 months of HIV infection. While these infections can often be prevented or treated for many years, there is, at present, no cure for AIDS.

Most HIV infected children in this country have acquired the infection from their mothers (vertical transmission). There are now interventions that can reduce the risk of mother to child transmission of HIV from 25% to 2%. In order for women to take full advantage of these, it is vital to diagnose the infection before they give birth.

Other modes of transmission include:

- Infected blood products
- Infected needles
- Contact with body fluids of infected person i.e. through sexual intercourse

The Department of Health recommends that all pregnant women are offered and recommended HIV testing as an integral part of their antenatal care. At the national level, 80% of HIV infected pregnant women are identified during antenatal care. This should result in an 80% reduction in the number of children with HIV acquired from an infected mother during pregnancy, birth or through breastfeeding.

The mother must be aware of the implications of being tested for HIV infection.
Blood should be taken in a brown bottle.

- When informing women of negative result she should be aware that seroconversion can take up to 12 weeks and there is potential for new infection if they/ their partner participate in at risk behaviour.
- A second test is required to confirm all primary positive results (false positive results can occur)
- Positive results should be given in person (normally by obstetrician).

The woman will be managed by a multidisciplinary team i.e. Obstetrician, Paediatrician, Midwife, Specialist counsellor, and specialist in G U medicine.
The mother will be offered drugs during the pregnancy to inhibit transfer across the placenta, advised not to breast feed and will have an elective caesarean section.

If a woman is found to be HIV positive – refer to full guideline which is available on Horizon and the guidelines folders.

3.2.8 HEPATITIS B VIRUS (HBV)

Hepatitis is a viral infection in the cells of the liver. Transmission of hepatitis B virus (HBV) is similar to HIV

- horizontally (person-to-person),
- Via contact with infected blood or body fluids e.g. through sexual contact with an infected person.
- Vertical or perinatal transmission can occur from an infected mother to her newborn child.

If the mother is Hep B positive there is a 90% risk of transmission across the placenta to the baby which in turn gives a high risk of the child developing a chronic infection which may result in liver cancer or cirrhosis in later life.

The objective of offering screening for Hepatitis B to pregnant women and immunisation of babies born to infected mothers is to reduce the perinatal transmission of this infection.

All pregnant women are offered antenatal screening for Hepatitis B virus, regardless of immunisation history, and all babies born to infected mothers are offered a complete course of immunisation, starting at birth.

Information regarding the test should be given prior to booking.
If the mother consents to the test she must be informed of what will happen if the test comes back positive i.e. referral to specialist consultant physicians for follow up and liver scans Women will need to be counselled appropriately and sensitively following a positive result.
The blood should be taken in a brown topped bottle.

Heb B vaccine using the following regime should be given to all babies of mothers who:-

- Are Hep B positive
- Are drug misuses (current or previous)
- have a partner who has or is misusing substances

NB Please refer to the York Trust Paediatric guideline 'Management of Infants at Risk of Perinatal Blood Bourne Virus Transmission HIV, Hepatitis B and C' February 2008

1st dose – within 12 hrs of birth-in hospital
2nd dose – aged 1 month at hospital at CAAU
3rd dose – aged 12 months with 1st routine vaccination at GP's surgery
4th dose – aged 12 months with blood test at hospital
5th dose aged approx 4½ yrs with routine 'pre-school' boosters.
Babies born to highly infectious mothers should also be given Hep B immunoglobulin (can be given at same time but different site.) (Health Protection Agency 2007). If correctly vaccinated there is 95% protection from HBV infection.

3.2.9. HEPATITIS C

Pregnant women should **not** be offered routine screening for Hepatitis C as there is insufficient evidence on its effectiveness and cost effectiveness. (NICE 2008) Hepatitis C screening **should** be offered to high risk groups i.e. self or partner with past and/or present history of any drug misuse.

HIV, Hep B and C pre-test discussion checklist:

- Check understanding of information from leaflets received
- Reaffirm hospital policy
- Explain nature and purpose of the test and the importance of early treatment
- Explain possibility of false positive result
- Explain procedure for giving of results
- Follow up of a positive result by ANC and referral to consultant in GUM
- Explain will not affect insurance unless result comes back positive

High Risk Groups for HIV, Hep B and C

- Previously lived in high prevalence country e.g. sub Sahara Africa, China or Far East
- Occupational risk e.g. health care workers
- Unsafe sexual practise/bisexual partner/HIV, Hep B or C positive partner
- Past or present history of drug misuse in woman or partner

3.2.10 SYPHILIS

Syphilis is a rare sexually transmitted disease caused by the spirochaete Treponema Pallidum and is transmitted by sexual contact or through the placenta from mother to baby. Routine screening is recommended for all pregnant women as it remains the most important factor in identification of infants at risk of developing congenital syphilis and ideally results in diagnosis and treatment during pregnancy.

The risk to the fetus or infant appears to vary considerably according to the stage of untreated syphilis in the mother. When primary or secondary syphilis goes untreated, half of the infants are premature, stillborn or die as neonates.

A positive result does not establish current maternal disease status and all screen positive results are sent for diagnostic testing.
Women confirmed with a positive result should be referred to obstetrician and Genito-urinary specialist for assessment and treatment.

Blood should be taken in a brown bottle.

NB The above diseases are notifiable and family contact tracing will be necessary. This is usually organised by The Health Protection Agency who are informed by either Consultant Microbiologist or Consultant Obstetrician.

3.2.11 RUBELLA. (GERMAN MEASLES.)

Rubella is characterised by a rash or fever. The virus is spread from person to person by inhalation of respiratory droplets from an infected individual and is moderately infectious. The most critical time for Rubella infection for the fetus is the first trimester (up to 16 weeks), as 90% of fetuses affected at this stage will be seriously harmed. The risk of the baby being affected declines for infections caught later in pregnancy though some may develop problems with their sight or hearing that do not become apparent until they are older. The characteristics of Congenital Rubella Syndrome (CRS) include deafness, eye defects (cataracts), cardiac defects and severe neural damage. Miscarriage and premature birth are also possible as a result of a rubella infection.

It is therefore critically important to identify mothers who lack rubella-specific antibody so that advice on postpartum immunisation can be offered to protect them in subsequent pregnancies.
Established childhood rubella immunisation programmes mean that coverage in the UK is generally high and that for most pregnant women, the detection of rubella-specific immunoglobulin G (IgG) implies immunity following immunisation or infection before pregnancy.

However, immunity to rubella following vaccination is not always life long, which means that screening for presence of the antibody should be done in each pregnancy.

All women who are rubella non-immune should be advised to keep away from anyone who has rubella. If they have come in contact with someone who has rubella they must see their GP immediately, and if they develop rubella their care should be discussed with an obstetrician.

Any woman who develops a non-specific rash in pregnancy that is compatible with systemic infection should be tested for rubella irrespective of a prior history of rubella vaccine or positive rubella antibody test unless there is satisfactory evidence of past rubella infection (two documented vaccinations, or one documented vaccination and one prior positive rubella antibody test, or two positive antibody tests. The majority of women will have been vaccinated and shown to be immune, therefore it is unlikely that many will need further investigation.

Blood should be taken in a brown bottle.

References:

Common Health Questions: Pregnancy and Rubella [online] available at http://www.nhsdirect.nhs.uk/articles. [Accessed on 18.1.08]

Department of Health (2003) Screening for Infectious Diseases in Pregnancy. Standards to support the UK Antenatal Screening Programme.[online] available at: http://www.dh.go.uk/assetRoot/04/09/20/49/04092049.pdf [Accessed on 3.3.2008]

Health protection Agency [online] available at: http://www.hpa.org/infections [Accessed on 22.9.08]

HSC 1998/127 Screening of Pregnant Woman for Hepatitis B and Immunisation of Babies at Risk (Department of Health July 1998) [online] available at: http://www.dh.gov.uk/assetRoot/04/01/18/40/04011840.pdf [Accessed on 3.3.2008]

HSC 1999/183 Reducing Mother to Baby Transmission of HIV (Department of Health August 1999)[online] available at: http://www.dh.gov.uk/assetRoot/04/01/21/28/04012128.pdf [Accessed on 6.3.2008]

HSC 1998/127 Screening of Pregnant Woman for Hepatitis B and Immunisation of Babies at Risk (Department of Health July 1998) [online] available at:http://www.dh.gov.uk/assetRoot/04/01/18/40/04011840.pdf [Accessed on 3.3.2008]

HSC 1999/183 Reducing Mother to Baby Transmission of HIV (Department of Health August 1999)[online] available at:http://www.dh.gov.uk/assetRoot/04/01/21/28/04012128.pdf [Accessed on 6.3.2008]

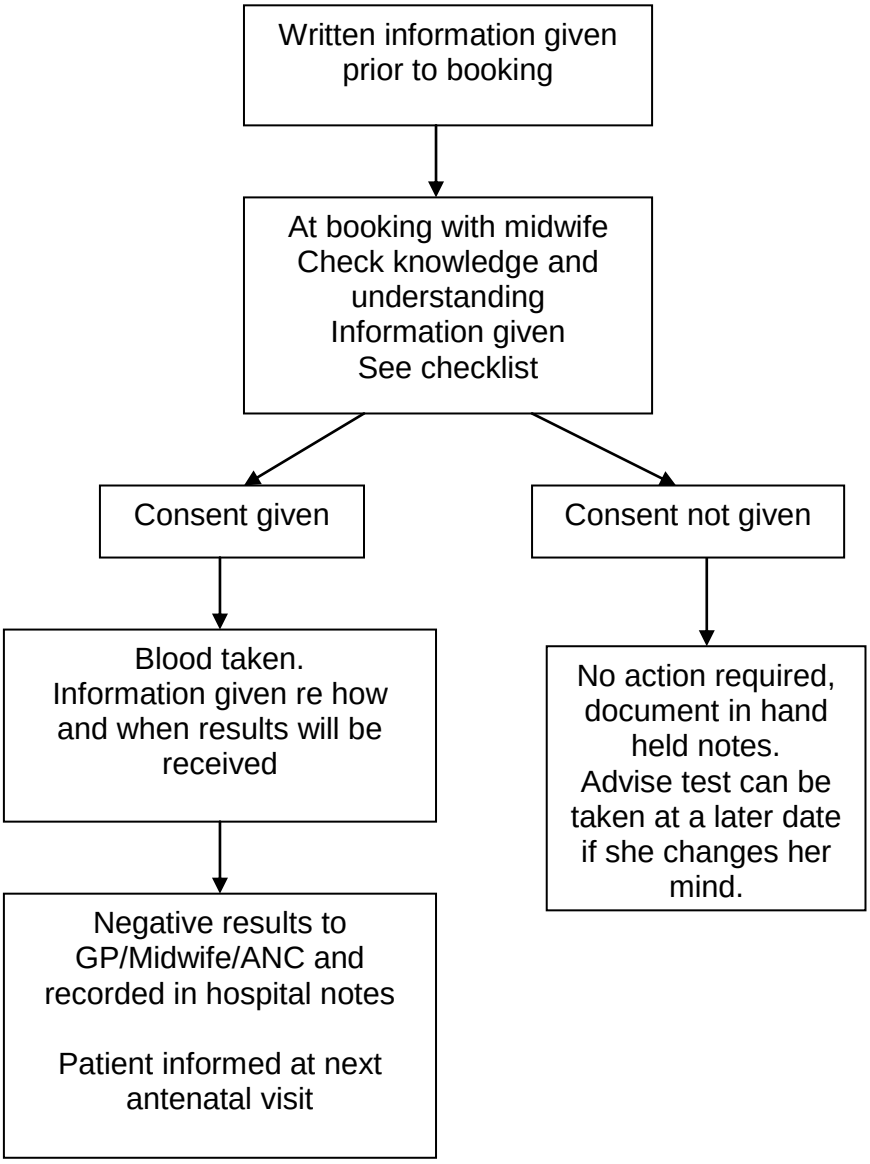
Health Protection Agency (June 2007): briefing Paper for Health Professionals to support the Department of Health: *Screening for Infectious Diseases in Pregnancy Programme* [online] available at http://www.hpa.org.uk/infections co.uk [Accessed on 28.1.08]

National Institute for Health and Clinical Excellence (NICE) 2008*:* Clinical Guideline 62: *Antenatal Care: Routine care for the healthy pregnant woman*

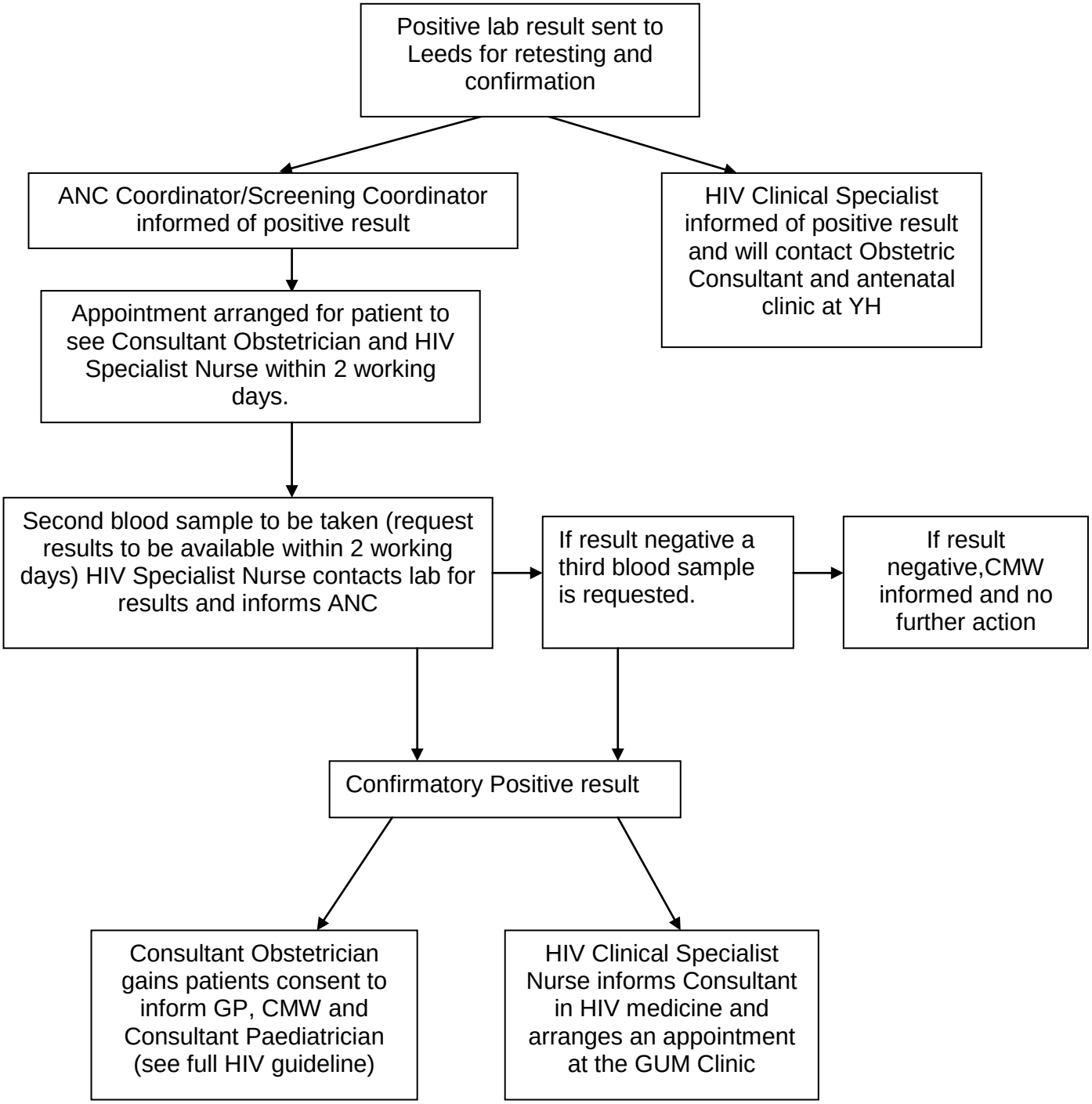
Royal College of Obstetricians and Gynaecologists (2001) [online] *Infection and Pregnancy: study group statement* available at: http://www.rcog.org.uk [Accessed on 9.11.08]

Ball, R.(2008) *'Management of Infants at Risk of Perinatal Blood Borne Virus Transmission HIV, Hepatitis B and C'* York Hospital Trust Policy. February 2008.

3.2.12
Pathway for dealing with HIV Screening in Pregnant Women (Negative result)

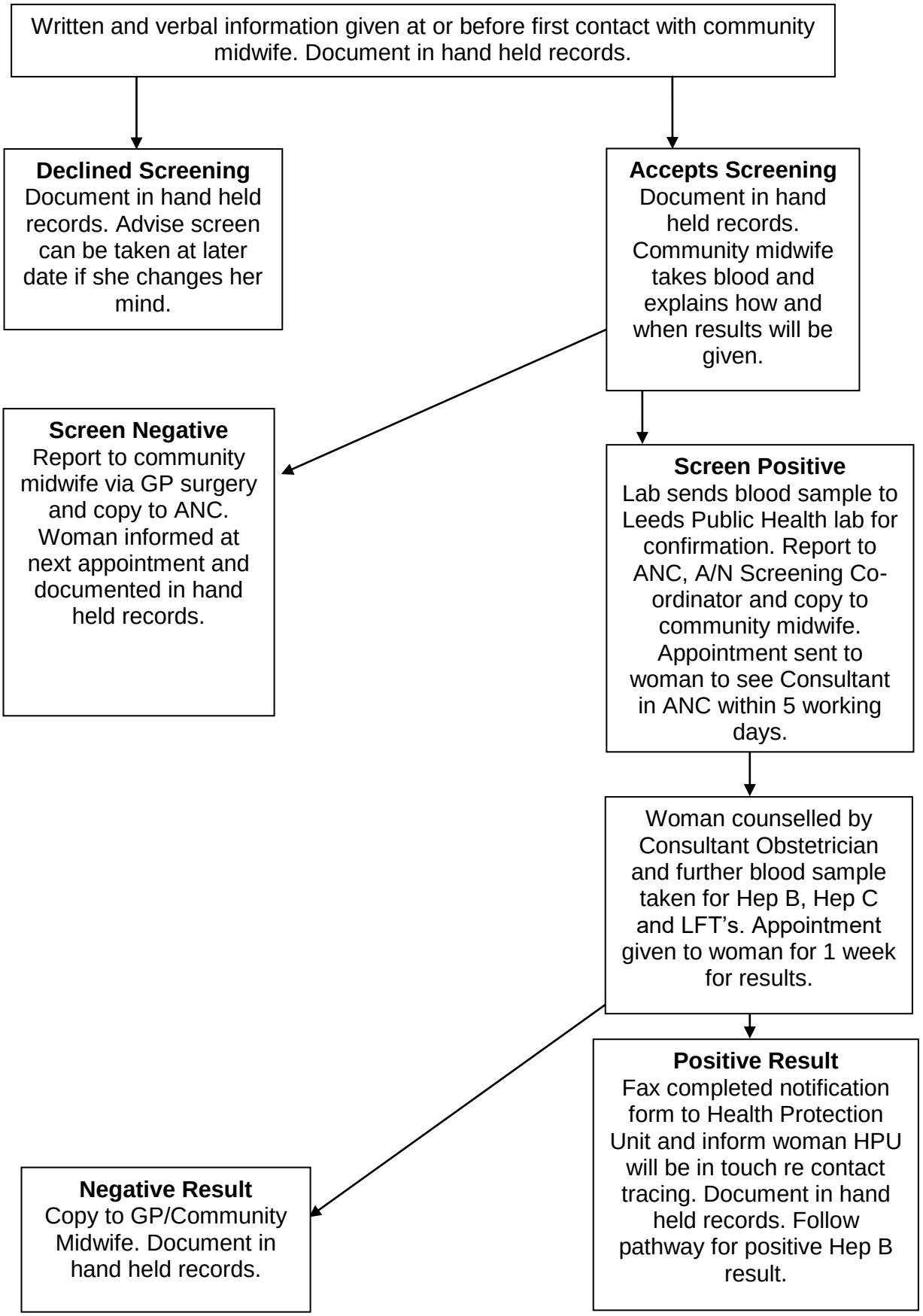


3.2.13
Pathway for dealing with HIV Screening in Pregnant Women (Positive result)

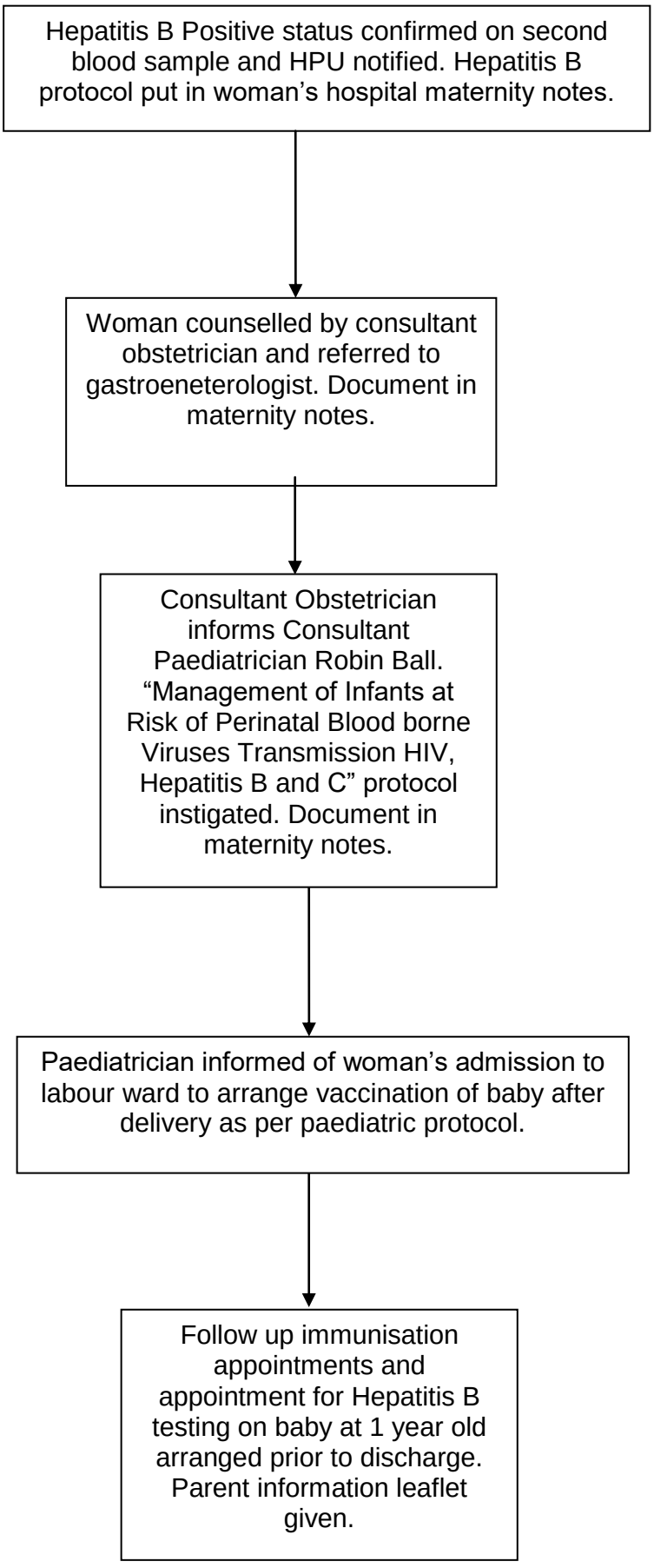


All actions taken are subject to consent from the individual concerned

3.2.14
Care Pathway for Antenatal Hepatitis B Screening

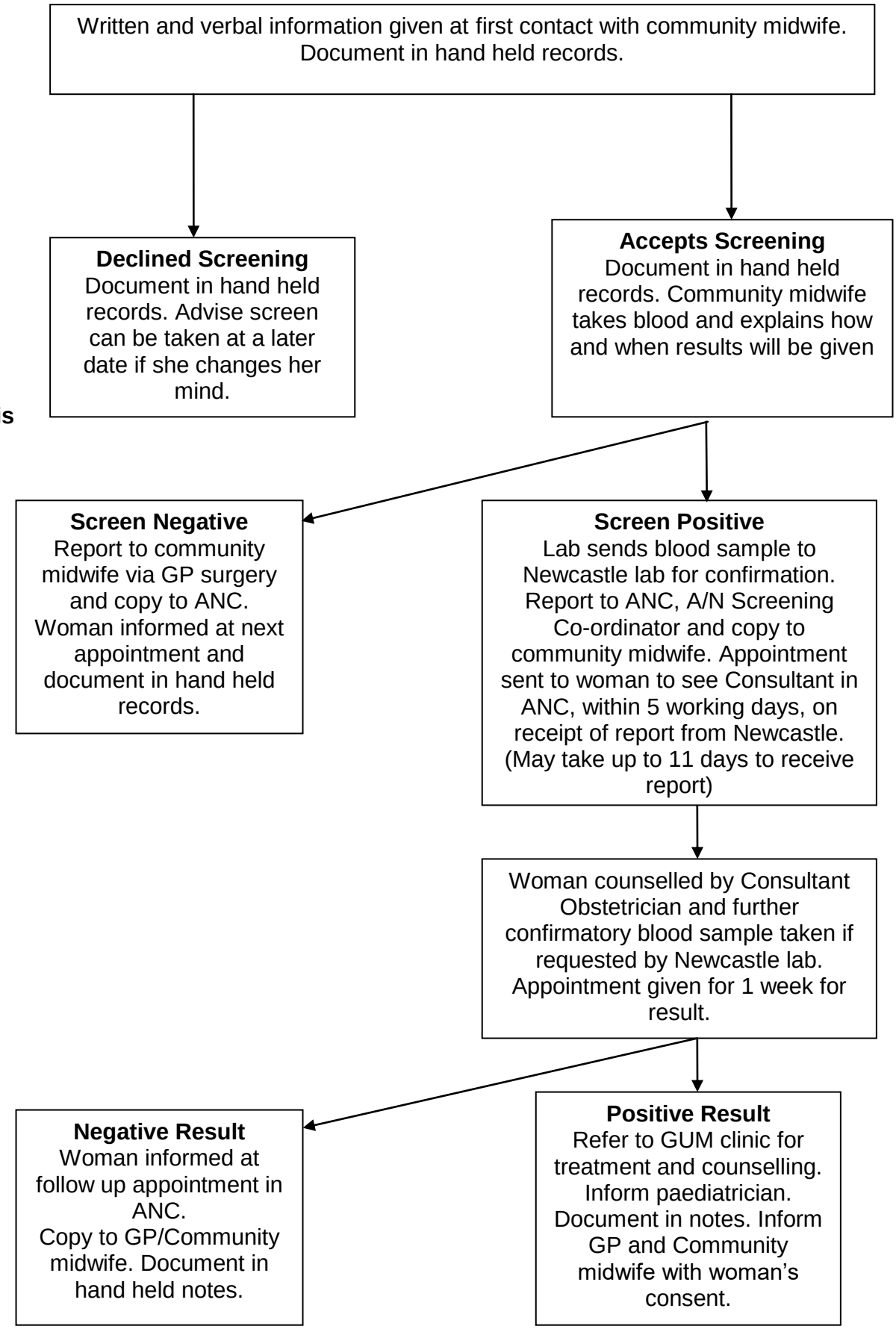


3.2.15
Care Pathway for Hepatitis B Positive Result

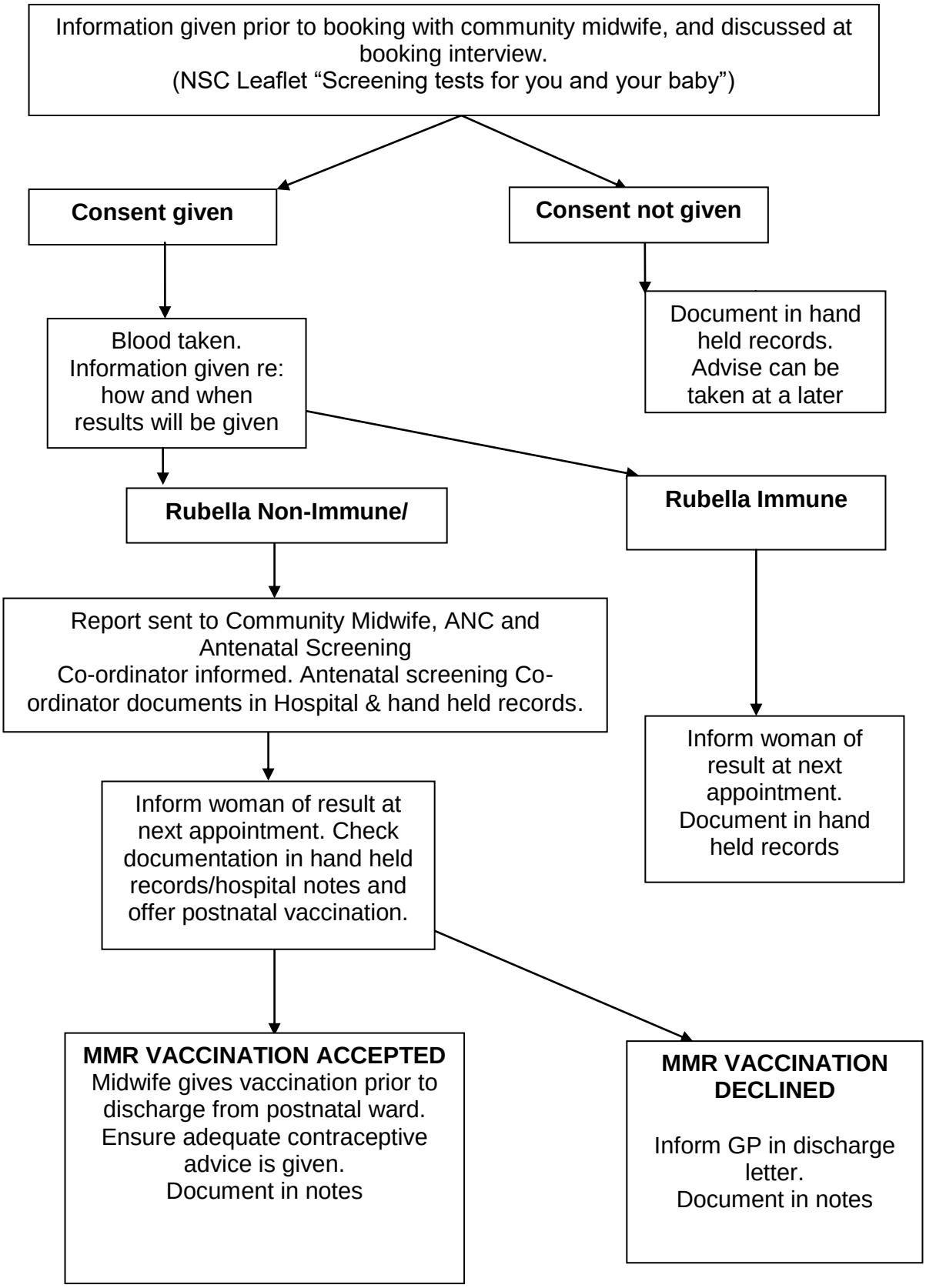


3.2.16 Care Pathway for Antenatal Screening for

Syphilis



3.2.17
Care Pathway for Rubella Screening in Pregnancy



3.2.18 SCREENING FOR BLOOD AND BLOOD GROUP DISORDERS

Screening for blood group and blood disorders at booking enables any problems to be identified from an early stage and appropriate treatment to be instigated.

Although routine iron supplementation is not necessary in pregnancy, women with a haemoglobin of <11g/litre at booking should be investigated further and iron supplementation commenced if necessary.

3.2.19 ANAEMIA IN PREGNANCY

Although routine iron supplementation is not necessary in pregnancy anaemia should be investigated and treated by checking haemoglobin at booking and 28 weeks gestation

A Hb < 110g/l at booking or < 105 g/l at subsequent checks requires iron supplementation. A sample of blood for ferritin, B12 and folate levels (brown bottle, red form) should also be obtained to determine if any further treatment is required. Results should be discussed with the woman's GP.

If the Hb is 105 – 110 g/l at 28 weeks, re-check at 31 weeks. If Hb remains 105 – 110 g/l recheck again at 34 weeks gestation.

If Hb is .≥ 110g/l at 28 weeks, a further FBC should be done at 36 weeks only.

Anaemia should be *considered* in the following circumstances:

- Symptoms of anaemia e.g. easily breathless, excessive fatigue
- Multiple pregnancy after 28 weeks gestation.
- Grand multips
- History of iron deficiency anaemia, especially if occurred in a previous pregnancy.
- Vegetarians

Do not give iron supplementation to women with haemoglobinopathies – refer to ANC for management by consultant team.

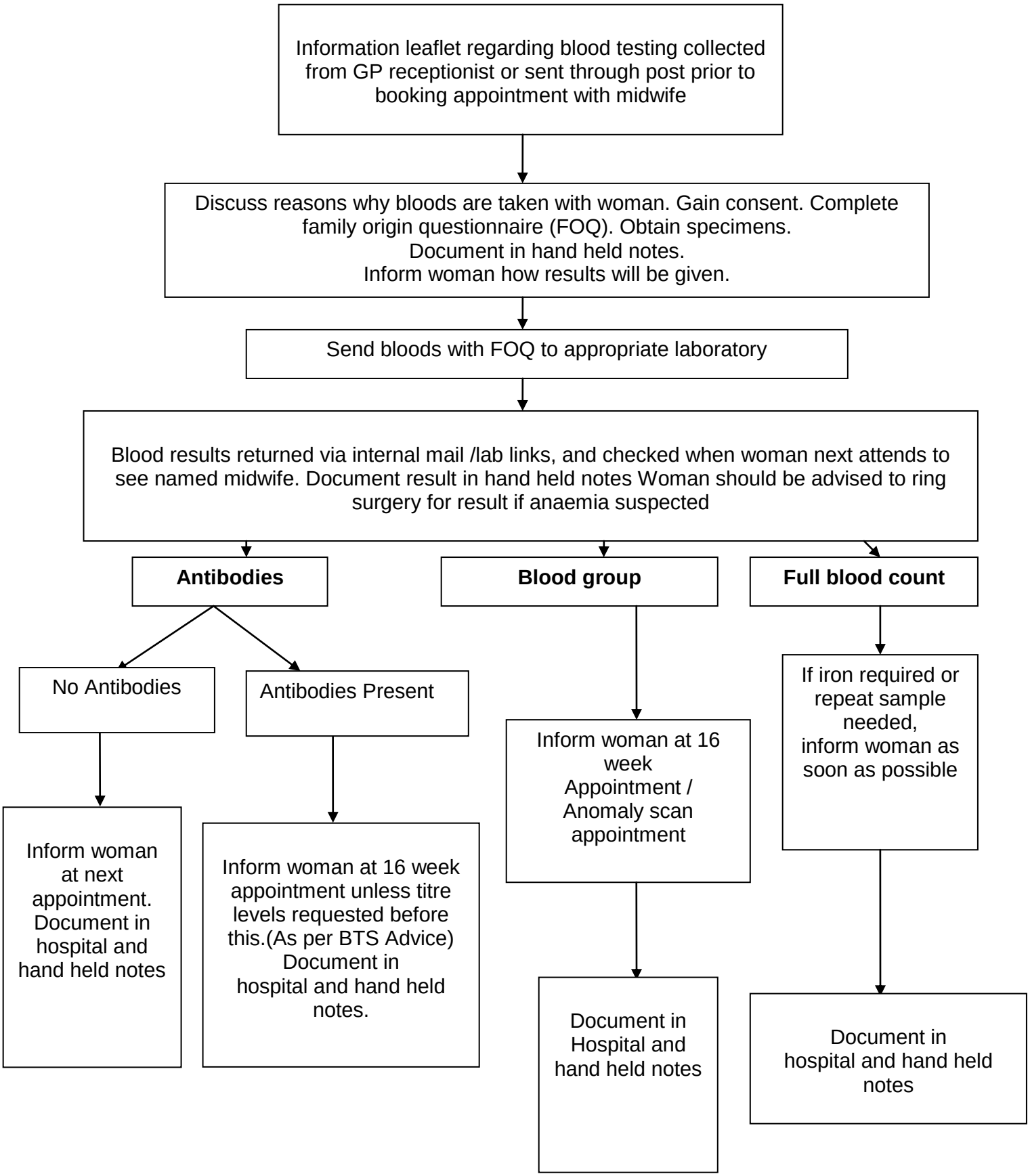
Refer to ANC if:-

- Woman is compliant with iron therapy and anaemia is not responding after 3 weeks of treatment
- Hb < 90g/l
- Any Haemoglobinopathies

References:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical Guideline 62: *Antenatal Care: Routine Care for the Healthy Pregnant Woman*. London:

3.2.20
Care Pathway for Full Blood Count, Blood Group and Antibody Screening



3.2.21 LOW PLATELETS

In pregnancy platelet levels may fall due to haemodilution and a normal gradual pregnancy reaction (gestational thrombocytopaenia)

Platelets are checked as part of the full blood count taken at booking and 28 weeks of pregnancy.

Women with platelets within 100-150 $x10^9$ should be closely observed and bloods checked fortnightly.

Women with platelets below 100 $x10^9$/l should be referred to Consultant Clinic for assessment.

References:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical Guideline 62: *Antenatal Care: Routine Care for the Healthy Pregnant Woman*. London:

3.2.22 HAEMOGLOBINOPATHY SCREENING

This document is adapted for local use from NSC guidelines and outlines the agreed policy and service description for antenatal screening for sickle cell and thalassaemia for York Hospitals NHS Foundation Trust. It replaces any previous policy and procedure documents. The Policy is subject to annual review in January.

Introduction

The NHS Plan stated that by 2004 there will be:

'effective and appropriate screening programmes for women and children including a new national linked antenatal and neonatal screening programme for haemoglobinopathy and sickle cell disease.' Chapter 13.16

Generic and programme specific national standards have been set by the UK National Screening Committee (UK NSC). Policy and standards are subject to review and development in the light of new evidence.

The overall aim of the programme is to offer timely antenatal screening to all women (and couples) to facilitate informed decision making.

Condition screened for:

(i) Significant maternal haemoglobinopathies These should be detected by antenatal screening and are important for maternal care	Hb-SS Hb-SC Hb-$^{SD\ Punjab}$ Hb-SE Hb-SO^{Arab} Hb-S/Lepore Hb-S/β thalassaemia β thalassaemia Intermedia Hb H disease (β thalassaemia major would be clinically apparent)
(ii) Maternal conditions requiring partner testing	
a) Conditions in (i)	
b) Carrier states in mother	Potential significant disorders in The fetus
Hb-AS Hb-AC Hb-AD^{Punjab} Hb-AE Hb-AO^{Arab} Hb-A Lepore β thalassaemia trait δβ-thalassaemia trait α^{o} thalassaemia trait HPFH	Hb-SS Hb-SC Hb-SD ^{Punjab} Hb-SE Hb-SO^{Arab} Hb-S/Lepore Hb-β/Lepore; Hb-S/β thalassaemia; Hb E/β thalassaemia; β thalassaemia major (except cases with silent or near silent maternal phenotype) Hb-S/δβ thalassaemia Hb Bart's Hydrops Fetalis Hb - S/HPFH
c) Any compound heterozygote state including one or more of the above conditions	

d) Any homozygous state of the above conditions

The antenatal screening programme for sickle cell and thalassaemia requires close collaboration between community and hospital based antenatal services, primary care, laboratory services and specialist services.

Aetiology

Sickle cell disease and Thalassaemia disorders, also known as haemoglobinopathies or haemoglobin disorders, are autosomal recessive conditions affecting the structure or synthesis of haemoglobin. Infants are at risk of inheriting these disorders only if both parents are carriers and/or suffer from the disease.

They mainly affect individuals who have originated from Africa, Asia, the Caribbean, the Middle East, and the Mediterranean, but because of migration and subsequent integration, can affect any ethnic group.

There are two types of haemoglobin disorders categorised as qualitative or quantitative.

Thalassaemias are quantitative disorders, - alpha (α), beta (β), delta beta (δβ) and haemoglobin Lepore, and affect the *quantity* of haemoglobin produced. This results in partial or no production of the globin chains that form the structure of haemoglobin within the red blood cells. Thalassaemia major can result in severe anaemia. Regular treatments, including blood transfusions and chelation therapy are required from a very early age to enhance quality of life and long-term survival.

Sickle cell is a qualitative disorder affecting the *quality* of haemoglobin produced. The significant haemoglobin variants are haemoglobin S (sickle), C, D (Punjab), E and O (Arab). This condition is characterised by a chronic haemolytic anaemia, vaso-occlusion, pain of varying intensity, subsequent organ damage, chronic ill health and reduced life expectancy. Sickle cell disease has a high mortality and morbidity rate in young children if left untreated.

Aims

1. To offer early screening and diagnosis to pregnant women attending for antenatal care at York Hospitals Foundation Trust.

2. To provide appropriate high quality information on the screening process to enable the woman and her partner to make an informed decision on whether to accept or decline the offer of screening.

3. To ensure adequate support and counselling to all women with a confirmed diagnosis as the result of screening, who choose to end their pregnancy.

4. For women with a confirmed diagnosis as the result of screening, who choose to continue their pregnancy, to provide optimal management for follow-on care during pregnancy and the subsequent newborn and childhood periods.

Objectives

1. To identify and offer screening to all eligible women/couples.

2. To process and report on screening tests in a timely manner as detailed in the UK NSC working standards [2] and the NHS Sickle Cell and Thalassaemia Screening Programme specific standards[3].

3. To offer appropriate tests and methods of screening that meet national standards

4. To offer timely counselling and diagnostic tests to all women/couples with screen positive results within programme specific recommended timescales.

5. To provide adequate information and support for women with a confirmed diagnosis.

6. At all stages in the screening programme, to provide information in appropriate media that meets national standards.

7. To promote an appropriate level of knowledge for all health professionals involved in the screening programme.

8. To minimise the adverse effects of screening: anxiety, misunderstanding, inaccurate information, unnecessary investigation and follow-up, and inappropriate disclosure of patient specific information.

9. To effectively audit and monitor the screening process and compliance with national standards and directives. To have in place, systems for risk assessment and management of adverse incidents occurring during the screening process.

References:

Antenatal screening – working standards (March 2004): National Down's Syndrome Screening Programme for England.

Department of Health (2000): *The NHS Plan: a Plan for Investment: A Plan for Reform.* London: The Stationary Office.

Livingstone FB (1985). '*Frequencies of Haemoglobin Variants'.* New York: Oxford University Press.

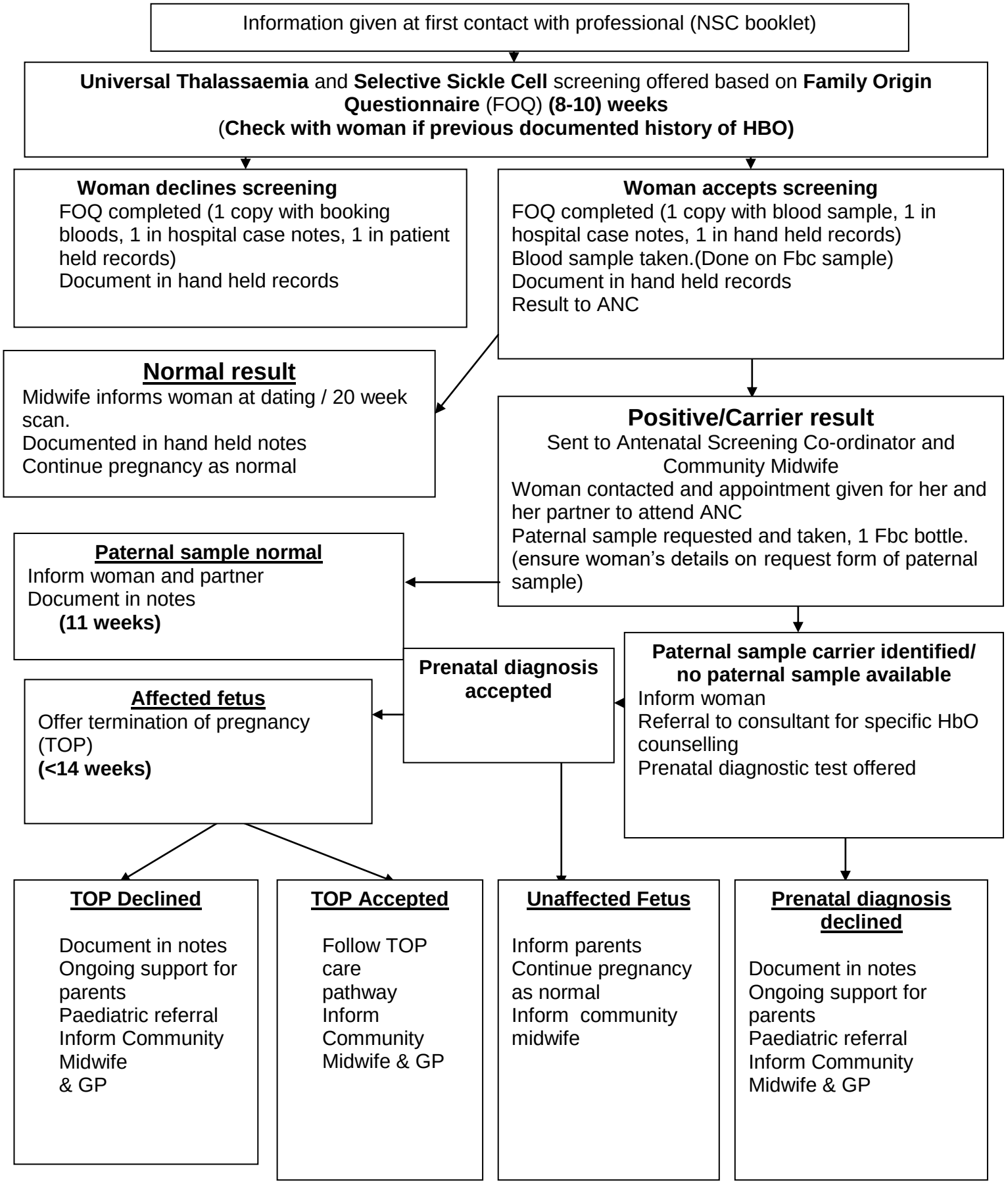
NHS Sickle Cell and Thalassaemia Screening Programme: Standards for the linked Antenatal and Newborn Screening Programme. November 2006.

Serjeant GR and Serjeant B (2001): *Sickle Cell Disease*. Oxford: Oxford University Press.

3.2.23

Care Pathway for Antenatal Screening for Haemoglobinopathies (HBO)

(Low Prevalence)



3.2.24 ANTENATAL SCREENING FOR ASYMPTOMATIC BACTERIURIA

Untreated asymptomatic bacteriuria is associated with an increased risk of preterm birth
Between 3 and 8 per cent of pregnant women may have asymptomatic bacteriuria, therefore an MSU should be sent at booking (as well as undertaking urinalysis) if the woman is ≤14 weeks gestation. After this time, patients will present with clinical symptoms.

An MSU should always be obtained if a patient presents with ≥ +protein or nitrites on dipstick testing or clinical symptoms.
An MSU does not need to be sent if only leucocytes present on dipstick testing on one occasion with no clinical symptoms.
Treatment with antibiotics should be commenced on clinical grounds if a woman presents with symptoms in pregnancy whilst waiting for the urine culture and sensitivity report.

The risk of **acute pyelonephritis** is substantially decreased if infections are recognised and treated.

Acute pyelonephritis is a serious maternal illness, which poses a risk of preterm labour and intra-uterine death. Symptoms are: fever, flank pain and dysuria and often require hospitalisation and treatment with IV antibiotics. Regular follow up urine cultures must be obtained to enable recognition and treatment of relapses and recurrences.

References:

Health Protection Agency, (June 2007). Briefing Paper for Health Professionals to support the DOH UK: *'Screening for Infectious Diseases in Pregnancy Programme: Antenatal and Newborn Screening Programme'*. Version 4.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62:
Antenatal Care: Routine care for the healthy pregnant woman. London.

3.2.25 TRAINING REQUIREMENTS FOR MATERNAL SCREENING

Training on maternal screening will be given to appropriate staff groups according to the training needs analysis (see training needs analysis within the guidelines folder in all ward areas).

3.2.26 MONITORING COMPLIANCE OF MATERNAL SCREENING PATHWAYS

In order to monitor compliance with maternal screening guidelines, this guideline will be monitored as follows:

Minimum requirements	Evidence	CNST standard
a) Designated lead for antenatal screening	Antenatal screening co-ordinator in post	4.5 a)
b) antenatal screening tests offered following NSC guidance	Notes review	4.5 b)
c) system for ensuring that the appropriate tests are undertaken with appropriate timescales	Notes review	4.5 c)
d) system for ensuring that appropriate tests are undertaken when women book late	Notes review	4.5 d)
e) process for review of the results	Notes review	4.5 e)
f) process for reporting results to women	Notes review	4.5 f)
g) process for reporting results to other relevant health care professionals	Notes review	4.5 g)
h) process for ensuring that women with screen positive test results are referred and managed within appropriate time scales	Notes review	4.5 h)
i) expectations in relation to staff training as reflected in the training needs analysis	Training database	4.4 h)

This will be monitored as part of the annual audit programme

3.3 COMMON INFECTIONS OF PREGNANCY

3.3.1 GENITAL BACTERIAL INFECTIONS

These include Chlamydia, Bacterial Vaginosis and Group B Haemolytic Streptococcus. Current thinking is that they should not be screened for routinely unless clinically indicated.

3.3.2 CHLAMYDIA.

Chlamydia is caused by the bacterium Chlamydia Trachomatis and is the most prevalent bacterial sexually transmitted infection in the under 25 age group with 1:10 testing positive.

People with untreated Chlamydia may develop complications including the risk of infertility.
Pregnant women with untreated Chlamydia may have an increased risk of miscarriage or premature labour and the infection may pass to their baby's eyes during birth which may cause conjunctivitis or pneumonia.

For these reasons, in York, Chlamydia screening is offered to all women under the age of 25

Procedure:
At 16 weeks - the woman should be given the National Chlamydia Screening Programme leaflet
At 20 weeks - If she consents to testing, a urine test should be taken. Urine should not have been passed for at least 1 hour prior to the test and the urine must be collected in the correct pot specific to Chlamydia testing. It can also be picked up on a vaginal swab (but correct Chlamydia swabs must be used.) The specific 'Yorscreen' form for Chlamydia screening must be used.

The woman must be informed that results will be confidential and dealt with by Yorscreen.
If they have a positive result they will be asked to name any sexual partners so they can also be treated.
The woman will be given antibiotics and should be retested 5 weeks post completion of treatment, and at 36 weeks gestation.to ensure the infection has been successfully treated. Her partner should also be tested and treated if positive and they should be advised about safe sex.

All results, treatment and contact tracing will be done by the 'Yorscreen' team.
All women with a positive Chlamydia result will be encouraged to have a full STI screen in the GUM clinic following their consultation with Yorscreen.

N.B Women over the age of 25 with a positive Chlamydia result should be referred to the GUM clinic for treatment and contact tracing.

References:

Health Protection Agency Genital Chlamydia [online] available at: http://www.hpa.org/infections [Accessed on 26.1.2008].

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical Guideline 62:
Antenatal Care: Routine Care for the healthy pregnant woman

3.3.3 ASYMPTOMATIC BACTERIAL VAGINOSIS.

Bacterial Vaginosis is the name of a condition in women where the normal balance of bacteria in the vagina is disrupted and replaced by an overgrowth of certain bacteria. It is usually asymptomatic but is sometimes accompanied by discharge, odour, itching or burning.

Pregnant women should not be offered routine screening for BV because evidence suggests that identification and treatment of asymptomatic BV does not lower the risk of preterm birth and other adverse reproductive outcomes.
However if the woman has a symptomatic vaginal discharge and BV is picked up on a swab, they should be treated with oral Metroniadazole or vaginal Clindomycin after 12 weeks of pregnancy.

References:

Centres for Disease Control and Prevention [online] available at:
www.cdc.gov/std/healthcomm/fsct_sheets.htm [Accessed on 22.9.08]

Health protection Agency [online] available at: http://www.hpa.org/infections [Accessed on 22.9.08]

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical Guideline 62:
Antenatal Care: Routine Care for the healthy pregnant woman. London.

3.3.4 GROUP B HAEMOLYTIC STREPTOCOCCUS

Pregnant women should not be offered routine antenatal screening for Group B streptococcus (GBS).because evidence of its clinical effectiveness remains uncertain.

If Group B strep is picked up on a ***vaginal*** swab during the current pregnancy it does not need to be treated unless the woman is symptomatic.
If Group B strep is picked up on a ***urine*** screen in pregnancy, it should be treated with antibiotics at the time of diagnosis.

In either case, a GBS sticker should be placed in the special features section of the hand held notes (page 17) and the woman should also be advised to deliver in hospital.

The following women should be offered antibiotics in labour:

- If GBS is found either on a vaginal swab or in a urine sample **in current** pregnancy
- Any woman who has previously had a baby who developed GBS infection regardless of any test results this pregnancy
- Any woman with preterm rupture of membranes whether or not there is a past or present h/o GBS infection

Women do not necessarily need antibiotics in labour if they have had a past positive urine or vaginal swab result for GBS unless they also have a positive result this pregnancy. The GBS support group suggest that a vaginal swab is taken at 35-37 weeks and tested in an enhanced culture medium that has at least a 70% detection rate. However as this testing is not currently available on the NHS most women will still opt to have antibiotics in labour if they have had a past positive urine or vaginal swab result for GBS.

If women wish to be tested privately they can ring Omnilab on 0207 460 4800 to get a testing kit.
A woman, who has negative results at 35-37 weeks, does not need antibiotics in labour.

If any queries contact link midwife for GBS (ext 6004).

References:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical Guideline 62: *Antenatal Care: Routine Care for the healthy pregnant woman*. London.

Group B Strep Support (GBSS) 2008: Preventing GBS infection in newborn babies: Detailed leaflet: *For women who carry GBS (06/08)*

Group B Haemolytic Streptococcus support organisation [online] available at: http://www.gbss.org.uk [Accessed on 22.9.08]

Royal College of Obstetricians and Gynaecologists (2001) *Infection and Pregnancy-study group statement* [online] available at: http://www.rcog.org.uk/index.asp?PageID=1737 [Accessed on 9.11.08].

3.3.5 GENITAL YEAST INFECTIONS

3.3.6 THRUSH

Thrush is a yeast infection caused by Candida. If the immune system is affected in any way e.g. the mother has been on antibiotics or under a lot of stress, the fungus can grow and cause itching, irritation, redness and soreness of the vagina. Thrush infection in pregnancy is more common due to hormonal changes.

Thrush can be treated with cream and /or pessary (inserted into the vagina).A prescription can be obtained from GP or can be bought over the counter. The woman's partner must be treated to prevent re-infection during intercourse.

If a mother has thrush at the time of delivery, the baby may develop symptoms. This will not harm the baby and can be treated with antifungal drugs.

References:

Young C L, Jewell D (2001) '*Topical Treatment for Vaginal Candidiasis in Pregnancy'* The Cochrane Database Systemic reviews 2001 issue 3

3.3.7 COMMON GENITAL VIRAL INFECTIONS-

3.3.8 HERPES IN PREGNANCY.

Genital Herpes is a sexually transmitted disease caused by the herpes simplex viruses type 1 (HSV-1) and type 2 (HSV-2). Most genital herpes is caused by HSV-2. Once acquired the condition is life long. Many individuals have no or minimal signs or symptoms but when signs do occur, they typically appear as one or more blisters on or around the genitals or rectum. The blisters break, leaving tender ulcers that may take two to four weeks to heal the first time they occur. Another outbreak can appear weeks or months after the first, but it is almost always less severe and shorter than the first outbreak. There is no treatment that can cure herpes, but antiviral medications can shorten and prevent outbreaks during the period of time that the medication is taken.

Any woman with suspected first-episode genital herpes should be referred to a genitourinary specialist who will confirm the diagnosis by viral culture or PCR, advise on management and arrange a screen for other sexually transmitted infections.

Most women with genital herpes have a normal pregnancy and a healthy baby.
If the mother has a recurrence of an active episode during pregnancy there is only a small chance of the baby being infected because the mother and her baby have had a chance to develop immunity to the virus. If the mother has a confirmed primary episode during pregnancy, the risk of transmission is higher so they should be advised to see their GP or midwife ASAP who will refer to an Obstetrician.

Management:
Will mainly depend upon the views of the Consultant Obstetrician to whom the lady has been referred but may include the following:

- If a primary episode occurs during early pregnancy (first or second trimester) the woman should be given antiviral (acyclovir) drugs to clear up the infection before the baby is born (caution should be used with acyclovir before 20 weeks). Vaginal delivery is not contraindicated.
- If a primary episode occurs after 34 weeks and before the onset of labour, there is a 40%-50% risk of the virus passing on to the baby, which means the baby will carry the virus. The mother should be treated with acyclovir from confirmation of the infection until delivery. Provided that treatment is initiated at least 4 weeks before onset of labour, vaginal birth is appropriate.
- If a woman presents with a secondary infection in pregnancy, there is no consensus as to whether treatment with acyclovir is necessary. Treatment would depend on the views of the clinician, the clinical picture and severity of symptoms.
- Frequent symptomatic reoccurrences in pregnancy would usually be treated with acyclovir from 36 weeks and vaginal birth would be appropriate.
- If the mother has an active primary infection at around the time of delivery (such that herpetic lesions are visible) an elective caesarean section may be recommended so the baby does not come in contact with the sores

There is no evidence to support routine antenatal screening for HSV 1 and 2 antibodies, or for virus detection in the cervix from patients with a history or recurrent HSV

References:

Centres for disease Control and prevention [online] available at: http://www.cdc.gov/std [Accessed on 22.9.08]

Health protection Agency [online] available at: http://www.hpa.org/infections [Accessed on 22.9.08]

NHS Direct (2007) *Pregnancy and Herpes* [online] available at: ww.nhsdiect.nhs.uk/articles [Accessed on 18.11.07]

Royal College of Obstetricians and Gynaecologists (2007) Green top guideline 30: *Management of Genital Herpes in Pregnancy* [online] available at: http://www.rcog.org.uk/resources/Public/pdf/greentop30_genital_herpes0907.pdf [Accessed on 9.11.08]

3.3.9 HUMAN PAPILLOMAVIRUS (HPV) AND GENITAL WARTS

There are more than 100 types of HPV (human papillomavirus), including 40 which can infect the genital tract and are sexually acquired. Most people who have a genital HPV infection do not know they are infected as they are frequently asymptomatic and it resolves without treatment or causing disease. However, certain HPV infections can cause cervical cancer, other cancers and genital warts.

HPV infections are extremely common in the sexually active population with at least 50% acquiring a HPV infection at some point in their lives. They are particularly common in the first few years after onset of sexual activity. Rarely a pregnant woman can pass HPV to her baby during vaginal delivery. A baby that is exposed to HPV may develop warts in the throat or voice box, but this is very rare and is not an indication for Elective Caesarian section.

Genital warts are caused by the human papillomavirus and are the most frequently diagnosed viral STI in the UK. They usually appear as soft, moist, pink or flesh coloured swellings and can be flat, single or multiple, small or large and sometimes cauliflower shaped. After sexual contact with an infected person warts may appear within weeks, months or not at all. Warts tend to grow rapidly during pregnancy and may become numerous and large. This may be due to a weakened immune system, but there is some evidence to suggest that HPV is influenced by progesterone.

At the moment, there is no treatment for HPV, (although from autumn 2008 girls between the ages of 13- 14 will be offered vaccination against the 2 most common types of HPV infections that cause cervical cancer), but there are treatments to get rid of genital warts. Warts may be removed by applying a chemical treatment, freezing them or removing them surgically, depending on the size and location. Some of these treatments may take up to three months, or longer, and because the virus may still remain in the body warts often come back even after treatment. The safest way of treating them in pregnancy is by either cryotherapy or surgery.

References:

Centres for disease Control and prevention [online] available at: http://www.cdc.gov/std [Accessed on 19.10.08]

Health Protection Agency [online] available at: http://www.hpa.org/infections [Accessed on 19.10.08]

Health Protection Report (August 2007): *Trends in genital warts and herpes diagnoses in the United Kingdom* [online] available at: http://www.hpa.org/infections [Accessed on 19.10.08]

Women's Health (2002) [online] available at: www.womenshealthlondon.org.uk/leaflets/hpvwarts/hpvtreat.html [Accessed 19.10.08]

3.3.10 COMMON SYSTEMIC INFECTIONS DURING PREGNANCY

3.3.11 CHICKENPOX (VARICELLA)

Most pregnant women will already be immune to the virus because they had chicken pox as a child. It is very unlikely if they have already had it that they will catch it again, but they can get shingles if the virus, which remains inactive in their body, is reactivated (see shingles).

At booking, all pregnant women should be asked if they have had chickenpox. If they know for definite that they have had it, or if their immunity has been checked in the past and their medical records state they are immune, antibody testing is not required.

If they are unsure or if they know they have never had chickenpox, or if they have been born and raised overseas (even if they give a history of having had chicken pox) then antibody titre should be requested along with the booking bloods.

If a pregnant woman thinks she has had direct contact with chickenpox (significant contact is defined as being in the same room for a significant period of time (≥15 mins) or face to face contact) and she is unsure if she has previously had chickenpox (and her immune status is not known), she should see a GP/ Midwife as soon as possible and have a blood test taken for varicella antibodies (10 mls blood in brown-topped bottle) away from contact with other pregnant women.

If the result shows that she is:-

- Varicella-zoster IgG negative and she is <20 or > 36 weeks pregnant, VZIG (Varicella immunoglobulin) can be offered within 10 days of exposure to the virus. However, VZIG is of no value once the mother actually contracts chicken pox. Additionally, women need to be informed that VZIG is a blood product with the potential risks of anaphylaxis explained to her. Receiving VZIG does not necessarily prevent chicken pox in the mother, or stop the fetus being affected, although it may reduce the severity of infection for the mother or the risks of infection to the baby.
- Varicella-zoster IgG positive or if the woman subsequently discovers that she has definitely had chickenpox, protection can be assumed and reassurance given.

N.B. If a woman develops a vesicular rash, despite assumed immunity, they should see their GP urgently

Risks to the mother if varicella caught in pregnancy:

There is an increased risk of fulminating varicella pneumonia in the late second and early third trimesters (27-32 weeks) and shortly after delivery, especially if the woman is a smoker.
For this reason, any woman with chicken pox who develops a dry cough, chest pain, or breathlessness should be referred for medical care as a matter of urgency.
Other complications of varicella infection such as encephalitis or hepatitis are not increased if the woman is pregnant, but should she develop any neurological symptoms or any bleeding (especially bleeding into the vesicles) then she should be referred urgently for medical attention.

Acyclovir is recommended for the treatment of chickenpox after 20 wks pregnancy if it presents within 24 hrs of onset of the rash. Before 20 weeks of pregnancy, acyclovir should be used with caution.

Risks to the baby if mother catches varicella:-

0-13 weeks 1% chance that the baby will develop congenital varicella which can cause eye problems, undeveloped limbs, and brain damage.

13-20 weeks 2% chance the baby will develop congenital varicella syndrome.

20 - 36 weeks there is no increased risk of congenital damage, but having been in contact with the virus, the baby may get shingles after they are born or in later life.

After 36 weeks of pregnancy the baby may get chickenpox in the womb. To reduce the risk of complications the mother may need antiviral drugs. Urgent referral to a consultant obstetrician should be made.

VZIG should be given to the baby in the following circumstances:

- If the mother catches chickenpox 7 days before or 7 days after delivery and is non immune
- VZ antibody negative infants (i.e. those born to mothers who are non-immune) who are exposed to varicella or shingles (from any other source) in the first 7 days of life

Mothers with varicella should be encouraged to breast feed although if there is a lesion(s) close to the nipple they should express until the lesion(s) dries up. The expressed milk can be given to the baby if they are covered by VZIG.

If a recently delivered non immune mother has other children with chicken pox present, contact with the infected siblings should be delayed until the baby has had its VZIG and is at least 7 days old.

3.3.12 SHINGLES

Anyone who has had chickenpox as a child will have the inactive virus in their body and can get shingles in later life if the virus is reactivated. A woman who has had chicken pox cannot catch shingles from another person (the virus has to be reactivated) but if she has not had chickenpox she can catch it. **It can only be caught by direct contact with the lesions** so they should be kept covered.
If a mother does get shingles when she is pregnant there is a very small risk (1-2%) that the baby may be affected. (See chicken pox). The risk of the baby being infected is even lower than chickenpox.

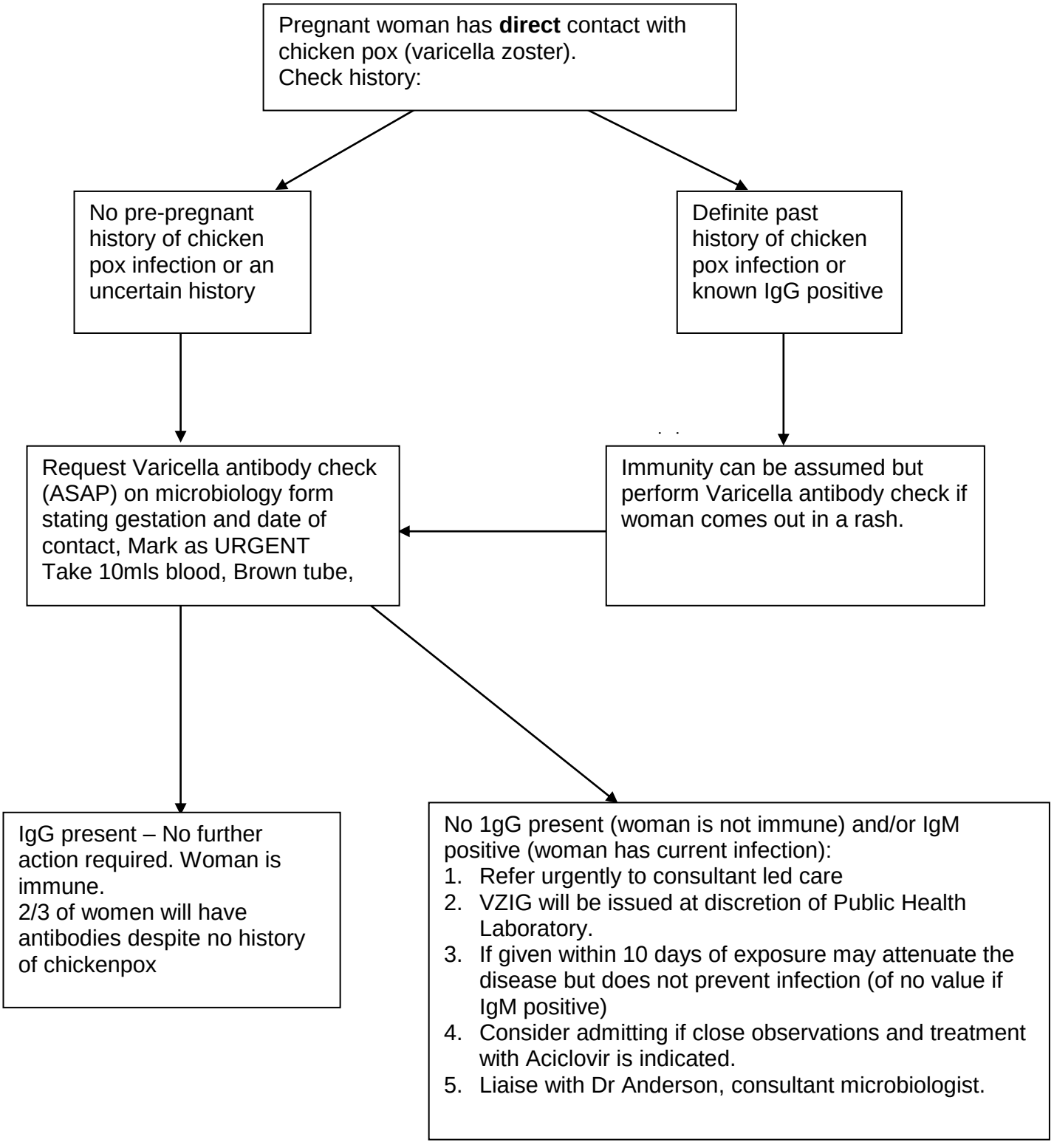
References:

Department of Health (2008): *The Green Book* [online] available at: http://www.dh.gov.uk/en/Publichealth/Healthprotection/Immunisation/Greenbook/DH_4097254 [Accessed on 12.11.08]

Health Protection Agency, (2007) *Management of rash illness and exposure in pregnancy* [online] available at: http://www.hpa.org/infections [Accessed on 19.10.08]

Royal College of Obstetricians and Gynaecologists (2007): *Chicken pox in Pregnancy* Green - top guideline number 13 [online] available at: http://www.rcog.org.uk/files/rcog-corp/uploaded-files/GT13ChickenpoxinPregnancy2007.pdf [Accessed on 22.3.2009]

3.3.13
FLOWCHART FOR CHICKEN POX AND SHINGLES CONTACT IN PREGNANCY



3.3.14 PARVOVIRUS (SLAPPED CHEEK DISEASE OR FIFTH DISEASE)

Parvovirus is spread by respiratory droplets and across the placenta or by blood transfusion. It most commonly affects children age 6-10 in late winter and early spring. It has an incubation period of 4-14 days and is often indistinguishable from other viral illnesses presenting with low-grade fever, headache and upper respiratory tract infections. 3 -7 days later a “slapped cheek “rash appears on the face often followed by a blotchy red rash on the trunk and limbs. Adults who are infected by the virus are mainly asymptomatic, but of those who do present with symptoms, 80% are likely to complain of swollen and painful joints (hands, wrists, knees) with women being much more likely to be affected than men.

If the pregnant woman has known exposure to the virus, they should be offered an urgent blood test. (It may be possible to have the booking bloods tested – ring serology on 6301 to check if there is sufficient blood left to do this)
If the results come back: -

- IgG Positive IgM Negative This means the mother has had a past infection. If the result was obtained on a booking blood sample, reassurance can be given that she is immune and there are no concerns for her pregnancy. If however, the result was obtained from a new sample of blood, there is uncertainty as to how old the infection is (i.e. if the mother is 24 weeks pregnant when the sample of blood was taken, she could have caught it during early pregnancy). In these instances the labs (serology on ext 6301) should be contacted and a request made to test the booking bloods to ascertain if the mother had the virus at the beginning of the pregnancy. If she was IgG positive on her booking bloods, reassure her as above If IgG negative on booking bloods then she has been infected in pregnancy and should be referred to a consultant team.
- IgG Negative and IgM negative. This means the mother is not immune but also has no sign of the infection. Consider repeating the blood 3- 4 weeks after contact or if illness develops.
- If IgM Positive This means the mother has a current infection and she should be referred to consultant care as risk of fetal hydrops. There is also an increased risk of miscarriage

50% of the population are non-immune to parvovirus and of these 30-50% will get the infection.

Complications as a result of intrauterine infection in pregnancy:

- Miscarriage (thought that up to 10% of all miscarriages could be due to parvovirus infection)
- 1-3% risk of fetal death
- Hydrops fetalis (many recover from this)

There is no indication for termination as it is not a teratogenic. Most women will go on to have healthy babies.

Testing for parvovirus should not be offered routinely to pregnant women as there is no vaccination.

References:

Emis Mentor (2007) Parvovirus Infections [online] available at: http://www.emis-online.com/products/mentor-library [Accessed on 19.11.07]

Health Protection Agency, (2007) *Management of rash illness and exposure in pregnancy* [online] available at: http://www.hpa.org/infections [Accessed on15.10.07 and 08.11.08]

Royal College of Obstetricians and Gynaecologists (2001) *Infection and Pregnancy-study group statement* [online] available at: http://www.rcog.org.uk/index.asp?PageID=1737 [Accessed on 9.11.08]

3.3.15 CYTOMEGALOVIRUS (CMV)

CMV is a common viral infection of the herpes family. Between 40-85% of the population get infected during their lifetime, most have no symptoms although some will present with swollen glands and tiredness. It is passed on through blood, saliva, breast milk and other body fluids.
Once someone has been infected they carry the virus in their body and can potentially pass it on to others, however, the virus usually only reactivates in people who have problems with their immune systems.

Routine screening for CMV is not recommended because there is no simple treatment or immunisation for it. Good standards of hygiene will reduce the risk of catching CMV.

Infected pregnant or breast feeding women can pass the virus on to their baby although the CMV is only really dangerous if the mother catches it for the first time during pregnancy. There is about a 40% chance that the mother will pass on the virus to the baby and 1 in 10 unborn babies who catch the virus will have serious problems.

CMV infections in early pregnancy can lead to:

- Miscarriage
- Damage to the baby's hearing
- Visual impairment for the baby

CMV infections in later in pregnancy can lead to:

- Stillbirth
- Premature labour
- Congenital CMV infection, which in turn may cause jaundice, liver and blood problems or hearing and visual impairment.

If a woman thinks she has come in contact with CMV, or is having any symptoms she should see her GP or midwife for a blood test ASAP to check for the presence of antibodies.

10 mls of blood should be taken in a brown-topped bottle for TORCH screen (on a microbiology form) and results can take 2-3 weeks to return
A request for checking the presence of the antibody on the booking bloods should be made at the same time.

If the result shows the presence of IgG antibodies it is unlikely that the virus will be passed on to the baby, especially if the booking bloods also show the presence of antibodies.
However, a rising antibody titre could signify a recurrent infection, so a 2nd blood test should be repeated 10 days after the 1st

Referral to consultant clinic is required if there is a positive result.

References:
Health Protection Agency (2007): *Guidance on the management of rash illness in pregnancy* [online] available at: www.hpa.org.uk/infections/topics [Accessed on 15.10.07 and 19.10.08]

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

Royal College of Obstetricians and Gynaecologists (2001) *Infection and Pregnancy-study group statement* [online] available at: http://www.rcog.org.uk/index.asp?PageID=1737 [Accessed on 9.11.08]

3.3.16 TOXOPLASMOSIS

Toxoplasmosis is an infection caused by the parasite Toxoplasma Gondii. Most infections are asymptomatic, although a minority of individuals may present with fatigue, myalgia and lymphadenopathy(symptoms very similar to glandular fever).

Many people will have had toxoplasmosis without realising it. As individuals can be infected only once, a woman who has been infected prior to pregnancy is not at risk of transmitting the organism to her baby. However, if she becomes infected during pregnancy or in the three months prior to conception, the infection can pass to the baby through the placenta. About 80 babies per year are severely affected by toxoplasma infection (Tommy's 2008)

The UK National Screening Committee (2001) and NICE (2008) both report that routine screening in pregnancy should not be offered. This is primarily because there is a lack of evidence that a/n screening and treatment effectively reduces mother-to-baby transmission or the complications caused by toxoplasma infection and secondly, because more than one blood test may be needed to be carried out in pregnancy to exclude infection. This can be costly with no proven benefit.
Instead, pregnant woman should be informed of primary prevention measures to avoid toxoplasmosis infection such as:

- Washing hands before handling food
- Thoroughly wash all fruit and vegetables to remove all traces of soil
- Thoroughly cooking raw meats. No pinkness or blood should be visible.
- Ready-prepared chilled meals should be cooked till piping hot all way through
- Avoid un-pasteurised goats' milk and goat's milk products
- Avoid cured meats such as parma ham, salami.
- Wearing gloves and thoroughly washing hands after handling soil and gardening
- Avoiding cat faeces in cat litter or in soil
- Avoid lambing and wash hands thoroughly after any contact with sheep

Toxoplasmosis infection at the following gestation periods can result in:

0 - 13 weeks: – spontaneous abortion, eye or brain damage. The risk of the baby being infected is 15%
14 – 26 weeks: - brain or eye damage. The risk of the baby being infected is 25%
27 – 40 weeks: - stillbirth, hydrocephalus, hepatitis, myocarditis, pneumonia. The risk of the baby being infected is 65%

The incubation period is 5-23 days after coming into contact with the parasite. It may take 3 weeks for antibodies to show in the maternal blood stream, so a mother who thinks she has been infected in pregnancy should have bloods taken at least 3 weeks after the event that caused the possibility of infection.

Investigation:

Blue microbiology form, 10mls blood taken in brown bottle for TORCH screen
Result takes 1 – 3 weeks to return. If they come back:

- IgG Positive IgM Negative This means the mother has had a past infection, but as there is uncertainty as to how old the infection is (i.e. if the mother is 24 weeks pregnant she could have caught it during early pregnancy) the labs (serology on ext 6301) should be contacted and asked to test the booking bloods to ascertain if the mother was IgG positive at the beginning of the pregnancy. If she was IgG positive on her booking bloods, reassurance can be given that she is immune and there are no concerns for the pregnancy. If IgG negative on booking bloods then she has been infected in pregnancy and should be referred to a consultant team.

- IgG Negative and IgM negative. This means the mother is not immune but also has no sign of the infection. Reinforce primary prevention measures to reduce risk of infection in pregnancy.

- If IgM Positive This means the mother has a current infection and she should be referred to consultant care as there is a risk that the baby will become infected. It can take 4-8 weeks for the infection to pass to the baby. The percentage risk of the baby getting toxoplasmosis increases if the infection is caught further on in pregnancy (see above).

If there is positive confirmation that a woman has a current infection of toxoplasmosis in pregnancy, then she may be offered the antibiotic spiramycin, which is thought to reduce the risk of transmission to the baby.

If there is concern that the baby may already be infected, an amniocentesis after 15 weeks may be offered The amniotic fluid can be tested for toxoplasmosis, and if found to be positive, certain antibiotics can be given which may reduce the severity of the infection. An USS after 20 weeks may highlight any obvious physical problems in the baby. If the baby is severely affected, termination of pregnancy may be offered.

Any baby born to a woman with confirmed toxoplasmosis in pregnancy will be monitored postnatally by the paediatric team, for developmental problems. Breast-feeding is not contraindicated, as toxoplasmosis cannot be transmitted through breast milk.

References:

BMJ Best Treatments [online] available at
http://besttreatments.bmj.com/btuk/conditions/1000513782.html [Accessed on 19.10.08]

National Screening Committee (NSC) (October 2001) *'Antenatal and Newborn Screening for Toxoplasmosis'* [online] available at
www.library.nhs.uk/SpecialistLibrarySearch/download.aspx?resID=56186 [Accessed on 19.10.08]

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

Tommy's baby charity (2008) *Toxoplasmosis* [online] available at:
http://www.tommys.org/Page.aspx?pid=193 [Accessed on 17.11.08].

3.4 BLEEDING IN PREGNANCY

3.4.1 Management of vaginal bleeding before 16 weeks

Painless bleeding before the 7th week of pregnancy can usually be attributed to implantation and provided it does not keep reoccurring, the woman can be reassured. Painful bleeding at this gestation may lead to miscarriage but the management is conservative and expectant.

After the 6th week of pregnancy and up to the 16th week, an ultrasound scan on EPADS (Early Pregnancy Advisory Day Service) should be offered to any woman presenting with bleeding (with or without pain) to determine if the pregnancy is viable and intra-uterine

All suspected ectopic pregnancies should be referred as acute admissions rather than be seen on EPADS.

Anti-D needs to be given to any rhesus negative woman presenting with bleeding after the 12th week of pregnancy.

(See also section 3.9.1 referral to EPADS)

3.4.2 Management of vaginal bleeding over 16 but under 20 weeks

- If it is the 1st occasion, the bleeding is slight and painless, the woman has a Rh positive blood group and the fetal heart has been heard, reassure and no further action is needed.
- If it is a 2nd or subsequent occasion, the fetal heart has been heard and the bleeding is slight and painless then book the woman into the next available Antenatal Clinic. It does not matter what sort of booking she is or which consultant she is booked under. Inform the woman she will be seen and assessed by a Doctor but will not routinely be offered a scan.
- If it is the 1st or subsequent episode of bleeding and no heartbeat can be heard, arrange for her to be seen in Antenatal clinic for review as soon as possible, preferably the same or next day.
- Check blood group. If the woman is rhesus negative Anti-D needs to be arranged and given within 72 hrs from the start of the bleeding. If the woman does not need referring to the antenatal clinic, or if she will not be seen at clinic before 72 hours from the start of the bleeding then arrangements must be made for her to attend G1 for Anti-D.
- If blood group is unknown and there will be a delay in attending clinic then the woman will need to come in to G1 to have blood taken to check her blood group.
- If bleeding is heavy, painful or the woman is distressed then she can be admitted as an acute to G1.

3.4.3 Management of bleeding after 20 weeks (Antepartum Haemorrhage)

All professionals caring for women during pregnancy must be aware of the causes and management of bleeding after 20 weeks gestation. These include localised abruption, marginal haemorrhage, undiagnosed placenta praevia, cervical lesions and an excessive show. The risk of preterm labour and further bleeding accounts for the increased perinatal mortality of this group.

Management:

- Admit for 24 – 48 hours for observation.
- Avoid vaginal examination (VE) until placental localisation is known.
- Arrange cardiotocograph (CTG), (if >26 weeks) USS and assessment of any continuing vaginal bleeding.
- If Rhesus negative do a Kleihauer test and give 500 units of anti-D.
- Perform speculum examination to exclude local lesion before patient goes home. Swabs may also be done to exclude infection.

3.4.4 Severe Antepartum haemorrhage in the community

Where able, conduct the following:

1. Call for help, inform hospital, arrange emergency transport
2. Monitor and document pulse, blood pressure, temperature, drugs, fetal heart and contractions**.**
3. IV access with 2 grey venflons by paramedics
4. Blood obtained for FBC, clotting, cross match six units.
5. Commence IV fluids
6. Escort woman in ambulance to labour ward

Once paramedics arrive, aim to perform points 3, 4 and 5

References:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

3.4.5 PREVENTION OF RHESUS ISO-IMMUNISTION

All women should have routine assessment of their Rhesus status at booking. Women identified to be Rhesus negative (Rh neg) should be given the leaflet 'Antenatal prophylaxis with anti-D' by ZLB Behring at their 16 week check up.(Leaflet is available by phoning 01444 447402) A further screening should be carried out at 28 weeks and women who:

- are not already sensitised to Rh D antibodies
- have no known allergy to Anti D globulin
- are happy to receive a blood product

should be offered Anti D immunoglobulin prophylactically (see guideline 3.4.6.below for more detail)

An Rh neg. woman who miscarries (after 12 weeks gestation) should be assumed to be carrying an Rh-positive baby and should be given a prescribed dose of anti D within 72 hrs.

An Rh neg. woman who has had: -

- Antenatal vaginal bleeding (after 12 weeks)
- Suspected abruption
- External Cephalic Version (ECV)
- Therapeutic abortion
- Termination of pregnancy (medical or surgical)
- Surgical evacuation of retained products of conception (ERPC)
- Any invasive pre-natal diagnosis
- Ectopic pregnancy
- Closed abdominal injury
- IUD or Stillbirth
- A delivery of a Rh positive baby

should also be given a dose of Anti-D within 72 hours. The use and dosage of Anti-D in the above instances will be dependent on an antenatal Kleihauer, and at the discretion of the woman's' team of doctors. (The effectiveness of Anti-D after 72 hours is unclear but is generally considered worth giving if it was deemed necessary but the time has run out)

Increasingly other antibodies are being recognised during routine screening. They are diverse and often little understood. They may cause haemolytic disease of the newborn and poor obstetric history. Women with unusual antibodies need referral to an obstetrician and discussion with blood transfusion may clarify further requirements for the woman and baby.

References:

Anti-D administration after childbirth for preventing Rhesus alloimmunisation: (24 Feb. 1997) The Cochrane Library. Updated issue 1. 2002.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62:
Antenatal care: Routine care for the healthy pregnant woman. London

Spong CY; Porter AE; Queenan JT *Management of isoimmunization in the presence of multiple maternal antibodies* American Journal of Obstetrics and Gynaecology, vol. 185, no
2, August 2001, pp 481-484.

3.4.6 GUIDELINE FOR ROUTINE ANTENATAL ANTI-D PROPHYLAXIS (RAADP) FOR RH NEGATIVE WOMEN

Background:

The development of anti-D antibodies generally results from fetomaternal haemorrhages (FMH) occurring in RhD negative women who carry an RhD positive fetus. These antibodies destroy red blood cells of an RhD positive fetus (Hemolytic Disease of the Newborn, HDN).

The effects of sensitisation on the fetus range from:

- fetal anaemia,
- jaundice,
- severe neurological damage
- death in utero or early neonatal life.

Post-delivery immunoprophylaxis using anti-D lmmunoglobulin (anti-D lg) began in the UK in 1969. The programme has been very successful, reducing deaths attributed to RhD alloimmunisation from 46/1 00,000 births before 1969 to 1.6/100,000 in 1990. However, RhD alloimmunisation continues to occur and the most important cause of anti-D antibodies is now sensitisation during pregnancy where there has been no overt sensitising event. Routine antenatal administration of Anti D globulin to non-sensitised Rh D negative women aims to reduce this risk. Overt events, which may lead to sensitisation, require Anti D administration.

These events include:

- Threatened or actual miscarriage
- Medical or surgical T.O.P
- Antepartum haemorrhage (APH)
- Invasive antenatal procedures (CVS, amniocentesis)
- Trauma to the abdomen / uterus
- Childbirth by whatever route

Anti D prophylaxis for these events is outside the scope of this guideline, which is limited to *scheduled Routine Antenatal Prophylaxis – see 'prevention of rhesus iso-immunisation' above.*

Exclusion from RAADP

- Women who already have Rh D antibodies, i.e. sensitised
- Women with a known allergy to Anti D globulin
- Women who decline prophylaxis because :
    - Partner (to whom the pregnancy was conceived) is known to be Rh D negative
    - No further children are planned and steps are being made to ensure this.
- Women who decline blood products. ***It is essential that the patient is made aware that Anti D is a blood product.*** Some Jehovah's Witnesses may decline this.

Administration of RAADP

The preparation used is Rhophylac ®, dose is 1 500iu, given at 28 to 30 weeks gestation. It will be administered in the Antenatal Clinic, during a session set up solely for this purpose. Unless emergency issues arise, no routine antenatal care or issues should be addressed at this clinic; women should be directed to their midwife, GP of obstetrician as appropriate.

The midwife running the clinic will collect the Anti D and a list of patients attending the clinic from the blood bank half to one hour prior to the start of clinic.

1500iu Rhophylac® (2ml injection) should be given into the ***deltoid muscle.*** Gluteal injection may end up in subcutaneous fat, where it is not well absorbed.

An ***audit trail*** of documentation in patients' notes and records for the blood bank should include

Batch number
Date and time administered

This trail will ensure effective tracking in the event of a product recall.

Any Anti D not used because patient declined or did not attend must be returned to the blood bank at the end of the clinic.

For more detailed operational guidelines for the smooth and safe running of the clinic dealing with the administration of routine antenatal anti-d prophylaxis, see folder in antenatal clinic.

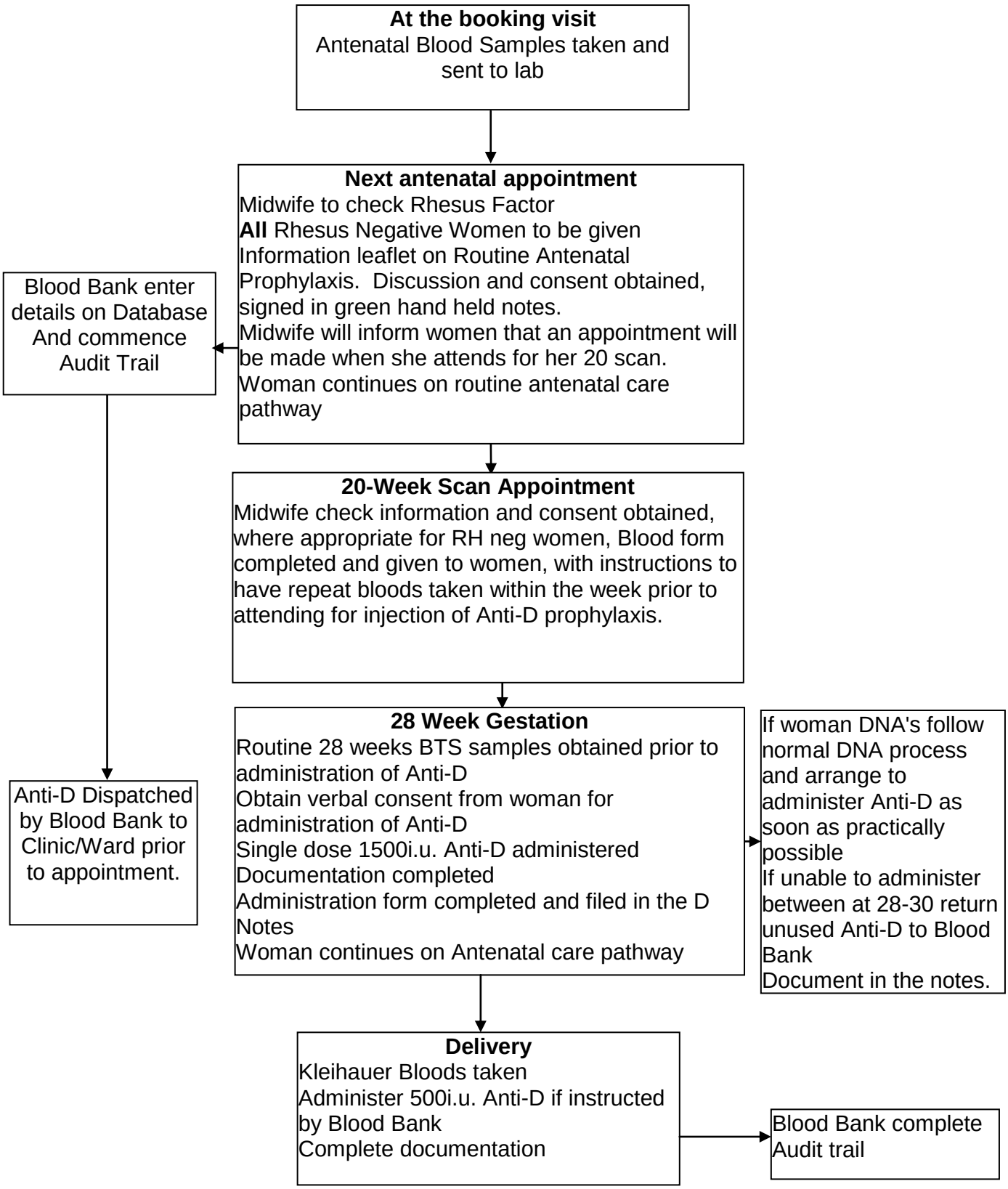
Please also refer to the York Hospitals Trust Policy (2008) titled *'Human Anti D immunoglobulin administration policy'* available on the Trust intranet.

References

National Institute for Clinical Excellence (NICE) 2002: *Guidance on the use of routine antenatal anti-D prophylaxis for RhD-negative women*. London

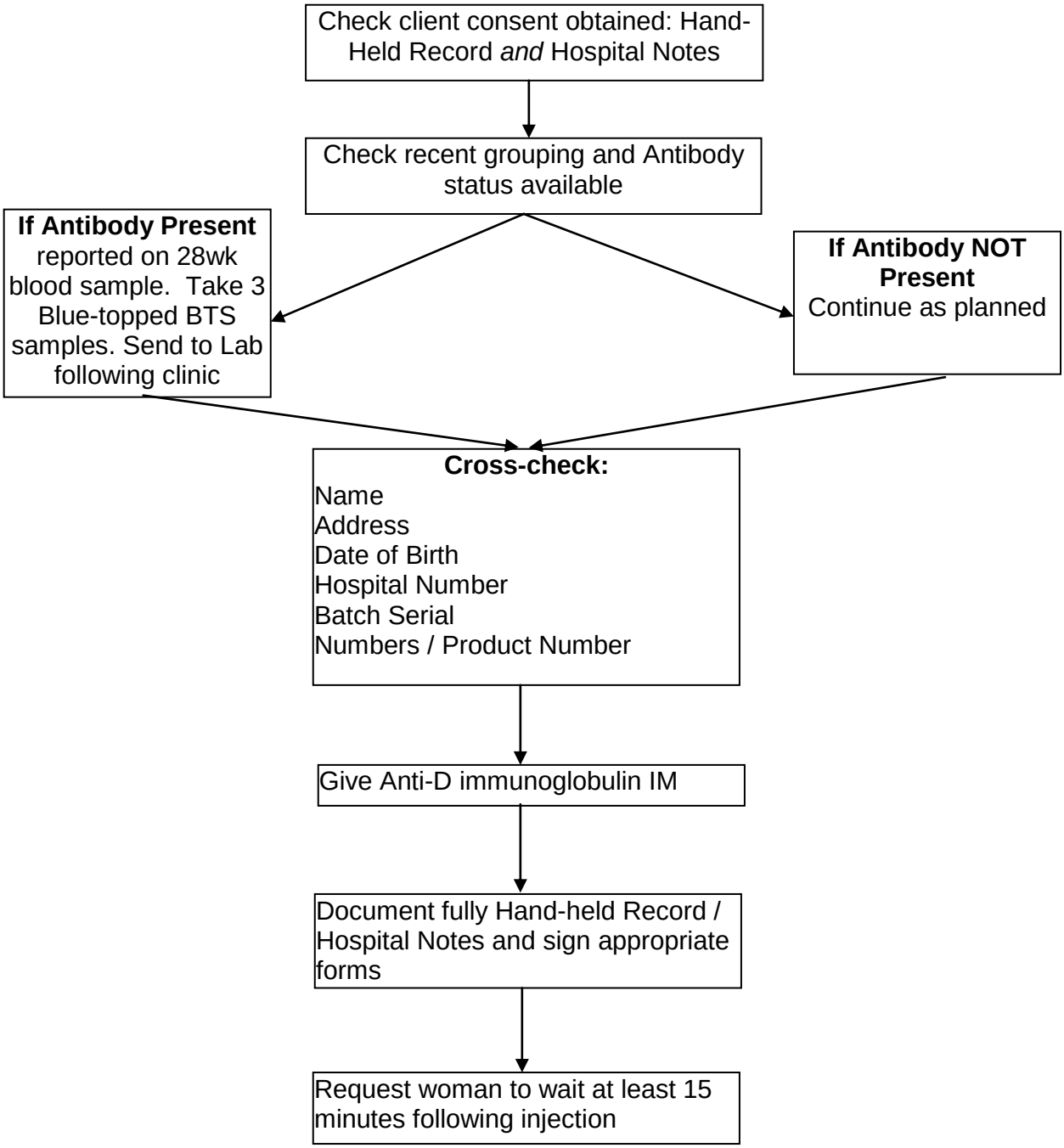
British Committee for Standards in Haematology (2004): *Guideline for the use of Anti-D immunoglobulin*.

3.4.7 Pathway for Routine Antenatal Anti-D Administration



Discussed and agreed by
Mr O. Jibodu, Consultant Obstetrician
Dr L. Bond, Consultant Haematologist
Danielle Marks, Antenatal Clinic Co-ordinator
February 2007

3.4.8 Flowchart for the Administration of Anti-D prophylaxis



Discussed and agreed by
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Dr L. Bond, Consultant Haematologist
Danielle Marks, Antenatal Clinic Co-ordinator
February 2007

3.5 COMPLICATIONS OF PREGNANCY

3.5.1 VENOUS THROMBOEMBOLISM OF PREGNANCY/ THROMBOEMBOLIC DISEASE

Venous thromboembolism (VTE) refers to the formation of a thrombus within veins. This can occur anywhere in the venous system but the predominant sites are in the vessels of the leg (giving rise to deep vein thrombosis, DVT) and in the lungs (resulting in a pulmonary embolus, PE) (Blann 2006).

VTE or Thromboembolic disease is significant in obstetrics as it is the commonest cause of *direct* maternal deaths (Lewis 2007). This has been a recurrent theme over the seven published Confidential Enquiries into Maternal and Child Health.

Thromboembolism is about 10 times more common in pregnant than in non-pregnant women of a similar age (RCOG 2007), with an occurrence of about 1/1000 pregnancies in women under the age of 35 and 2.4/1000 pregnancies in women over the age of 35 (Lockshin 1996).
The mortality rate is low but exact figures are not widely published.

- 62% of antenatal deaths from VTE occur in the first trimester although the risk per day is actually greatest in the weeks following delivery.
- 71% of postpartum deaths from VTE occur following vaginal delivery.
- 10% of postpartum deaths from VTE occur following operative (interventional) vaginal delivery. (RCOG 2004).

Acute VTE should be suspected during pregnancy in women with signs and symptoms consistent with possible VTE, especially in the presence of other
risk factors for VTE. **Signs and symptoms** include leg pain and swelling (usually unilateral), lower abdominal pain, low-grade pyrexia, dyspnoea (shortness of breath), chest pain, haemoptysis and collapse.

There are a number of known risk factors, some hereditary and others acquired and in 80% of patients who develop VTE, at least one risk factor can be identified.

Low Risk factors	Medium Risk Factors	High Risk factors
Pregnancy	Postnatal period	Previous thromboembolism
Dehydration	Age> 35	Strong family history
	Haemorrhage	Thrombophilic disorder
	Pre-eclampsia	Sickle cell disease
	Prolonged labour	
	Immobility >4 days	
	Operative delivery	
	Booking weight >90kgs	
	Multiparity	
	Gross varicose veins	

Prophylactic measures are likely to give the best outcomes.
In the presence of one medium risk factor: encourage mobility and use support stockings when in hospital.
In the presence of one high risk factor or >1 medium risk factor: refer to obstetrician for consideration of prophylactic subcutaneous heparin 5,000 units bd.

References:

Blann AD, Lip GY; Venous thromboembolism: *British Medical Journal (BMJ).* 2006 Jan 28; 332(7535):215-9.

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

Lockshin MD; Venous thromboembolism during pregnancy: *New England Journal of Medicine.* 1996 Dec 12; 335(24):1847.

Royal College of Obstetricians and Gynaecologists (RCOG): *Green-top Guideline no. 37:* Thromboprophylaxis during pregnancy, labour and after vaginal delivery. January 2004.

Royal College of Obstetricians and Gynaecologists (RCOG): *Green-top Guideline no. 28*: Thromboembolic disease in pregnancy and the puerperium: Acute Management. February 2007.

3.5.2 PREGNANCY INDUCED HYPERTENSION

Pre-eclampsia is a systemic disease that can affect any and every maternal organ system by disrupting vascular integrity. It is usually associated with hypertension and proteinuria and occurs in the second half of pregnancy. Although the reduction in the number of deaths from pre-eclampsia and eclampsia may be attributed in part to the monitoring of blood pressure during pregnancy, they remain among the major causes of maternal mortality in the UK (CEMACH 2007).Due to the complex nature of the disorder, signs and symptoms may be more varied than just a rising blood pressure and proteinuria.

At the booking appointment, the following risk factors for pre-eclampsia should be determined:

- age 40 years or older
- nulliparity
- pregnancy interval of more than 10 years
- family history of pre-eclampsia
- previous history of pre-eclampsia
- body mass index 30 kg/m_2 or above
- pre-existing vascular disease such as hypertension
- booking blood pressure: systolic ≥ 140 mmHg or diastolic ≥ 90 mmHg
- pre-existing renal disease
- multiple pregnancy.
- new partner- (can still be booked MW led care)

More frequent blood pressure measurements should be considered for pregnant women who have any of the above risk factors and the pregnancy should be managed by a consultant led team (with the exception of women with a new partner or nulliparous women unless other risk factors also present).

Blood pressure should be measured as outlined below:

- remove tight clothing, ensure arm is relaxed and supported at heart level
- use cuff of appropriate size
- inflate cuff to 20–30 mmHg above palpated systolic blood pressure
- lower column slowly, by 2 mmHg per second or per beat
- read blood pressure to the nearest 2 mmHg
- measure diastolic blood pressure as disappearance of sounds (phase V) or muffling (phase IV) if the Korotkoff sounds do not disappear altogether

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.

Women presenting with the above and/or if the systolic rises ≥ 140 mmHg or diastolic ≥ 90 mmHg, should be referred to the ANDU (or G2/G3 at weekends or out of hours) for further surveillance. Severe cases may need to be referred to labour ward.

Further surveillance will include:

- Monitoring of fetal wellbeing by CTG
- Monitoring of the blood pressure to include 4 x ¼ hourly readings, or more often if there are concerns

- Bloods being sent for FBC, LFT's, U+E's and urates, clotting.
- Urine sent for MSSU in presence of proteinuria (1+) on dipstick

The findings of these investigations will be reviewed by the on call registrar with a possible admission or transfer to the labour ward if required.

Hypertension in which there is a single diastolic blood pressure of 110 mmHg or two consecutive readings of 90 mmHg at least 4 hours apart and/or significant proteinuria (1+) should prompt further investigation which may include a 24hr urine collection. Proteinuria is defined as 300 mg excretion of protein in a 24 hour collected urine or two clean catch urine specimens at least 4 hours apart with 2+ proteinuria by dipstick.

If the systolic blood pressure is above 160 mmHg on two consecutive readings at least 4 hours apart, treatment should be considered.

References:

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005*'. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

Medicines and Healthcare Products Regulatory Agency (MHRA) 2008: *Measuring blood pressure: Top Ten Tips: Advice for Healthcare Professionals* [online] available at: www.mhra.gov.uk/home/idcplg?IdcService=GET_FILE&dDocName [Accessed on 23.2.2009]

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

3.5.3 FLOWCHART FOR THE MANAGEMENT OF RAISED BLOOD PRESSURE

Diastolic blood pressure ≥ 90 mmHg with or without proteinuria or Systolic ≥140 mmHg.

NB Systolic ≥ 160 mmHg admit for further assessment and probable treatment

Repeat BP 30+ minutes later

Diastolic <90, Systolic < 140 and asymptomatic

Ensure woman knows signs of pre-eclampsia. Review 1-2 weeks

Diastolic BP remains ≥ 90 mmHg, Systolic remains ≥ 140 mmHg

Contact
Monday – Friday 0900 –1630 hours
Antenatal Day Assessment Unit
72 6725

Contact
Out of Hours
Wards G2 or G3
726002 / 726003

Antenatal Day Unit / Ward
Further assessment undertaken to include:

- ¼ hourly BP measurements over 1 hour
- Urinalysis from MSSU (>0.3g protein → Quantative Protein (QP) → 24 Hour urine dependant on result
- Bloods: FBC, U&E's, LFT's, Urate, and Coagulation.
- Fetal assessment by CTG

Subsequent management – woman asymptomatic
Depends on results of further investigations but as a rough guide the table below gives an indication of follow up needed.

Subsequent management – woman symptomatic
Depends on results of further investigations but woman generally admitted and may need to commence treatment

		Proteinuria (g/L)		
		0	0.3	>0.3
Diastolic Blood Pressure (mmHg)	/80	CMW 2/52	CMW 1/52	ANDU 3-4/7
	/85	CMW 1/52	ANDU 3-4/7	ANDU 2/7
	/90	CMW 1/52	ANDU 2/7	Admit
	/95	ANDU 3-4/7	Admit	Admit
	/100	Admit	Admit	Admit
	/105	Admit	Admit	Admit

Further management needs to be on assessed on an individual basis. Referral to The Yorkshire Regional Pre-eclampsia Guidelines dated May 2008 may be necessary.

3.5.4 ITCHING IN PREGNANCY

Mild itching throughout pregnancy is common because of the increased blood supply to the skin and the changing hormones. In late pregnancy the skin of the abdomen is stretched and this may also cause itchiness. 20% of women suffer from some degree of itching skin whilst they are pregnant.

Pre-existing medical conditions such as eczema, psoriasis or dermatitis may also cause itching in pregnancy, as can the use of scented beauty or hygiene products. Viral infections may also cause itching but are usually associated with a rash (see rashes in pregnancy 3.5.6).

Itching, without a rash, which is generally confined to the abdomen and breasts, is not progressively worsening or spreading may be relieved or soothed by:

- Wearing loose cotton clothing
- Dissolving a cupful of bicarbonate of soda in the bathwater
- Using creams containing chamomile or calendula (especially if stored in the fridge and applied cold)
- Avoiding hot, humid conditions
- Washing frequently in cool water and dabbing cold flannels onto the skin

Occasionally, if the itching persists and is causing distress to the woman, provided other causes of itching are excluded, an antihistamine cream or tablet may be prescribed.

Severe generalised itching, without a rash, particularly in the last trimester may be the only sign of a condition known as obstetric cholestasis. This is a potentially dangerous liver disorder, which seems to run in families, although it can occur without any family history. (See 3.5.5 below)

References:

Baby and Pregnancy [online] available at http://www.babyandpregnancy.co.uk/ItchySkinPregnant.html [Accessed on 8.11.08]

Health Protection Agency (2007): *Management of rash illness and exposure in pregnancy* [online] available at: http://www.hpa.org/infections [Accessed on 8.11.08]

Net Doctor [online] available at http://www.netdoctor.co.uk/womenshealth/facts/skinrash_pregnancy.htm [Accessed on 8.11.08]

The Pregnancy Book (2007) [online] available at http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance [Accessed on 8.11.08]

3.5.5 OBSTETRIC CHOLESTASIS

For fuller and more detailed information please also refer to the Maternity Services Guideline 'Obstetric Cholestasis' January 2007 which can be found in guideline folders on G2/G3/ANDU/ANC and Labour ward.

Obstetric Cholestasis occurs when bile secretion becomes impaired in the liver, resulting in a build up of bile acids in the bloodstream. These acids are then deposited in the skin which leads to severe, progressive and worsening itching, usually presenting on the palms of the hands or soles of the feet but which may become more widespread. In severe cases women may also develop jaundice.

No clear cause has been found for the bile abnormality although hormones and genes have been suspected to be behind it. 50% of women who develop the condition will have a family history of it.

It is most common in the South American (especially Chilean and Bolivian) and Scandinavian population (2.5%) with a 1.5% risk in the Indian-Asian and Pakistani population and less than 1% in European women. It typically presents after 28 weeks but can be earlier. Early detection is important as there is a risk of premature labour, still birth and an increased risk of maternal haemorrhage after the delivery.

Management for the suspicion of cholestasis:

An accurate history needs to be obtained from those women who present with itching in pregnancy with the more common causes being excluded first.

If the itching is persistent, progressive or spreading, blood should be taken for LFTs and bile acid. As viral infections will also cause a rise in the LFTs, it may take a few visits to the consultant team to confirm or exclude a diagnosis of obstetric cholestasis. However, a raised bile acid with or without abnormal LFT's is usually indicative of obstetric cholestasis

If the blood results are normal but the itching persists, bloods should be repeated as it sometimes takes a few weeks of symptoms before an abnormal blood result is obtained.

Normal Biochemistry/Cholestasis range

Liver function	Non Pregnant range YH	Pregnant range**	Suspicious of cholestasis/abnormality
ALT	7-34	6-27	>27
AL:P	30-130	(32-100) 133-418	Not relevant
GGT	11-50	5-41	Not tested routinely
Bilirubin	0-17	3-14	Rare alteration
Bile salt (acid)	0-14	0-14	>14
AST*	7-40	10-30	>31

*AST is not routinely used in York Hospital

**Pregnancy values are approximately taken as 80% of the non pregnant range. Each trimester has a slight variation, but grouped together for simplicity without affecting outcome. Multiple pregnancies have a higher range.

Management following 1st abnormal LFT:

- ALT>27 but <30 and woman under 26 weeks

If the woman is healthy with a low risk pregnancy, repeat the bloods in one week. If this is still raised or the woman is symptomatic she should be referred to the ANDU or ANC for further investigation under the care any consultant except Miss Dean (this is only as Miss Dean is based in Selby). If you are uncertain about your decision, contact either the sister in antenatal clinic or the registrar on call for advice.

- ALT > 27 and woman over 26 weeks pregnant or >30 and under 26 weeks pregnant

Refer to the ANDU as soon as results are known for further investigation. If out of hours and the baby is active, this can wait until the following day. If there is a history of reduced movements, further investigations should not be delayed and the woman may need admitting to the wards.

Subsequent management:

This will be dependent on severity of symptoms, abnormality of initial blood results and whether there are other obstetric risk factors in the pregnancy. Each woman will be assessed individually and a management plan organised by the consultant team.

Women need to be made aware of the need to exclude other causes of the raised ALT and the good outcome of a confirmed obstetric cholestasis when monitored.

1 Bloods will be required to check:
   - LFT, and bile acid
   - U+ E's, urates and clotting
   - Fbc
   - Hep A, B and C (also Hep E if recently visited an endemic area)
   - Epstein Barr virus, toxoplasma and cytomegalovirus
   - Autoantibody screen: anti-smooth muscle (ASM), antinuclear factor (ANF) and antimitochondrial antibodies (AMA).
   - Immunoglobulins IgA, IgG, IgM.
2 Perform CTG
3 Perform BP and urinalysis to exclude pre eclampsia
4 Arrange ultrasound for growth and liquor
5 Arrange an ultrasound of liver to exclude liver causes of pregnancy and should be organised and performed within 48hrs

It is unnecessary to arrange admission to the ward unless other obstetric or medical factors indicate otherwise.

Using URSO or antihistamines:

If pruritus is severe, URSO (ursodeoxycholic acid) may be offered. The use, pros and cons, should be discussed with the woman prior to it being prescribed. There is no clinical evidence that URSO improves the pruritus or outcome of obstetric cholestasis, but it has been shown to reduce the abnormal liver function and therefore may avoid early intervention. Although the LFTs may return to normal the underlying disease process continues and does not reduce the risk to the baby.

No antihistamine has a licence for use in pregnancy. Piriton may be used if the woman is desperate, but she needs to understand it may make her or the baby sleepy.

Ongoing management:

A water soluble (menadiol) form of Vitamin K (phytomenadione) –-10mg orally should be prescribed daily from diagnosis until delivery.
Weekly LFT, bile salts, clotting studies (prothrombin time) and CTG on ANDU with review by consultant team.
Referral to a gastroenterologist may be indicated and usually occurs if the condition is severe or there are other concerning factors that do not seem typical of cholestasis. This is at the discretion of the obstetric consultant.

Induction at 38-39 weeks (again at the discretion of the consultant) may be offered and should occur on labour ward, being treated as high risk. Recent evidence of early induction has not demonstrated

an alteration in the unexpected stillbirth rate nor the perinatal mortality, but the increased antenatal monitoring has shown a reduction in the number of late stillbirths.

References:

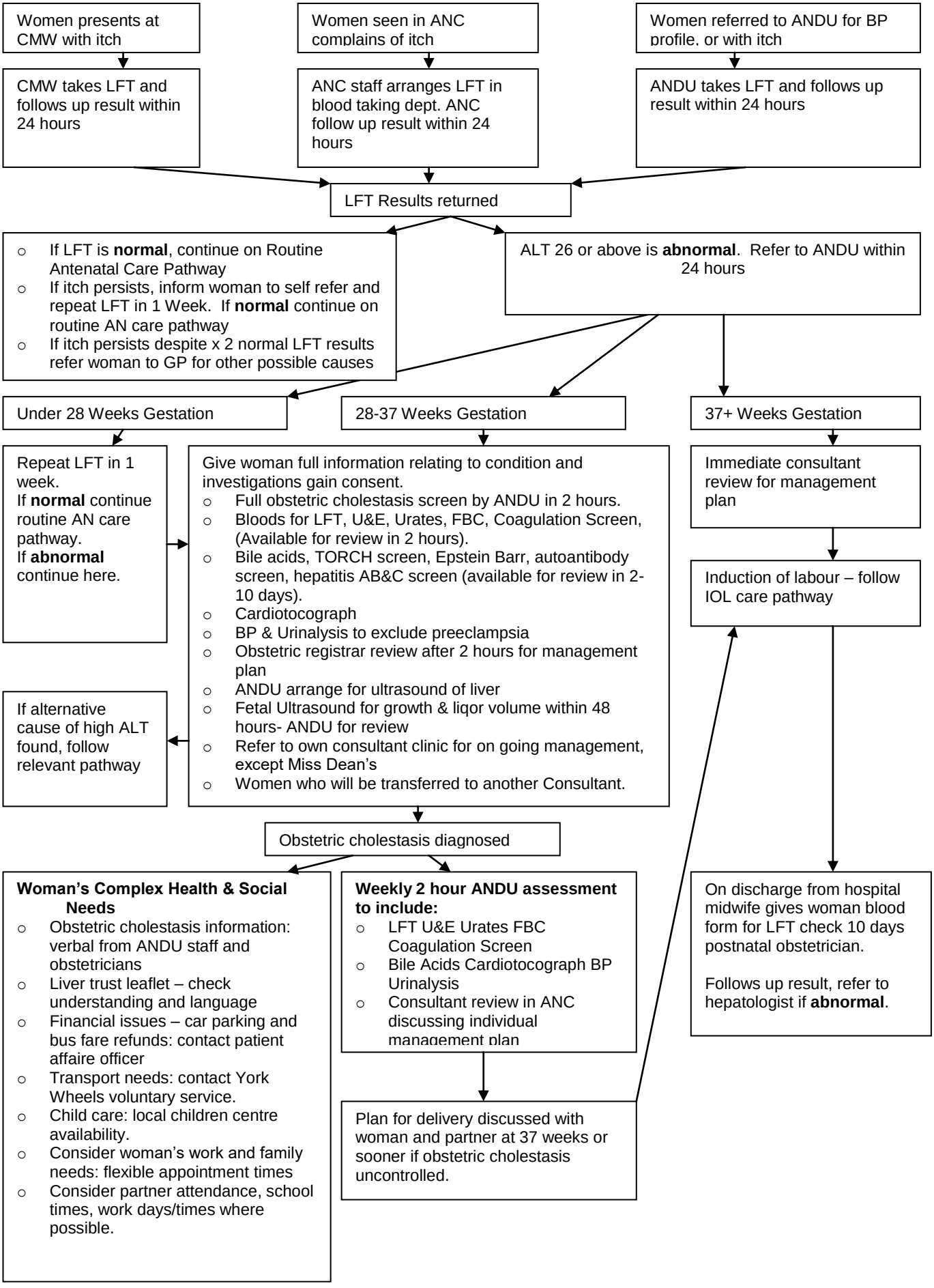
Milkiewicz P, Elias E, Williamson C, et al (2002)**:** *Obstetric cholestasis*. British Medical Journal (BMJ): Jan 19; 324(7330):123-4.

Royal College Of Obstetricians and Gynaecologists (2006) Guideline 43: *Obstetric Cholestasis* [online] available at http://www.rcog.org.uk/resources/Public/pdf/obstetric_cholestasis43.pdf [Accessed on 8.11.08]

Royal College of Obstetricians and Gynaecologists (2007) [online] available at http://www.rcog.org.uk/index.asp?pageID=1931 [Accessed on 8.11.08]

York Maternity Services Guideline (2007): *Obstetric Cholestasis*

3.5.6 FLOWCHART FOR MANAGEMENT OF OBSTETRIC CHOLESTASIS



3.5.7 RASHES AND SKIN DISORDERS OF PREGNANCY

Pregnant women are susceptible to any kind of skin condition that could just as easily arise when they are not pregnant. However pregnancy can change the appearance and consequences of these rashes and the condition causing the rash may also have harmful effects on the pregnancy
Causes of rashes include:

- Allergies
- Medicines
- Insect bites
- Skin infections
- Viral infections
- Parasites
- Tumours
- Connective tissue disorders

Medical advice should be sought if any skin changes occur that seem abnormal.

Women presenting with any non-vesicular (blistering) rash compatible with systemic infection should be investigated for rubella and Parvovirus irrespective of a prior history of rubella vaccine or positive rubella antibody test. (for further detail please read section 3.2.11 'Rubella screening' and section 3.3.13 'Parvovirus infection' within this document)

Certain skin disorders (dermatoses) are believed to occur as a direct result of the gestational process. These are:

- **PUPP (pruritic urticarial papules and plaques of pregnancy).**

This condition, also sometimes known as toxaemic rash, is the most common dermatosis of pregnancy, occurring in around 0.5% of pregnancies. Recent studies in France have found it to be caused by invasion of the mother's skin by foetal cells.

Signs and symptoms:

- red raised spots or bumps that itch strongly.
- the rash usually starts on the abdomen and spreads to the thighs. Occasionally, the rash spreads to arms and buttocks. The face is never involved.
- the rash usually appears after 34 weeks of pregnancy and disappears after childbirth, but can recur with subsequent pregnancy.

It is harmless to mother and child and can be treated with topical steroids together with sedative oral antihistamines. Sometimes oral steroids are necessary.

- **Prurigo gestationis.**

This condition occurs in around 1 in 300 pregnancies. It comes in two forms: an early form and a late form.

Signs and symptoms:

- very itchy red dots.
- In the middle months of pregnancy (early form**)** the dots appear on upper trunk and upper parts of arms and legs. In this form, the abdomen and buttocks are rarely involved.
- In the late form (occurring in the last week of pregnancy)**,** the rash is found mostly on the abdomen, usually on stretch marks. After delivery, this form may spread to the entire body.
- The rash usually completely clears within three weeks of childbirth.

This condition is generally not associated with any serious complications in mother or baby and is diagnosed after ruling out other conditions. Symptoms can be relieved by use of sedative antihistamines tablets.

- **Impetigo herpetiformis.**

This is a very rare but acute skin condition of pregnancy similar to pustular psoriasis

Signs and symptoms:

- groups of small, pus-filled blisters develop irregularly or in curved or spiral-shaped clusters After a few days the blisters scab and the rash dries up, then new blisters appear at the edges of the dried up rash. Several circles of this type may be produced as the disease progresses.
- mild itching, burning sensation and hair loss can occur in the area of the rash
- severe illness including chills, fever, vomiting, diarrhoea and joint pain always accompanies the rash
- usually begins in groins, underarms, and the folds of knees and elbows. The disorder can affect the mucous membranes of the mouth and genitals where it looks like a greyish erosion (shallow ulcer).
- usually begins in the last trimester and disappears after childbirth, although sometimes it leaves residual marks or scars.

If this disease is not treated promptly, the maternal death rate is high, and so too is the rate of stillborn babies. Intensive treatment with steroids and ACTH (adrenocoticotrophic hormone) produces good responses.

- **Pemphigoid gestationis (or herpes gestationis).**

Another rare condition, completely unrelated to the more common herpes simplex virus

Signs and symptoms:

- moderate-to-severe itchy rash consisting of different types of lesion (raised dots or bumps, fluid-filled blisters or blebs, or a combination).
- usually seen on the abdomen, particularly around the navel, and also on arms and legs. Palms and soles are frequently affected. The entire body may also be involved.
- most likely to appear during the fourth and fifth month of pregnancy, but can occur before or after. This condition can be seen in the first pregnancy or in successive pregnancies for the first time.

Complications for the mother may include scarring from secondary infection and a possibility of kidney damage. For the baby there is a possibility of premature birth, and of being born with the rash, but this usually clears up by itself. The disease is treated with oral steroids following identification by skin biopsy.

(See Dermnet web link for photographs of the above skin dermatoses)

References:

Crafter, H. (2003): Problems of Pregnancy. Ch. 18. In: D.M. Fraser and M.A. Cooper M.A. eds. *Myles Textbook for Midwives.* 14th edition. Edinburgh: Churchill Livingstone. pp 295-320.

Health Protection Agency [online] available at: http://www.hpa.org.uk/web/HPAweb&HPAwebStandard/HPAweb_C/1195733772869. [Accessed on 8.11.08]

Dermnet – online information from New Zealand Dermatological Society http://www.dermnetnz.org/site-age-specific/pregnancy.html [Accessed on 29.1.09]

Net Doctor [online] available at: http://www.netdoctor.co.uk/womenshealth/facts/skinrash_pregnancy.htm [Accessed on 8.11.08]

Royal College of Obstetricians and Gynaecologists (2007) Green top guideline 30: *Management of Genital Herpes in Pregnancy* [online] available at: http://www.rcog.org.uk/resources/Public/pdf/greentop30_genital_herpes0907.pdf [Accessed on 9.11.08]

3.5.8 SMALL FOR DATES

Fundo-symphysial height, measured in centimetres, approximates to the number of weeks gestation after 20 weeks of pregnancy (Weiner and Baschat 1999). The fundal height should be measured after 24 weeks gestation, at each antenatal appointment i.e. every 2-3 weeks (Perinatal Institute 2006), as trends are as important as absolute values.

Variations of fundo-symphysial height > 3cm should be investigated further (Gilbert and Harman 2003). The aim is to identify a growth-restricted fetus.

Causes

- Inaccurate dates
- Oligohydramnios
- IUGR

(James et al 2000)

Fundal Height < 3cm of gestational age

↓

Refer to ANDU or Consultant Team via ANC

↓

Investigations:

- Check EDD with early USS
- Exclude SRM – history
- Fetal assessment
- Arrange USS - growth
  - liquor volume
  - doppler if indicated by abnormal growth or liquor volume.

NB: IUGR diagnosed with conviction after serial scans.

↓

Management:

- **AC > 5th centile**
  Liquor – normal → Community care
- **AC > 5th centile**
  Doppler abnormal
  And/or Liquor abnormal → Seek medical advice
  CTG – normal
- **AC < 5th centile**
  CTG – normal → ANC within 7 days
  Doppler/ USS normal
- **AC < 5th centile**
  Reduced Liquor → Seek medical advice
  and/or abnormal Doppler

References:

Gilbert, E.S. and Harman, J.S. (2003): *Manual of High Risk Pregnancy and Delivery.* 3rd ed. Missouri. Mosby.

James, D.K. et al. (2000). *An Obstetrics and Gynaecology Vade Macum*. London. Arnold.

Weiner, C.P. and Baschet, A.A. (1999). James, D.K. et al (eds). *High Risk Pregnancy Management Options*. London. W.B. Saunders.

Perinatal Institute (2006): *Pregnancy Notes – Version 7.1.* Birmingham.

3.5.9 LARGE FOR DATES

Fundo-symphysial height, measured in centimetres, approximates to the number of weeks gestation after 20 weeks of pregnancy (Weiner and Baschat 1999). The fundal height should be measured after 24 weeks gestation, at each antenatal appointment i.e. every 2-3 weeks (Perinatal Institute 2006), as trends are as important as absolute values.

Variations of fundo-symphysial height > 3cm should be investigated further (Gilbert and Harman 2003). Excessive growth predisposes the baby to shoulder dystocia, traumatic birth injury or asphyxsia.

Causes:

- Underestimated gestational age
- Maternal obesity
- Multiple pregnancy
- Polyhydramnios
- Normal large-for-gestational-age infant
- Macrosomic infant
- Extrauterine mass

(James et al 2000)

Fundal Height >3 cm of Gestational Age

↓

Refer to ANDU or Consultant Team via ANC

↓

Investigations

- Check EDD with early USS
- Arrange USS - growth – if > 97th centile -> arrange GTT
  - liquor volume – if polyhydramnios confirmed -> arrange GTT

↓

Subsequent management

↓

Dependent on individual diagnosis and Obstetrician.

References:

Gilbert, E.S. and Harman, J.S. (2003): *Manual of High Risk Pregnancy and Delivery.* 3rd ed. Missouri. Mosby.

James, D.K. et al. (2000). *An Obstetrics and Gynaecology Vade Macum*. London. Arnold.

Weiner, C.P. and Baschet, A.A. (1999). James, D.K. et al (eds): *High Risk Pregnancy Management Options*. London. W.B. Saunders.

Perinatal Institute (2006): *Pregnancy Notes – Version 7.1*. Birmingham.

3.6 MATERNAL ILLNESSES

3.6.1 DIABETES IN PREGNANCY

Women with pre-existing diabetes should be referred to the joint diabetes/antenatal clinic at the earliest opportunity for management (see also 'Diabetes in pregnancy' NICE clinical guideline 63 available from www.nice.org.uk/CG063)

Gestational Diabetes

Gestational diabetes is defined as carbohydrate intolerance resulting in hyperglycaemia of variable severity with onset or first recognition during pregnancy and with a return to normal after birth. It includes women who have both diabetes and impaired glucose tolerance (IGT).
Women who develop gestational diabetes are at increased risk of developing type 2 diabetes in later life.

Diabetes in pregnancy is associated with adverse fetal and maternal outcomes e.g. macrosomia, congenital abnormalities, IUGR, IUD/stillbirth, birth trauma, increased risk of pre-eclampsia, pre-term labour, IOL, instrumental delivery, LSCS.

Recommendations on screening for gestational diabetes:

Screening for gestational diabetes using risk factors is recommended in a healthy population.

At the booking appointment, the following risk factors for gestational diabetes should be determined:

- body mass index above 30 kg/m²
- previous macrosomic baby weighing ≥ 4.5 kg
- previous gestational diabetes
- family history of diabetes (first-degree relative with diabetes – not husband)
- family origin with a high prevalence of diabetes:
  - South Asian (specifically women whose country of family origin is India, Pakistan or Bangladesh)
  - black Caribbean
  - Middle Eastern (specifically women whose country of family origin is Saudi Arabia, United Arab Emirates, Iraq, Jordan, Syria, Oman, Qatar, Kuwait, Lebanon or Egypt).

Women with any one of the above risk factors should be offered testing in the form of a glucose tolerance test for gestational diabetes

In addition, women who present with:

- Glycosuria on 2 or more occasions on EMU*****
- Thirst or polyuria
- Polyhydramnios (on USS)
- Large for dates baby in present pregnancy (on USS)

should also be offered testing for gestational diabetes.

***N.B** Although NICE do not recommend routine testing for glycosuria in pregnancy, local audit suggests continued surveillance as over the last 12 years two cases of women with severe diabetes and poor pregnancy outcomes were identified by glycosuria alone.

Testing for gestational diabetes will normally be carried out at 24-28 weeks gestation in the form of an oral glucose tolerance test (OGTT), but early OGTT (16-18 weeks) will need to be performed in those women with a previous impaired OGTT or gestational diabetes, with a further OGTT at 28 weeks if the

results are normal (see OGTT guideline for procedure) Screening for gestational diabetes using fasting plasma glucose, random blood glucose, glucose challenge test and urinalysis for glucose should not be undertaken
In order to make an informed decision about screening and testing for gestational diabetes, women should be informed that:

- in most women, gestational diabetes will respond to changes in diet and exercise
- some women (between 10% and 20%) will need oral hypoglycaemic agents or insulin therapy if diet and exercise are not effective in controlling gestational diabetes
- if gestational diabetes is not detected and controlled there is a small risk of birth complications such as shoulder dystocia
- a diagnosis of gestational diabetes may lead to increased monitoring and interventions during both pregnancy and labour.

Women with an abnormal OGTT are referred to the joint diabetes/antenatal clinic for information on:

- self monitoring of blood glucose
- the role of diet, body weight and exercise
- the increased risk of having a baby which is large for dates and it's associated risks,
- the importance of maternal glycaemic control during labour and birth and early feeding of the baby in order to reduce the risk of neonatal hypoglycaemia
- the possibility of transient morbidity in the baby during the neonatal period, which may require admission to the neonatal unit
- the risk of the baby developing obesity and/or diabetes in later life.

as well as the continued surveillance of the pregnancy and management of any complications.

References:

British Medical Association (2004): *Diabetes Mellitus an update for healthcare professionals.* London: BMA publications unit.

Confidential Enquiry into Maternal and Child Health (2005), '*Pregnancy in 2002 for women with type 1 and type 2 diabetes'* [online]. London: Royal College of Obstetricians and Gynaecologists. Available at: http://www.cemach.org.uk/publications/CEMACHdiabetesOctober2005.pdf [Accessed on 19.11.08].

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 63 *'Diabetes in pregnancy: Management of diabetes and its complications from pre-conception to the postnatal period'* London

3.6.2 MATERNAL EPILEPSY

The majority of women with epilepsy have healthy pregnancies and give birth to healthy children but because of the slightly higher risk of complications the pregnancy is classed as high risk and a referral to an obstetrician in the 1st trimester is advised with input from a neurologist if indicated.

Genetic counselling maybe considered appropriate if one partner has epilepsy that is idiopathic and/or there is a strong family history.

Maternal complications associated with maternal epilepsy:

- Increase in seizures (reported in about 1/3rd of women). This may be due to sleep deprivation, falling drug levels (due to hormonal changes and/or changes in metabolism) or non-compliance with anti-epileptic drugs for fear of causing harm to unborn baby.

NB Seizures in pregnancy (and in the early post natal period) are generally avoided if there is compliance with medication and a discussion on management of triggers that cause the woman to have her seizures.

- Sudden unexpected death in epilepsy (SUDEP). Although the risk in pregnancy is not thought to be greater than in the non-pregnant state, epilepsy can be more difficult to control in pregnancy thus increasing the risk of SUDEP.

Fetal complications associated with maternal epilepsy:

- Congenital malformation, especially spina bifida, hole in the heart and cleft palate. The risk of these is about 4% as opposed to 2% in women who are not on anti-epilepsy medication. Mothers who need more than one anti-epileptic drug have the highest risk of congenital malformations. Sodium Valporate (Epilim) is associated with the highest risk and mothers on this medication will usually be advised to see a specialist before conception to have this changed.
- Low birth weight
- Small fingers and toes with small nails (may not be permanent)
- Facial abnormalities such as wide set eyes.
- Higher risk of Vitamin K deficiency if mum is on an enzyme-inducing anti-epileptic drug (e.g. carbamazepine, oxcarbazepine, phenobarbital, phenytoin, primidone, and topiramate).

N.B. Women should be advised not to stop their medication in pregnancy but to have it reviewed with a specialist if they are concerned. The risks of stopping medication are more problematic than the risks of continuing with it.

To reduce the risk of fetal complications:

- Folic acid 5mg/day should be prescribed pre-conceptually (or as soon as possible after pregnancy has been confirmed) to minimize the risk of neural tube defects. **N.B.** Folic acid may interact with certain anti-epileptic drugs (phenytoin, phenobarbital and primidone), making them less effective. Women on these drugs need to seek advice from their specialist before commencing folic acid.
- From 36/40 a water soluble (menadiol) form of Vitamin K should be prescribed by the obstetrician, 10mg/day orally, to prevent neonatal haemorrhagic disease.
- Babies born to mothers taking anti epileptic drugs should be given a 1mg dose of Vit K intramuscularly at delivery

Unborn babies are rarely harmed by their mother having a seizure, unless the mother falls and injures herself. The more seizures the mother has, the greater the risk of damage to the baby.
Although the risk of seizures during labour is low, it is sufficient to warrant delivery in an obstetric unit. Mothers who have a particular anxiety about seizures in labour, or those with an increase in seizures during pregnancy may be advised to take clobazam 10mg daily.

TENS machines, Entonox and epidural anaesthesia are all suitable methods of pain relief, but Pethidine is not recommended as it can increase the risk of seizure. Diamorphine may be considered as an alternative to Pethidine.

Women should be advised to carry a supply of their anti-epileptic drugs with them at all times and bring a supply of them into hospital, as even a change in brand can potentially affect seizure control. It is important that they take their medication at their usual times.

Breastfeeding is appropriate in the majority of cases but women should be advised not to take their baby into bed with them. For further information on the safety of their medication whilst breastfeeding, call the drug information line 01904 725960.

All pregnant women should be encouraged to notify the UK Epilepsy and Pregnancy Register (www.epilepsyandpregnancy.co.uk). There are also a number of valuable resources that may be obtained by contacting 'Epilepsy Action' via www.epilepsy.org.uk or by phoning 0113 210 8800. In addition there is a free phone helpline for women 0808 800 5050 or text 07797 805 390.

Further information may also be obtained from the epilepsy specialist nurse, currently Mary Clark 01904 725742

References:

Crawford P, (2005) '*Epilepsia'* 46(a):117-124 cited in *'Anti-epileptic drugs and seizures in pregnancy'* Fact sheet 2. Available from Epilepsy Action at: www.epilepsy.org.uk

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

National Institute for Health and Clinical Excellence (NICE) 2004: Clinical Guideline 20: *The Epilepsies: The diagnosis and management of the epilepsies in adults and children in primary and secondary care.* London.

'Mothers in Mind' (2008) available from Epilepsy Action: epilepsy@epilpesy.org.uk or www.epilepsy.org.uk.

Royal College of Midwives in association with The Joint Epilepsy Council of the UK and Ireland (1996): *Guidelines for Women with Epilepsy*

3.6.3 MATERNAL HEART DISEASE

Women with known heart disease should be booked as soon as possible and referred to the Consultant team for any early appointment.

Pregnancy puts an increased strain on the heart due to a 40% increase in cardiac output. The physiological changes that normally occur in pregnancy can compromise the conditions of women with heart disease, often leaving them with minimal cardiovascular reserve. The potential seriousness of cardiac conditions in pregnancy should not be underestimated and minor signs and symptoms should not be disregarded. However, most women with congenital heart disease can undergo pregnancy without significant risk provided their care is managed by a consultant obstetrician in conjunction with a cardiologist.

Cardiac conditions that put the woman at high risk of maternal death include:

- severe aortic stenosis
- impaired left ventricular function
- pulmonary hypertension
- Marfan syndrome with dilated aortic root

These women with cardiac disease may need specialist fetal cardiac screening and, in certain cases, pre pregnancy genetic counseling.
In addition, women with artificial heart valves may need anticoagulation therapy throughout pregnancy.

Most women will be advised they can deliver vaginally in a local hospital setting, but in certain circumstances delivery in a specialized unit will be recommended.
Antibiotic prophylaxis in labour should be given in line with NICE (2008) guidance 'Prophylaxis against infective endocarditis'

Caesarean section is only indicated for those women in whom straining at delivery could be potentially fatal (i.e., those with Marfan syndrome, aortic aneurysm, severe fixed left heart obstruction, or the acutely unwell mother) or for obstetric complications.

Cardiac disease is currently the commonest cause of indirect death as well as of maternal deaths overall (CEMACH, 2007). In general this is thought to be due to the growing incidence of acquired heart disease in younger women related to less healthy diets, smoking, alcohol and obesity. Any woman with a suspected or known cardiac disease in pregnancy should be referred to a cardiologist.

Women at higher risk of developing cardiac disease in pregnancy, i.e.:

- the obese
- those who smoke
- who have existing hypertension and/or diabetes
- with a family history of heart disease
- and those over the age of 35

should be appropriately counselled of these risks pre-conception and particularly prior to receiving assisted reproductive technology (ART) or other infertility treatment.

Women in pregnancy or who have recently delivered presenting with:

- severe chest pain
- chest pain that radiates to the neck, jaw or backbone
- chest pain associated with other features such as agitation, vomiting, breathlessness, tachycaridia, tachypnoea or orthopnea

should have their cardiac enzymes checked, an ECG (electrocardiogram), chest x-ray, echocardiogram and CT pulmonary angiography performed to exclude possible cardiac complications.

In early pregnancy (ideally before 16 weeks) all nulliparous women or women who enter the UK in pregnancy should have a full medical examination of heart and lungs carried out by their GP. This should also take place for multiparous women if there is no documentation of this check being performed in a previous pregnancy.

References:

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

Mooney, M. *British Journal of Midwifery*: Vol. 15, Issue. 2, 01 Feb 2007, pp 76 – 78

National Institute for Clinical Excellence (NICE) 2008, Clinical Guideline 64:'*Prophylaxis against Infective Endocarditis: Antimicrobial prophylaxis against infective endocarditis in adults and children undergoing interventional procedures'* London

Wallis, H. Thorne, S. *Women's Health,* Vol. 2, Number 5, September 2006 pp. 743-752(10)

3.7 POST TERM PREGNANCY

3.7.1 POST TERM PREGNANCY DEFINITION AND MANAGEMENT

A post-term pregnancy is defined as a pregnancy that extends beyond 42 weeks**.** The reported frequency is approximately 3-12% with a male gender of the fetus increasing the chances.

The most frequent cause of post term pregnancy is inaccurate dating. Although the last menstrual period (LMP) has been traditionally used to calculate the estimated due date (EDD), many inaccuracies exist using this method especially in women who have irregular cycles, have recently used hormonal methods of contraception, or who have first trimester bleeding.

The use of ultrasound early in pregnancy has greatly improved the reliability of the EDD. However, there is still a margin of error reported at various times during each trimester with this method. Therefore, an EDD by ultrasound scan must still be considered an estimate.

Complications:

Between 40 and 41 weeks - no appreciable increase in perinatal morbidity and mortality
Greater than 42 weeks - the perinatal mortality rate is double that at term.
43 weeks – there is as 6 fold increases in perinatal mortality and morbidity.

In addition, pregnancies extending up to or beyond 42 weeks are at risk for:

- macrosomia
- shoulder dystocia
- brachial-plexus injuries
- cephalopelvic disproportion
- Dysmaturity syndrome. (Dysmaturity syndrome affects 20% of post term fetuses and is thought to be caused by chronic utero-placental insufficiency resulting in oligohydramnios, meconium aspiration, and reversible neonatal complications).

Maternal risks include an increase in:

- labour dystocia
- perineal injuries
- caesarean deliveries

These complications support the idea that well dated pregnancies should not be allowed to progress beyond 42 weeks of gestation, but there are still some variations in thought as to how a pregnancy between 41 and 42 weeks should be managed.

Management of post term pregnancy:

In a low risk pregnancy this will predominantly be dependent on the woman's preference.
In pregnancies where risks may be developing (e.g. non-reassuring surveillance, oligohydramnios, growth restriction) the decision whether to deliver will be in discussion with the woman and a consultant obstetrician.

NICE (2008) suggests that induction of labour (IOL) can be offered from 41-42 weeks, but in York we tend to offer IOL for low risk pregnancies from 41+3-42 weeks**. *If a woman requests IOL prior to 41+3, she should discuss this request with a consultant.***

The main argument against routine induction of labour of low risk pregnancies at 41-42 weeks is that induction increases the rate of caesarean delivery without decreasing maternal and/or neonatal morbidity.

None of the methods used for IOL are trivial interventions. They require careful monitoring of fetal and maternal well being.

Prior to formal induction of labour, women should be offered a vaginal examination for membrane sweeping. This should be offered at 40 and 41 weeks. Women should be informed that membrane sweeping makes spontaneous labour more likely, and so reduces the need for formal induction of labour, but that discomfort and vaginal bleeding are possible from the procedure.

From 42 weeks, women who decline induction of labour should be offered increased antenatal monitoring which usually involves at least twice weekly CTG's and USS for liquor volume (oligohydramnios is associated with fetal compromise).

For further information and methods of IOL, see guideline titled 'Induction of Labour' kept in the guidelines folder on G2/G3/ANDU/ANC and Labour ward.

References:

Butler, J. (2006) [online] 'Post term pregnancy' available at:
http://www.emedicine.com/med/topic3248.htm [Accessed on 9.11.08].

National Institute for Health Clinical Excellence (NICE) 2008: Clinical Guideline 70: *Induction of labour*. London

[Online] available at: http://www.medical-library.org/journals2a/postterm_pregnancy.htm[Accessed on 9.11.08].

3.7.2 POLICY FOR BOOKING INDUCTION OF LABOUR (I.O.L) APPOINTMENTS BY COMMUNITY MIDWIVES FOR LOW RISK PREGNANCIES.

To save unnecessary appointments at the hospital antenatal clinic community midwives can now arrange I.O.L. appointments for women who are post dates and having low risk pregnancies.

Appointments can be arranged by phoning: **07932402253**

This number MUST ONLY be used for arranging post dates appointments.

To ensure this service runs smoothly:

- Only phone for I.O.L. appointments once the woman has reached 40+5.
- Appointments will only be offered to women who are 40+10 to 40+14 weeks (by dating/nuchal scan). This WILL NOT BE NEGOTIABLE. If a woman needs I.O.L. for medical reasons, the consultant team will have arranged this.
- Any discrepancy between dates must have been addressed earlier in the pregnancy.
- Stretch and membrane sweep should be offered at the 40w appointment and again at 41w.
- Women should be given the I.O.L. leaflet and asked to phone the ward at 8am on the morning of their appointment to ensure a bed is available.
- Explain to the woman that on occasions, due to unit activity, their induction may be delayed.
- Reinforce the need to monitor fetal activity, and if concerned, ring ANDU or delivery ward (out of hours).
- If I.O.L is declined, refer to consultant team.
- If there are no I.O.L. slots available between the 40+10 and 40+14 day period, then the woman will need to be referred to ANC.

Ensure that the I.O.L. checklist is discussed with the woman and then placed in her hand held notes to be taken to hospital with her.

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3.7.3 INDUCTION OF LABOUR (I.O.L.) CHECKLIST

York Hospitals NHS
NHS Foundation Trust

Obstetrics, Gynaecology and Sexual Health Directorate
Maternity Services

Completion of this checklist and discussion points should be commenced by the practitioner arranging the I.O.L. appointment. It must be given to the woman to keep in her hand held notes to bring with her to the hospital. The checklist should be completed a 2nd time by the midwife caring for the woman in the hospital setting and then filed in her hospital obstetric notes.

Action	1st completion: Date/Sign	2nd completion: Date/Sign
Reason for I.O.L discussed, i.e. post dates and increased risk of baby developing health problems once >42 weeks.		
Induction of labour leaflet given.		
Induction of labour leaflet read and understood, with any questions answered (2nd completion only).		
Propess vaginal pessary will be given for all uncomplicated primips and remain in situ until SRM or contractions start. It should be removed after 24 hours and the patient reviewed for further Prostin if ARM is not already feasible.		
Prostin gel use discussed (for those not receiving Propess) i.e. doses should only be given every 6-8 hours with no more than 2 doses in a 24hr period		
Length of I.O.L. discussed i.e. may take between 1-4 days with a break on day 3.(if Prostin used)		
Propess or Prostin pains discussed i.e. some women experience pain without it actually having an effect on the cervix		
Monitoring of baby using CTG machine for minimum of 30 minutes following insertion of Propess or Prostin gel but remaining on bed for 1 hour		
Use of ARM either as an I.O.L. or an augmentation process and describe the procedure		
Use of oxytocin may be required to stimulate contractions.		
Transfer to labour ward discussed i.e. when need for either ARM (provided a bed is available) or established labour		
Pain relief options discussed		
Failure of I.O.L. or problems occurring during the process resulting in need for Em.LSCS discussed.		

1st practitioner: Print name:

2nd practitioner: Print name:

Patient name and signature:

Patient name and signature:

3.8 MISCELLANEOUS

3.8.1 MATERNAL WEIGHT

Maternal Weight should be recorded at the first visit and at 36 weeks. Women with a BMI ≤18 at booking are at an increased risk of having a small for date's baby and should be referred to consultant care.

Obesity is a recognised risk factor for a range of antenatal, intrapartum and postnatal complications with Maternal BMI ≥ 30 being a recognised risk factor for:

- Hypertension and pre-eclampsia
- Gestational diabetes
- Difficulty with physical examinations
- Thromboembolic disease
- Fetal macrosomia
- Difficulty in monitoring fetal heart rate
- Prolonged labour
- Increased rate of LSCS
- Difficult operative procedures
- Risks associated with anaesthesia
- Wound infections
- Shoulder dystocia
- Maternal Death

The latest Confidential Enquiry into Maternal Deaths (CEMACH 2007) states that 35% of women who died had a BMI ≥30. It further recommends that women with BMI ≥35 are unsuitable for midwifery led care and should deliver in a consultant unit. In order to make pregnancy safer for obese women, it should be acknowledged that they represent a 'high risk pregnancy'.

Management

- All women should have their booking **weight** and **BMI** recorded in the notes.
- Women with a BMI between 30 and 40 should be given the patient information leaflet on 'Pregnancy and Obesity'.
- Women with BMI ≥30 at booking should have a Glucose Tolerance Test, arranged through ANC.
- Women with a BMI ≥35 at booking should be referred for consultant led care.
- Women with BMI ≥40 at booking should be referred to the Lead Obstetric Anaesthetist irrespective of the planned mode of delivery. This is done by consultant unit team
- Dietary advice should be given and referral to dietician offered.

For further information refer to:
Guidelines on Management of Obese Parturients
Bariatric Guidelines in the Manual Handling Resource Pack
Pregnancy and Obesity Patient Information Leaflet

References:

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

CKH, Yu, Teoh, T.G., Robinson, S. *Obesity in Pregnancy.* British Journal of Obstetrics and Gynaecology: vol 113(10).

3.8.2 TWINS

The diagnosis of twins may come as a shock to some mothers. They will need extra support and advice regarding planning ahead, managing existing children, work and the increased physical discomfort.

All twin pregnancies should be considered as high risk and an obstetric referral is appropriate.

The essentials of antenatal care are:

- More frequent antenatal visits
- Iron and folate supplementation
- Serial fetal growth scans
- Extra rest
- Advice about Preterm labour

Remember to offer contact with any or all of the following Twins clubs:

TAMBA (Twins & Multiple Births Association)
2 The Willows
Gardner Road
GUILDFORD
Surrey
GU1 4PG
Tamba Twinline:
Confidential help line: 0800 1380509 (10am – 1pm and 7pm – 10pm every day).
E-mail: asktwinline@tamba.org.uk
Website: www.tamba.org.uk

Also www.multiplebirths.org.uk

Or:
York Parents of Twins Club:
Monthly meetings for mums and mums to be
Monthly newsletter
Days/nights out
Contact Kathryn Wood by emailing: secretary@yorktwinsclub.org.uk

For antenatal classes for twins or more or any additional information/support contact:
Ismet Metcalfe
Delivery Ward
York Hospital

Tel: 01904 726004
E-mail: ismet.metcalfe@btinternet.com

Support group for breast feeding twins: ring Caroline on 01904 622296

References:

[Online] available at *http://www.tamba.org.uk/information-for-profesionals.php* [Accessed on 30.1.2009]

[Online] available at *http://www.tamba.org.uk/downloads/mw%20guide.pdf* [Accessed on 30.1.2009]

3.8.3 BREECH PRESENTATION

The incidence of breech presentation at term is 3-4% (RCOG 2006b). The Term Breech Trials in 2000 (Hannah et al) have demonstrated that perinatal mortality is reduced if a breech fetus is delivered by caesarean section; therefore if the fetus remains breech, mode of delivery needs to be discussed with the consultant.
All women with singleton breech presentation in an uncomplicated pregnancy should be referred to a Consultant at 36 weeks gestation for consideration of external cephalic version (ECV) which will not be carried out before 37 weeks because if performed before 37 weeks the chance of reverting back to breech is increased.

Caesarean section would be recommended on current available information, but if the woman makes an informed choice to aim for a vaginal delivery, the size of the fetus may be estimated by USS. Vaginal breech birth should take place in hospital.

[See 3.8.4 below - ECV guideline for further information]

References:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

Hannah, M (et al) (2000): Term Breech Trial. *The Lancet* vol 356, issue 9239. 21st October 2000. pp 1375-1383.

Royal College of Obstetricians and Gynaecologists (RCOG) 2006b: *Guideline No. 20: The Management of Breech Presentation.* [online] Available at: http://www.rcog.uk [Accessed on: 27.1.08]

Royal College of Obstetricians and Gynaecologists (RCOG) 2006a: *Guideline No. 20a External cephalic Version and Reducing the incidence of Breech Presentation [*online] Available at: http://www.rcog.uk [Accessed on: 27.1.08]

3.8.4 EXTERNAL CEPHALIC VERSION (ECV)

Introduction & Scope

3 - 4% of pregnancies are breech at term (RCOG 2006). One way to avoid the dilemma of vaginal delivery or caesarean section is to perform an External Cephalic Version (ECV). We would anticipate a success rate of around 50%, which would half the incidence of breech presentations at delivery. However the caesarean section rate is increased for this group.

This guideline is for all Maternity staff involved in undertaking or assisting with an ECV.

Definition

External Cephalic Version (ECV) is the term used to describe turning the fetus from breech to cephalic presentation by external manipulation.

Guideline Statement

To ensure the lowest risk of compromise to both mother and baby the following contraindications should be considered.

Contraindications:

- Patient refusal
- <37 weeks + 0 days
- Multiple pregnancy
- Placenta praevia
- Antepartum haemorrhage
- Ruptured membranes
- Caesarean section necessary for another reason
- Rhesus iso-immunisation
- Severe fetal anomaly
- Fetal distress
- Pre-eclampsia
- IUGR
- Poor obstetric history
- Oligohydramnios
- Marked maternal obesity

Relative Contraindications:

- In labour
- Previous caesarean section/uterine surgery (e.g. myomectomy)
- Medical conditions that may increase pregnancy risk e.g. diabetes

Arrangements:
The following principles should be observed:
Gestation must be from 37 weeks.
Ensure the patient receives an ECV information leaflet and has the opportunity to discuss the procedure.
Arrange an appointment with consultant and Antenatal Day Assessment Unit.

Pre version
Ensure the following:
Fetal well-being with CTG
Maternal well-being
Dates >37 weeks
Rhesus status – if Rhesus negative, arrange for Anti D 500iu to be dispensed

Presentation and liquor volume by use of portable USS
Tocolysis should be achieved by Nifedipine 20mg orally, at least 20 mins before ECV

Technique
The mother is positioned in a lateral tilt to avoid aorto-caval obstruction.

The portable ultrasound is used to determine fetal position and intermittently for the fetal heart rate.

Oil (not arachis oil as it is peanut based) or talc is applied to the abdomen to minimise friction of the operator's hand across the skin.

Direction of version is dependent upon fetal position, a forward roll may be used in the first instance & if unsuccessful a backward roll may be attempted.

A maximum of 3 attempts is performed. Each attempt should not last longer than 3 minutes with at least 3 minutes rest between attempts.

Post attempt
Success should be determined by portable USS.
Ensure fetal well-being by repeating CTG.
If Rhesus negative, Kleihauer bloods to be taken prior to Anti D being given. When Kleihauer result available, further Anti D may be required.

If ECV unsuccessful – discussion with consultant for vaginal delivery or caesarean section at 39/40 (ref: term breech trial). If caesarean section planned within 5 days, c/s bloods to be taken.

If ECV successful – an Antenatal appointment should be made for 1 week to confirm presentation.

Audit
To enable auditing of ECV an audit form should be completed and left in the marked folder in ANDU.

References:

Royal College of Obstetricians and Gynaecologists (2006): *The Management of Breech Presentation.* [online] Available at :http://www.rcog.org.uk/guidelines [Accessed on 1.2.2009]

National electronic Library for Health (1996) *External Cephalic Version for Breech*. [online] Available at: http://www.nelh.nhs.uk [Accessed on 1.2 2009]

National Institute of Clinical Governance (NICE) 2003: *Routine Care for the healthy pregnant woman*. London:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

Author:	J. Dwyer, Consultant, B. Frost, Midwife.
Reviewed by:	H. Farrow, Risk Manager, Consultants - N. Dean, J. Dwyer, O Jibodu, S. Mitchell, ANDU Midwives – G. Clemmit, L. Copeland.
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3.8.5 PRE LABOUR RUPTURE OF MEMBRANES (SPONTANEOUS RUPTURE OF MEMBRANES)

Pre labour rupture of membranes (PROM) is defined as the spontaneous rupture of membranes after 37 weeks gestation and before the onset of labour. It occurs in 6-19% of all term pregnancies. (EMIS 2007)

Pre-term premature rupture of membranes (PPROM) is defined as the spontaneous rupture of membranes before 37 weeks gestation and occurs in 2% of all pregnancies, but is associated with 40% of preterm deliveries and can result in significant neonatal morbidity and mortality (RCOG 2006) Risk factors for pre-term premature rupture of membranes are:

- Smoking
- Previous preterm delivery
- Vaginal bleeding at any time during the pregnancy

Women with suspected PROM or PPROM should be advised to attend the hospital for assessment. Women at term, booked for home confinement will be assessed at home during the working day by their community midwife.

Presentation:

The woman may give history of a 'popping sensation', or a 'gush' with continuous watery liquid draining thereafter. Underwear or pad may be damp.

Action:

- Take a history from the woman, including record of recent fetal movements.
- Undertake abdominal palpation and auscultation of FH with pinnard for one minute. A sonicaid may also be used for parental reassurance. A CTG is not necessary for low risk women with cephalic presentation and presenting part ≤ three fifths palpable on whom no problems are identified.
- Maternal temperature, pulse and blood pressure should be recorded. Where PROM is confirmed the temperature will be used as a baseline for four hourly temperature checks.
- Where liquor is seen or where there is a certain history a speculum examination is not necessary.
- Women with an uncertain history or where no liquor is visible should be offered a speculum examination to determine whether their membranes have ruptured by visualisation of a pool of liquor at the base of the cervix after the woman has rested on the bed for 60 minutes.
- Vaginal examination should be avoided in the absence of contractions as it may transfer bacteria to the upper vaginal tract increasing risk for neonatal infection.
- Where diagnosis is not possible, e.g. unstable lie, high head or malpresentation further investigation will be required.

Women presenting with prelabour rupture of the membranes at term should be advised that:

- the risk of serious neonatal infection is 1% rather than 0.5% for women with intact membranes
- 60% of women with prelabour rupture of membranes will go into labour within 24 hours
- Induction of labour is appropriate approximately 24 hours after rupture of the membranes.

Initial management:

Women should be offered a choice of induction of labour with vaginal prostaglandin or expectant management of up to 24-36 hours provided they meet the criteria below

- Apyrexial
- Clear liquor draining
- No problems identified with the FH
- Cephalic presentation, three fifths palpable or more engaged.

- Singleton pregnancy
- Considered low risk

Women who meet the criteria may decide whether they wish to stay on an antenatal ward or to go home. There is no need to transfer to consultant care.
Where a woman does not meet this criteria management should be discussed with the duty registrar.

Induction of labour should not exceed 96 hours as the risk of maternal and fetal infection increases after this time. (NICE 2008)

N.B. Women with a history of GBS infection and at term should be offered IOL immediately

At Home or on transfer to the ward:

Women will be given an advice sheet entitled 'Going home with ruptured membranes, what you need to know'.

Until induction is commenced:

- To ensure the risk of infection remains low, four hourly temperature recordings are required during waking hours using 'Tempadots' and any change in colour or smell of vaginal loss should be reported.
- Fetal movements and heart rate should be assessed every 24 hours after initial assessment.
- A time for return for review 24 hours following PROM should be given to those women who choose to go home.
- Sexual intercourse should be avoided as it can be associated with an increase in infection but bathing and/or showering causes no problems.

There is no indication to perform lower vaginal swabs or take blood for maternal C-reactive protein

If labour has not started 24 hours after rupture of the membranes, women should be advised to give birth in a hospital setting with access to neonatal services and advised to stay in hospital for at least 12 hours following the birth.

Subsequent management:

- If there is evidence of infection in the woman, a full course of broad-spectrum intravenous antibiotics should be prescribed. If undelivered, induction of labour should not be delayed.
- Antibiotics should not be given to either mum or baby if there are no signs of infection, even if the membranes have been ruptured for over 24 hours.
- Asymptomatic term babies born to women with PROM ≥ 24 hours before labour should be closely observed for the first 12 hours of life (at 1 hour, 2 hours and then 2-hourly for 10 hours). These observations should include:
    - general wellbeing
    - chest movements and nasal flare
    - skin colour including perfusion, by testing capillary refill
    - feeding
    - muscle tone
    - temperature
    - heart rate and respiration.

Women who had prelabour rupture of the membranes should be asked to inform their healthcare professionals immediately of any concerns they have about their baby's wellbeing in the first 5 days following birth.

- Symptomatic babies or those born to a woman who has evidence of chorioamnionitis, should immediately be referred to a neonatal care specialist for investigation that may include blood, cerebrospinal fluid and/or surface culture tests

Management of pre term prelabour rupture of membranes (PPROM):

Diagnosis, monitoring and the need for further investigation for women who present with PPROM will be at the discretion of individual consultants and in discussion with the woman. Once confirmed:

- Erythromycin (250 mg orally 6 hourly) should be given for 10 days. Co-amoxiclav is not recommended because of concerns about necrotising enterocolitis
- Two doses of IM steroids (usually Betamethasone in York) should be administered 24 hours apart (not if >36 weeks pregnant)
- Induction of labour should not be carried out before 34 weeks unless there are additional obstetric indications (for example, infection or fetal compromise).
- The consultant should discuss the following factors with the woman before a decision is made about whether to induce labour:
    - risks to the woman (e.g. sepsis, possible need for caesarean section)
    - risks to the baby (e.g. sepsis, problems relating to preterm birth)
    - local availability of neonatal intensive care facilities.

Evidence shows that expectant management of women at 34 weeks and beyond is of limited benefit.

References:

EMIS mentor (2007) [online] available at:
http://www.patient.co.uk/showdoc/40024668/ [Accessed on 12.11.08]

National Institute for Health and Clinical Excellence (NICE) 2006: Clinical Guideline55:
Intrapartum care: Care of healthy women and their babies during childbirth. London.

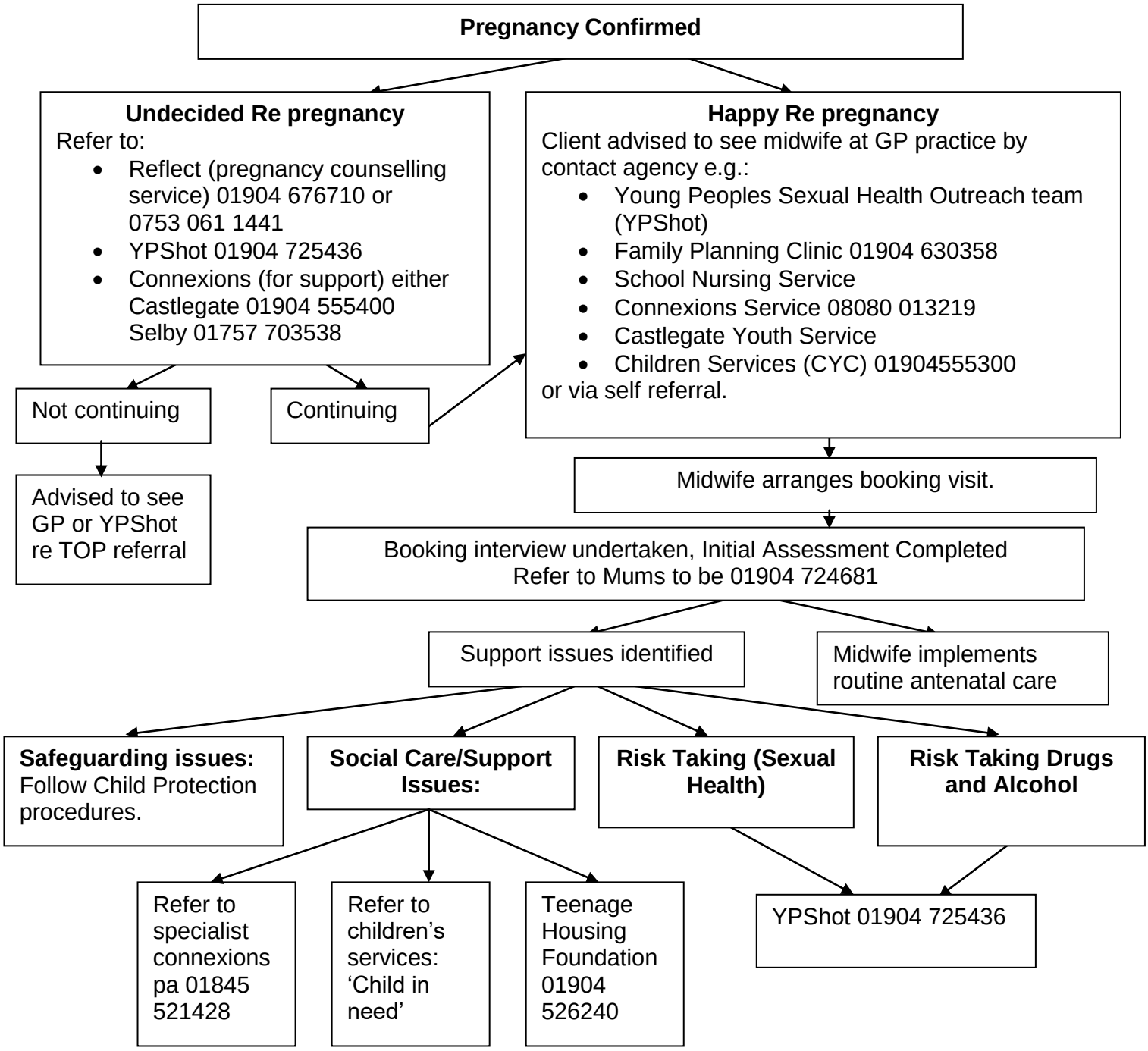
National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62:
Antenatal care: Routine care for the healthy pregnant woman. London.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 70: *Induction of Labour.* London

Royal College of Obstetricians and Gynaecologists (2006) Green Top Guideline 44: *'Preterm Prelabour Rupture of Membranes'* [online] available at:
http://www.rcog.org.uk/resources/Public/pdf/green_top44_preterm.pdf [Accessed on 12.11.08]

3.8.6 TEENAGE PREGNANCY

Care Pathway for the Effective Management of Pregnant Women under 19 Years of Age



NB: Teenagers < 16 should be booked for consultant led care as they are at greater risk of a SFGA baby.

References:

City of York Council (COYC) Teenage Pregnancy Strategy in partnership with: The Council, Selby and York PCT, York Hospital Trust, Connexions and Voluntary Sector [online] available at: http://www.york.gov.uk/education/Schools_and_colleges/School_-_general_information/Teenage_pregnancy/ [Accessed on 14.11.08]

City of York Council (Yor-oK) (2007): Children and Young peoples plan 2007-2010 [online] available at: http://www.york.gov.uk/education/Schools_and_colleges/School_-_general_information/Childrens_and_young_people_plan/ [Accessed on 14.11.08]

Reflect Pregnancy Counselling Service [online] available at: www.reflectyork.co.uk [Accessed on 14.11.08]

Teenage Pregnancy Strategy [online] available at: http://www.everychildmatters.gov.uk/teenagepregnancy/ [Accessed on 14.11.08]

Social Exclusion Unit (1999): Teenage Pregnancy Reports [online] available at: http://www.literacytrust.org.uk/Database/Exclusion.html [Accessed on 14.11.08]

3.8.7 SMOKING IN PREGNANCY

Smoking (including passive smoking) during pregnancy can cause serious problems including complications during labour, increased risk of miscarriage, premature birth, placental abruption and even stillbirth.

The most damaging effects from smoking happen after the first trimester, so stopping within the first 14-16 weeks is most beneficial. However, stopping at any stage will be good for the baby.

Babies born to mothers who smoke:

- Are more likely to be born prematurely and with a low birth weight (below 2.5kg or 5lb 8oz).
- Have a birth weight on average 200g (7oz) less than those born to non-smokers. This effect increases proportionally - the more the mother smokes, the less the child weighs.
- Have organs that are smaller on average than babies born to non-smokers.
- Have poorer lung function and are more susceptible to colds and coughs. Babies born to women who smoked 15 cigarettes or more a day during pregnancy are taken into hospital twice as often during the first eight months of life.
- Are twice as likely to die from cot death. There seems to be a direct link between cot death and parents smoking.
- Get painful diseases such as inflammation of the middle ear and asthmatic bronchitis more frequently in early childhood.
- Are more likely to become smokers themselves in later years.
- Have a higher chance of developing lung cancer when they are adults

Smoking cessation advice should be given at booking, 20, 28 and 34 week antenatal appointments and following delivery.
Women who smoke should be offered a smoking cessation programme by a specialist smoking cessation advisor. However, evidence based discussion about the health risks to mum and baby should be given by any relevant health professional i.e. Midwives, GP's Health Visitors.
(For referral to specialist smoking cessation programmes see referral pathway below)

Prescribing replacement therapy is assessed on an independent basis and by an appropriately qualified professional. It can include the use of items such as nicotine gum, tablets, and sprays. Clients present health status and current guidelines need to be taken into account when prescribing.

Research suggests that clients who smoke ≥20/day should be on a shared care pathway and may require extra screening such as ultrasound scans and blood pressure readings to monitor development of conditions such as IUGR and raised BP.

References:

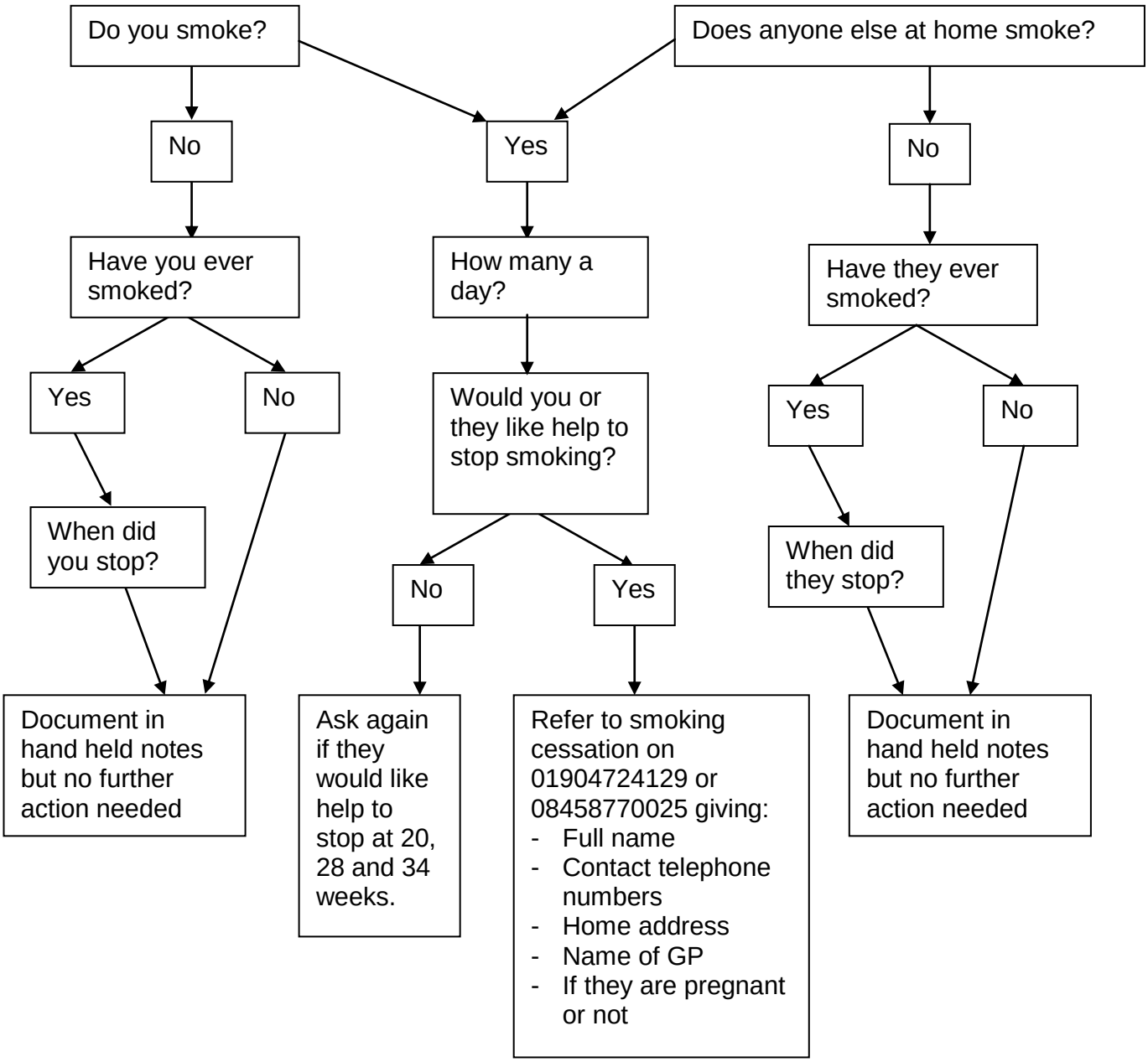
Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

[Online] *'Smoking Harms Unborns'* available at**:** http://gosmokefree.nhs.uk/questions/smoking-and-pregnancy/?WT.mc_id=ilevel_search_08 [Accessed on 10.11.08]

[Online] '*Pregnancy and smoking'* available at:
http://www.netdoctor.co.uk/health_advice/facts/pregnantsmoking.htm
[Accessed on 10.11.08]

3.8.8 PATHWAY FOR SMOKING CESSATION REFERRAL



3.8.9 SUBSTANCE MISUSE

I

Predicting prevalence of substance use and misuse amongst women is difficult with any degree of accuracy; reliable data is not easily available. Local audit results show that in a 2-year period between 2003 and 2005 30 women were identified as problematic drug users during pregnancy. No local information is available regarding the prevalence of problematic alcohol consumption in pregnancy.

'Most pregnant women with substance misuse problems will have a normal pregnancy, labour, delivery and a full-term normal birth weight baby. Most will embrace motherhood and cope well with caring for their children' (Drugscope, 2005).

Substance misuse during pregnancy adversely affects outcomes both medically and socially (Hepburn, 2005) Risks include premature labour, intra-uterine growth restriction, increased perinatal mortality and morbidity.

Provision of maternity services for women who misuse substances is additionally complicated by factors associated with complex lifestyles and social deprivation.

Multi-agency co-operation and a collaborative approach is essential to effective care provision.

It is important that midwives caring for women who misuse substances familiarise themselves fully with the policy entitled 'Policy and Procedures for the Assessment and Management of Substance Misuse in Pregnancy, Labour and Puerperium' which can be found on Horizon as well as within the guidelines folders kept on labour ward, G2/G3/ANDU/ANC

References:

Drugscope (2005) '*Substance Misuse in Pregnancy: A resource book for professionals'* Drugscope. London

Hepburn, M (2005) *Substance Misuse in Pregnancy. Network – A national newsletter on substance misuse management in primary care*. Issue 12. [online] available at: http://www.smmgp.org.uk [Accessed on 9.4.06]

York Hospitals Trust (2008) *Policy and procedures for the Assessment and Management of substance Misuse in Pregnancy, Labour and Pueperium.*

Shared care model for pregnancy management in substance misusing women

Usual booking (8-10wks) by CMW, Plus:

- Usual bloods + Hep C screening if consented to
- Give 'Pregnant and using alcohol/drugs' leaflet, if not already received, and ensure understanding
- Complete substance misuse liaison form (SMLF) and commence risk assessment (RA)
- Refer to drug/alcohol service if necessary
- Send booking notes in usual manner,(copy set of booking notes if woman has chaotic habit)
- Send SMLF and RA to clinical midwifery manager marked 'private and confidential'
- If DNA – Follow-up and document

Hospital ANC:
10-16 wks – Dating scan
20 wks - Anomaly scan + consultant
28 wks - Consultant + ? growth scan
36 wks - Consultant + ? growth scan
41 wks - Consultant + ? growth scan

- **Update SMLF at every appt**
- **No urine drug testing if results from community available with SMLF**

Midwife gives routine ANC plus:

12-16 wks – Discuss substance use, treatment and goals
24-26 wks - Home risk assessment with Health visitor, plan 30 wk case meeting and social service referral if necessary
30 wks - Case discussion with relevant professionals (see RA form)
34 wks - If not attending prep for birth class plan individualised session + give NAS leaflet, consider SCBU visit
38 wks + - See weekly, monitor substance use, ensure documentation liaison information up to date

- **Update SMLF after every appt**
- **Check up to date urine and prescription results with SMLF**

Child protection issues?
Consult trust child protection policy

No

Ongoing continuous RA
as per risk assessment documentation

Yes

Referral to social services
using child protection and children in need route map

Not sure

Seek specialist advice
Jane Martin
(01904) 726647 or
Margaret Jackson
(01904) 726729.

3.8.11 DOMESTIC ABUSE

Domestic abuse occurs in all parts of society and accounts for 25% of violent crime in the UK. Estimated costs are in excess of £3 billion. However the greatest cost is the human cost to women and families who have to live with abuse and the untoward impact it has on their physical and emotional well being.

The term "domestic abuse" is now used in preference to "domestic violence", as the latter could be interpreted as relating to physical abuse alone. It also covers issues that mainly concern women from minority ethnic backgrounds, such as forced marriage, female genital mutilation/cutting (FGM/FGC) and so-called "honour crimes".

Domestic abuse is defined by the Home Office as:

"Any incident of threatening behaviour or abuse (psychological, physical, sexual, financial or emotional) between adults who are or have been intimate partners or family members, regardless of gender or sexuality".

Saving Mothers Lives Report 7th CEMACH Report Recommends:

- Where multi-agency support services exist routine questioning should be made about domestic abuse, either at booking or at another appropriate time.
- Women should be seen alone at least once in the antenatal period to provide opportunity for disclosure.
- Midwives should be able to signpost women and be aware of local support services and contact telephone numbers
- Women with known significant features of domestic abuse should not be regarded as "low risk" and should be offered multidisciplinary care in a supportive environment. Where women suffering domestic abuse choose midwifery led care, the midwife should seek the support from her manager and or supervisor of midwives as appropriate.

Midwife's Role:

- Focus on the woman's safety and that of her children.
- Provide appropriate information as recommended above
- Refer to appropriate support agencies.
- Use Antenatal liaison mechanisms to ensure an appropriate response and plan of care.
- Reassure and support the woman
- Be aware of the signs that indicate abuse and behaviours of women suffering abuse
- Keep detailed accurate records.
- Maintain confidentiality having due regard where there are child protection issues.
- Attend domestic abuse training sessions at least every three years.

30% of all domestic abuse begins or intensifies in pregnancy and is a major factor in maternal mental health problems.

References:

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

3.8.12 MENTAL HEALTH

Around 10% of women experience some form of depression during pregnancy and 23% of women who develop postnatal depression start with it in the antenatal period. (Evans 2001).

No one knows for definite why some women get it and others don't but common theories/causes include:

- a chemical or hormonal imbalance, greater than that usually experienced during pregnancy
- ongoing depression or past history of depression (including family history)
- stress caused by major life events e.g. moving home, new job, death of a loved one
- unplanned pregnancy
- pregnancy problems such as hyperemesis
- an overwhelming fear of losing the baby for historical reasons (e.g. previous miscarriage/still birth or years of infertility)
- history of abuse either emotional, physical, sexual or verbal

Symptoms of antenatal depression are the same as all types of depression and include:-

- An inability to concentrate
- Anxiety
- Extreme irritability with others and self
- Sleep problems - either too much or too little
- Eating problems - lack of appetite or eating too much for the sake of it
- Feeling tired all of the time
- Inability to enjoy anything anymore
- Constant sadness - crying more than is usual
- Agoraphobia
- Avoidance of social situations

The consequences of antenatal depression are not well understood or documented but those of postnatal depression are associated with an increase risk of maternal death by suicide (CEMACH 2007). Given that there is correlation between antenatal and postnatal depression, midwives need to be alert to the signs of depression and refer accordingly.

NICE (2007) recommend that at a woman's first contact with services healthcare professionals should ask questions about:-

- past or present severe mental illness including schizophrenia, bipolar disorder, psychosis in a past postnatal period and severe depression
- previous treatment by a psychiatrist/specialist mental health team including inpatient care
- a family history of perinatal mental illness.

If a woman answers 'yes' to the 1st or 2nd bullet points above, she should be booked consultant led care.

In addition, two questions should be asked to identify possible depression:

- During the past month, have you often been bothered by feeling down, depressed or hopeless?
- During the past month, have you often been bothered by having little interest or pleasure in doing things?

A third question should be considered if the woman answers 'yes' to either of the initial questions.

- Is this something you feel you need or want help with?

If there are any concerns, refer the woman to her GP.

Other specific predictors, such as poor relationships with her partner, should not be used for the routine prediction of the development of a mental disorder.

All health professionals need to be mindful of the stigma and shame in relation to mental illness but if they have concerns that a possible mental health problem has been identified, then referral for further assessment should be made.

For women who develop mild or moderate depression during pregnancy the following should be considered:-

- self-help strategies (guided self-help, computerised cognitive behavioural therapy or exercise)
- non-directive counselling delivered at home (listening visits)
- brief cognitive behavioural therapy and interpersonal psychotherapy.

Although there are concerns about the use of antidepressants in pregnancy, treatment may be necessary, especially if the benefits outweigh the risks.

Women who have, or are suspected of having, a severe mental illness (e.g. bipolar disorder or schizophrenia), should be referred to a specialist mental health service. The woman and her family (with woman's consent) should be made aware of this referral. Best practice would involve a written care plan covering pregnancy, delivery and the postnatal period developed in consultation with the woman and her family and all health care professionals involved in her care.

Women who have a current mental health disorder or history of severe mental illness should be asked about their mental health at all appointments.

Women with a previous history of depression or other mental health problems should ideally be offered referral to a Mental Health team. Direct referral to Mental Health Team by midwives is currently not available in all areas across York. Women in whom risks of mental health have been identified will be referred by her GP or the Consultant leading her care.

References:

Antenatal depression [online] available at: http://www.babyworld.co.uk/information/pregnancy/health/emotions/antenataldepression1.asp [Accessed on 20.11.08]

Lewis, G (Ed) 2007: The Confidential Enquiry into Maternal and Child Health (CEMACH). *'Saving Mothers' Lives: Reviewing Maternal Deaths to Make Motherhood Safer-2003-2005'*. The Seventh Report on Confidential Enquiries into Maternal Deaths in the United Kingdom. London: CEMACH.

Evans, J et al (2001) '*Cohort study of depressed mood during pregnancy and after childbirth'* BMJ 2001, 323, 257-260 [online] available at: http://www.bmj.com/cgi/reprint/323/7307/257.pdf [Accessed on 25.11.08]

National Institute for Health and Clinical Excellence (NICE)(2007)in partnership with the National Collaborating Centre for Mental Health (NCCMH) *Antenatal and Postnatal Mental Health The Nice Guideline on Clinical Management and Service Guidance* [online] available at: http://www.nice.org.uk/nicemedia/pdf/CG45fullguideline.pdf [Accessed on 17.11.08]

3.8.13 COUNSELLING FOR MATERNITY SERVICES

Aim:
To provide a counselling service which meets the needs of women who have experienced a pregnancy loss or who have unresolved feelings after the birth of a baby. The service is provided by Karen Frodsham who is a qualified counsellor. She works on Mondays only and is available to talk between 07.45 – 07.55am and 12.15 – 12.30pm if more information or advice is needed.

Criteria for referral to Karen:

- women who are currently pregnant
- women up to 12 weeks postnatal (including those who have miscarried)

Referrals:
Any healthcare professional can refer women who fall into the above criteria. The following details are required:

- Client's name
- Reason for referral
- Daytime contact number.

Referrals can be made in the following ways:

- Writing the details in the counsellor's message book which is kept in the midwives' office in ANC
- Telephoning 6730 and the staff will take the details
- By letter which is left in the counsellor's basket in the ANC midwives office
- By hospital email system

Other support services that may be of value include:

- Meet a mum 01761 433598
- Wellbeing 0207 262 5337
- NCT 0870 444 8707(national number. Local number, which changes regularly is then given out).
- www.apni.org
- www.depressioninpregnancy.org.uk

3.9 REFERRAL PATHWAYS

3.9.1 REFERRAL TO EPADS

Ultrasound has revolutionised the management of bleeding in early pregnancy and is vital in confirming a viable intra-uterine foetus. Full use of the Early Pregnancy Advisory Day Service (EPADS) should be made.

1 Only gestational ages between 6 weeks and 16 weeks will be seen on EPADS (with a current positive pregnancy test required if referred before 8 weeks)
2 Vaginal swabs may be offered to exclude infection as a cause of the bleeding and the cervix may be visualised to exclude cervical ectropian
3. All suspected ectopic pregnancies should be referred as acute admissions rather than be seen on EPADS.
4. Reassurance scans are not routinely offered, as dating scans should now reassure women. However, if there is a history of 3 or more consecutive miscarriages or a past ectopic or molar pregnancy, a reassurance scan may be appropriate. These should be booked through ANC ultrasound dept. rather than be seen on EPADS.
5. Non-sensitised rhesus negative women should only receive Anti-D immunoglobulin in the following circumstances :(see also section 3.4.6 'Guideline for routine Anti-D prophylaxis')
    - Ectopic pregnancy
    - All miscarriages over 12 weeks (threatened or actual)
    - All miscarriages where the uterus is evacuated/instrumented
    - Threatened miscarriages under 12 weeks where bleeding is severe (i.e. requiring IV fluids) or associated with pain.
6. There will be 7 slots Monday to Friday:
    3 for rescans and 4 for new patients
    There will be 7 slots on Sunday for new patients only.
7. Referrals can be made by MW, GP, A+E, out of hours service or walk in centre by ringing EPADS directly on 01904 726489.

Women who continue bleeding after they have been seen on EPADS and who have a viable intrauterine pregnancy diagnosed do not need re-referral unless:

- The bleeding changes from altered blood to fresh blood
- The bleeding becomes heavy (fresh or altered) with clots being passed
- The bleeding becomes associated with pain or the pain increases where pain was already present
- The bleeding recommences after a period of no bleeding

Women who are seen on EPADS after 8 weeks of pregnancy do not need a further dating scan. **If an EPADS scan is used to date the pregnancy**, **a copy of the result is given to the woman to give to her named community midwife for filing in the woman's hand held notes.**

If an appointment for the dating scan had already been made, then it will automatically be cancelled.
If no dating scan appointment had been made, then the woman will be advised just to book for her mid-trimester scan.

A copy of the letter 'How to arrange your next appointment following your scan on EPADS' should be given to all women who attend this service. (See appendix H).

References:

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman*. London

York Hospitals Trust Policy (2008) titled *'Human Anti D immunoglobulin administration policy'* available on the Trust intranet.

3.9.2 REFERRAL TO ANTENATAL DAY UNIT (ANDU)

ANDU is open Mon – Fri 08.30 – 18.00

Referrals to the unit can be made by:

- Antenatal clinic
- Community midwife
- GP
- Consultant/registrar
- Walk in centre
- Other e.g. A&E, labour ward
- Woman herself

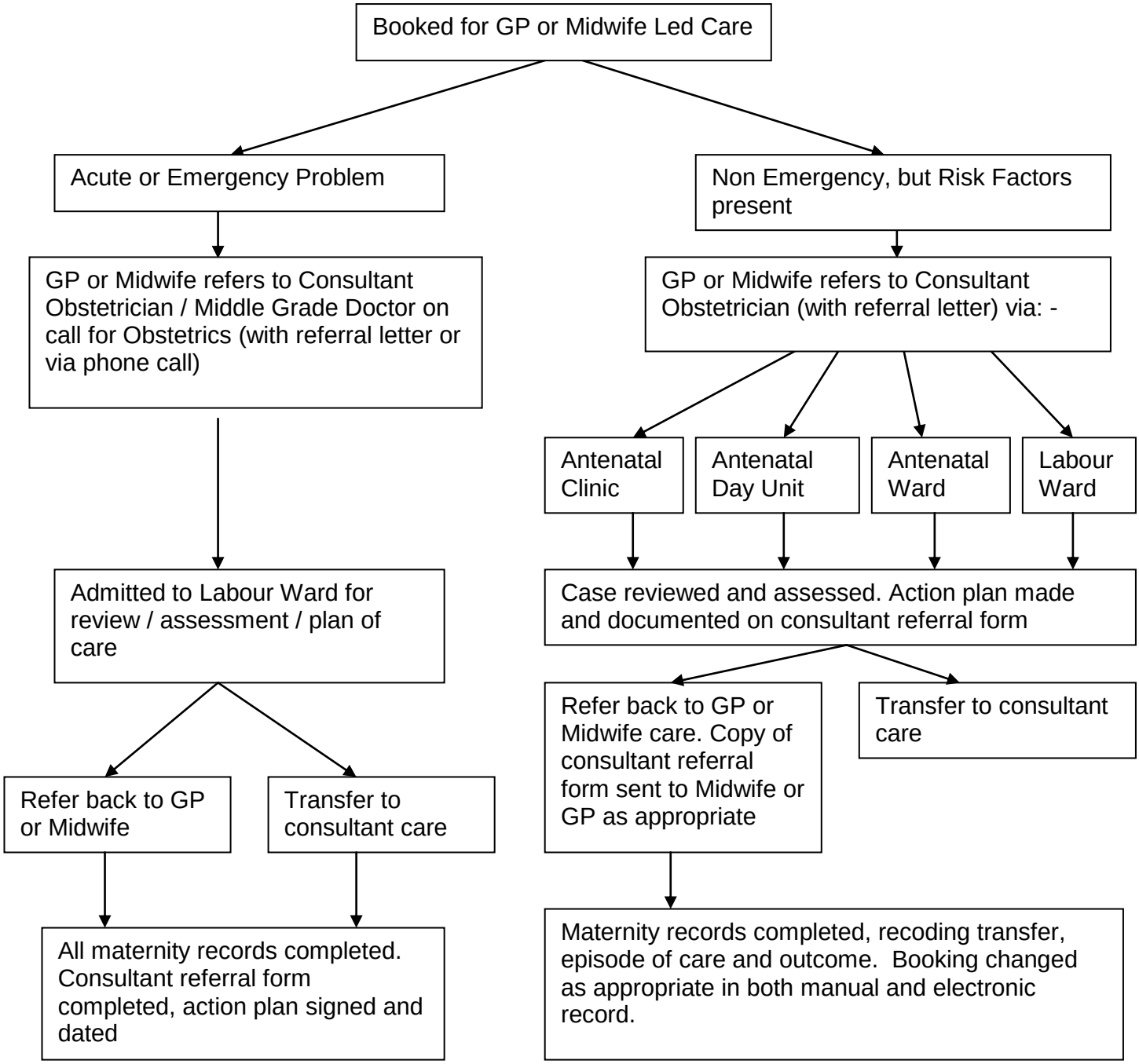
Referral Criteria include:

- Pregnancy induced hypertension
- Decreased/altered fetal movements
- Large for dates
- Small for dates
- External cephalic version
- Glucose tolerance test
- Post term CTG
- Poor obstetric history
- Obstetric cholestasis
- Ongoing care following confirmed SRM
- Miscellaneous others

Exclusion Criteria:

- Vaginal loss/bleeding
- Abdominal pain/contractions
- SRM

3.9.3 REFERRAL FLOWCHART TO CONSULTANT LED CARE FROM GP / MIDWIFE LED CARE



Authors:	Kath Thompson, Liz Ross and Jim Dwyer
Reviewed by:	Joanna Lishman, Hilary Farrow
Date of 1st issue:	Dec 2003
Version:	3
Date of version issue:	March 2009
Approved by:	Obstetric Clinical Governance Team
Date approved:	March 2009
Review Date:	March 2012

3.9.4 REFERRAL LETTER FROM MW TO CONSULTANT IN ANTENATAL PERIOD

York Hospitals NHS
NHS Foundation Trust

ID Label or: Name: D.O.B EDD

Reason for referral

Referred to……..

Gestation……..…

? Breech at 37 weeks ☐

APH ☐

Suspected SFGA ☐

Suspected Polyhydramnios ☐

Unstable lie ☐

Raised blood pressure ☐

Other reason (please state below) ☐

……..

……..

……..

Midwife's signature…….. Date of referral……..

Action by Medical Team

……..

……..

……..

……..

Plan of care

Continue with Midwifery care ☐

Transfer to Consultant unit ☐

Consultant/Registrar signature……. Date……..

NB. A COPY OF THIS FORM MUST BE RETURNED TO COMMUNITY MIDWIFE

3.9.5 REFERRAL FOR PHYSIOTHERAPY

Midwives can refer to the Physiotherapist at any stage of pregnancy for the following conditions:-

- Low Back Pain- (LBP)
- Symphysial Pubic Dysfunction (SPD) / Pelvic Girdle Pain (PGP)
- Thoracic discomfort
- Divaricated Recti
- Marked pelvic floor weakness / Stress Urinary Incontinence (SUI)
- Carpal Tunnel Syndrome

A referral card must be completed and sent to the obstetric physiotherapist with the following information –

- Name
- Address
- Telephone number
- Date of Birth
- GP
- Consultant (if applicable)
- D Number
- Reason for referral
- Gestation & EDD
- Midwife referring & date of referral

Contact by telephone will usually be made within 48 hours, with appointments given as soon as possible.

Additional Physiotherapy services include:

- Pelvic/Back pain group session. Self or midwife referral. One hour duration including advice and exercises run weekly, attend x1 session. Follow-up appointments are available throughout pregnancy if needed.
- Individual appointments- new patient or review of problems.

For further information contact the physio - Tel: 726204 or Bleep 786

Early bird sessions are now available in pregnancy to inform women on being comfortable and active. Sessions can be booked between 20-28 weeks of pregnancy by phoning 01904 726204.

3.9.6 REFERRAL TO OBSTETRIC ANAESTHETIC DEPARTMENT

Many women come into contact with the anaesthetists during their pregnancy and delivery, either for help with analgesia or anaesthesia for surgical procedures. It is far better for women who are a potential anaesthetic problem to be seen early on in pregnancy so that various options can be discussed and appropriate arrangements made.

Method of referral:

Referrals should be made to **Dr A Vipond, Consultant Anaesthetist,** with the reason for the referral, EDD and patient details including a contact telephone number. If the referral is more urgent e.g. because the woman is approaching term, then please speak to the anaesthetic secretaries on 01904 725398. They will either arrange for you to speak with Dr Vipond, or if she is not available, put you through to the Obstetric Anaesthetist on labour ward.

Details of the anaesthetic discussion and plan will be in the woman's hospital maternity records, and also in the anaesthetic office on delivery ward (labelled "Obs Alert")

If you meet a women at any stage of pregnancy that you think may be of concern to the anaesthetists, even if they are planning a normal delivery without epidural, please could you ensure that they have been referred. When the woman is admitted in labour please let the duty anaesthetist know and remind them to look in the anaesthetic office for details.

Anaesthetists are worried when:

1. There maybe difficulty or a contraindication to spinal/epidural block.
2. A general anaesthetic could be dangerous; previous anaesthetic problems, abnormal mouths or necks which may make intubation difficult.
3. There is a co-existing condition which may influence analgesia or anaesthesia.

Examples of Referrals:

Listed below are some examples of the things we would like to know about. A complete list would be impossible, so if in doubt, speak to an anaesthetist.

- Cardiovascular Disease e.g. cardiomyopathy, heart valve lesions, previous heart surgery
- Respiratory Disease e.g. cystic fibrosis, bronchiectasis, asthma, shortness of breath that limits normal activity
- Neuro-muscular problems e.g. previous back surgery, muscular dystrophy, myotonic dystrophy, MS, spinal cord injury, rheumatoid arthritis
- Blood Disorders e.g. clotting problems, platelet disorders
- Potential difficult intubations e.g. unable to open mouth fully, poor neck movement
- Any previous anaesthetic problems
- Obesity (BMI > 40). If BMI is between 30 and 40 please give 'Pregnancy and Obesity' leaflet.

Owner Amanda Vipond. Anaesthetic Consultant and Lead for Labour ward.
Date Feb 2008
Review Feb 2011

4. Implementation

The implementation of these guidelines will be the responsibility of the maternity department at York Hospital for those staff employed by the Trust.
Support and information to other professional groups who use these guidelines may be available on request

The guidelines will be available on the Trust intranet for all staff and paper copies will be held in all relevant clinical areas, including all maternity wards, antenatal clinic, antenatal day assessment unit and the three community midwife offices. In addition, each community midwife will be issued with her own personal copy for ease of reference. Further copies may be available on request from the maternity department.

5. Training needs

Relevant training will be given to appropriate staff groups according to the Training Needs Analysis. (See Training Needs Analysis)

6. Monitoring Compliance

Elements of these guidelines will be monitored for compliance as part of the maternity services annual audit programme.

7. Consultation

These guidelines were created following a comprehensive review of existing guidance and the revised documentation is designed to aid regular updates of individual guidelines within the whole document as new evidence becomes available. This revision has involved consultation with staff groups who have specialist knowledge in a given subject area including:

- Moira Brown Antenatal screening
- Bev Frost Antenatal screening
- Chris Foster Obstetric Cholestasis
- Joanna Lishman Substance misuse
- Ismet Metcalfe Twin pregnancy
- Dani Marks Anti-D prophylaxis and rhesus iso-immunisation
- Ginni Smith Teenage pregnancies
- Lynn Spencer Teenage pregnancies
- Mr Jibodu Anti-D prophylaxis and rhesus iso-immunisation
- Kath Thompson Domestic violence and Anti-D prophylaxis
- Karen Williams Substance misuse

The full document has been circulated to the following parties for comment and approval:

- Consultant Obstetricians
- All senior midwifery staff within maternity services (Head of Midwifery, Maternity Matron, Community Team Leaders, Ward Sisters, Clinical Midwifery Managers, Risk Managers for Obstetrics and Gynaecology)
- Chairperson of Maternity Services Liaison Committee

8. References

To aid the revision process each individual guideline includes a full reference list, therefore a full reference list is not included again here.

9. Appendices

9.1	Appendix A	Estimated date of delivery chart
9.2	Appendix B	BMI calculation chart
9.3	Appendix C	Centile charts for gestations over 36 weeks
9.4	Appendix D	Hospital Antenatal clinics
9.5	Appendix E	Community Antenatal clinics – North East Team
9.6	Appendix F	Community Antenatal clinics – Selby Team
9.7	Appendix G	Community Antenatal clinics – South West Team
9.8	Appendix H	Letter 'How to arrange your next appt following EPADS scan
9.9	Appendix J	Record of Booking undertaken at > 12 completed weeks of pregnancy
9.10	Appendix K	Procedure for women who attend CMW clinic without hand held notes
9.11	Appendix L	Procedure for women who do not attend appointments(DNA)
9.12	Appendix M	Procedure for women who decline blood products
9.13	Appendix N	Antenatal Liaison between CMW and Health Visitor
9.14	Appendix 0	Summary of new and updated recommendations within this document

9. APPENDICES

9.1 Appendix A

ESTIMATE DATE OF DELIVERY CALCULATION CHART

Extract from the DoH publication 2007: *The Pregnancy Book: A complete guide to pregnancy, childbirth and the first few weeks with a new baby*.

LMP in bold; *EDD* in italics.

Jan	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Oct	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Feb	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**			
Nov	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*1*	*2*	*3*	*4*	*5*			
Mar	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Dec	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	*5*
Apr	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	
Jan	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	
May	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Feb	*5*	*6*	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Jun	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	
Mar	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	*5*	*6*	
Jul	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Apr	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Aug	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
May	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Sep	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	
Jun	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	
Oct	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Jul	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	*5*	*6*	*7*
Nov	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	
Aug	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*31*	*1*	*2*	*3*	*4*	*5*	*6*	
Dec	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**	**25**	**26**	**27**	**28**	**29**	**30**	**31**
Sep	*7*	*8*	*9*	*10*	*11*	*12*	*13*	*14*	*15*	*16*	*17*	*18*	*19*	*20*	*21*	*22*	*23*	*24*	*25*	*26*	*27*	*28*	*29*	*30*	*1*	*2*	*3*	*4*	*5*	*6*	*7*

GESTATIONAL AGE ASSESSMENT

A provisional estimated date should be given from the LMP (if known) using the above chart. As a dating scan is considered more accurate in calculating the EDD (NICE 08) this provisional date may well be changed.
The optimal time for performing the dating scan is between 10-14 weeks

NB If the woman already has had a scan of at least 8 weeks gestation, as long as written documentation of this scan is available, no further scans are needed.

However, in the absence of written confirmation, another dating scan should be booked.
Please also refer to the letter '*How to arrange your next appointment following your scan on EPADS'* appendix G that women should receive if they have attended EPADS in early pregnancy.

References:

Department of health (2007) *The Pregnancy Book: A complete guide to pregnancy, childbirth and the first few weeks with a new baby*. London.

National Institute for Health and Clinical Excellence (NICE) 2008: Clinical guideline 62: *Antenatal care: Routine care for the healthy pregnant woman* London.

9.2 Appendix B
BMI chart

Weight			Height																
			147	150	152	155	157	160	163	165	168	170	173	175	178	180	183	185	188	191
			4' 10"	4' 11"	5' 0"	5' 1"	5' 2"	5' 3"	5' 4"	5' 5"	5' 6"	5' 7"	5' 8"	5' 9"	5' 10"	5' 11"	6' 0"	6' 1"	6' 2"	6' 3"
38.2		**0**	18	17	17	16	15	15	14	14	14	13	13	12	12	12	11	11	11	10
39.1	**6**	**2**	18	17	17	16	16	15	15	14	14	14	13	13	12	12	12	11	11	11
40	**6**		19	18	17	17	16	16	15	15	14	14	13	13	13	12	12	12	11	11
40.9	**6**	**6**	19	18	18	17	17	16	15	15	14	14	14	13	13	13	12	12	12	11
41.8	**6**	**8**	19	19	18	17	17	16	16	15	15	14	14	14	13	13	12	12	12	11
42.7	**6**			19	18	18	17	17	16	16	15	15	14	14	13	13	13	12	12	12
43.6	**6**	**12**		19	19	18	18	17	16	16	15	15	15	14	14	13	13	13	12	12
44.5	**7**	**0**	21	20	19	19	18	17	17	16	16	15	15	15	14	14	13	13	13	12
45.5	**7**	**2**	21	20	20	19	18	18	17	17	16	16	15	15	14	14	14	13	13	12
46.4	**7**	**4**	21	21	20	19	19	18	17	17	16	16	16	15	15	14	14	14	13	13
47.3	**7**	**6**	22	21	20	20	19	18	18	17	17	16	16	15	15	15	14	14	13	13
48.2	**7**	**8**	22	21	21	20	20	19	18	18	17	17	16	16	15	15	14	14	14	13
49.1	**7**	**10**	23	22	21	20	20	19	18	18	17	17	16	16	15	15	15	14	14	13
50	**7**	**12**	23	22	22	21	20	20	19	18	18	17	17	16	16	15	15	15	14	14
50.9	**8**	**0**	24	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	14	14
51.8	**8**	**2**	24	23	22	22	21	20	19	19	18	18	17	17	16	16	15	15	15	14
52.7	**8**	**4**	24	23	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15	14
53.6	**8**	**6**	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16	16	15	15
54.5	**8**	**8**	25	24	24	23	22	21	21	20	19	19	18	18	17	17	16	16	15	15
55.5	**8**	**10**	26	25	24	23	23	22	21	20	20	19	19	18	18	17	17	16	16	15
56.4	**8**	**12**	26	25	24	23	23	22	21	21	20	20	19	18	18	17	17	16	16	15
57.3	**9**	**0**	27	25	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16	16
58.2	**9**	**2**	27	26	25	24	24	23	22	21	21	20	19	19	18	18	17	17	16	16
59.1	**9**	**4**	27	26	26	25	24	23	22	22	21	20	20	19	19	18	18	17	17	16
60	**9**	**6**	28	27	26	25	24	23	23	22	21	21	20	20	19	19	18	18	17	16
60.9	**9**	**8**	28	27	26	25	25	24	23	22	22	21	20	20	19	19	18	18	17	17
61.8	**9**	**10**	29	27	27	26	25	24	23	23	22	21	21	20	20	19	18	18	17	17
62.7	**9**	**12**	29	28	27	26	25	24	24	23	22	22	21	20	20	19	19	18	18	17
63.6	**10**	**0**	29	28	28	26	26	25	24	23	23	22	21	21	20	20	19	19	18	17
64.5	**10**	**2**	30	29	28	27	26	25	24	24	23	22	22	21	20	20	19	19	18	18
65.5	**10**	**4**	30	29	28	27	27	26	25	24	23	23	22	21	21	20	20	19	19	18
66.4	**10**	**6**	31	30	29	28	27	26	25	24	24	23	22	22	21	20	20	19	19	18
67.3	**10**	**8**	31	30	29	28	27	26	25	25	24	23	22	22	21	21	20	20	19	18
68.2	**10**	**10**	32	30	30	28	28	27	26	25	24	24	23	22	22	21	20	20	19	19
69.1	**10**	**12**	32	31	30	29	28	27	26	25	24	24	23	23	22	21	21	20	20	19
70	**11**	**0**	32	31	30	29	28	27	26	26	25	24	23	23	22	22	21	20	20	19
70.9	**11**	**2**	33	32	31	30	29	28	27	26	25	25	24	23	22	22	21	21	20	19
71.8	**11**	**4**	33	32	31	30	29	28	27	26	25	25	24	23	23	22	21	21	20	20

72.7	**11**	**6**	34	32	31	30	29	28	27	27	26	25	24	24	23	22	22	21	21	20
73.6	**11**	**8**	34	33	32	31	30	29	28	27	26	25	25	24	23	23	22	22	21	20
74.5	**11**	**10**	34	33	32	31	30	29	28	27	26	26	25	24	24	23	22	22	21	20
75.5	**11**	**12**	35	34	33	31	31	29	28	28	27	26	25	25	24	23	23	22	21	21
76.4	**12**	**0**	35	34	33	32	31	30	29	28	27	26	26	25	24	24	23	22	22	21
77.3	**12**	**2**	36	34	33	32	31	30	29	28	27	27	26	25	24	24	23	23	22	21
78.2	**12**	**4**	36	35	34	33	32	31	29	29	28	27	26	26	25	24	23	23	22	21
79.1	**12**	**6**	37	35	34	33	32	31	30	29	28	27	26	26	25	24	24	23	22	22
80	**12**	**8**	37	36	35	33	32	31	30	29	28	28	27	26	25	25	24	23	23	22
80.9	**12**	**10**	37	36	35	34	33	32	30	30	29	28	27	26	26	25	24	24	23	22
81.8	**12**	**12**	38	36	35	34	33	32	31	30	29	28	27	27	26	25	24	24	23	22
82.7	**13**	**0**	38	37	36	34	34	32	31	30	29	29	28	27	26	26	25	24	23	23
83.6	**13**	**2**	39	37	36	35	34	33	31	31	30	29	28	27	26	26	25	24	24	23
84.5	**13**	**4**	39	38	37	35	34	33	32	31	30	29	28	28	27	26	25	25	24	23
85.5	**13**	**6**	40	38	37	36	35	33	32	31	30	30	29	28	27	26	26	25	24	23
86.4	**13**	**8**	40	38	37	36	35	34	33	32	31	30	29	28	27	27	26	25	24	24
87.3	**13**	**10**	40	39	38	36	35	34	33	32	31	30	29	29	28	27	26	26	25	24
88.2	**13**	**12**	41	39	38	37	36	34	33	32	31	31	29	29	28	27	26	26	25	24
89.1	**14**	**0**	41	40	39	37	36	35	34	33	32	31	30	29	28	28	27	26	25	24
90	**14**	**2**	42	40	39	37	37	35	34	33	32	31	30	29	28	28	27	26	25	25
90.9	**14**	**4**	42	40	39	38	37	36	34	33	32	31	30	30	29	28	27	27	26	25
91.8	**14**	**6**	42	41	40	38	37	36	35	34	33	32	31	30	29	28	27	27	26	25
92.7	**14**	**8**	43	41	40	39	38	36	35	34	33	32	31	30	29	29	28	27	26	25
93.6	**14**	**10**	43	42	41	39	38	37	35	34	33	32	31	31	30	29	28	27	26	26
94.5	**14**	**12**	44	42	41	39	38	37	36	35	33	33	32	31	30	29	28	28	27	26
95.5	**15**	**0**	44	42	41	40	39	37	36	35	34	33	32	31	30	29	29	28	27	26
96.4	**15**	**2**	44	42	41	39	38	37	36	35	34	33	32	31	30	29	28	28	27	26
97.3	**15**	**4**	45	43	42	40	39	38	37	36	34	34	33	32	31	30	29	28	28	27
98.2	**15**	**6**	45	44	43	41	40	38	37	36	35	34	33	32	31	30	29	29	28	27
99.1	**15**	**8**	46	44	43	41	40	39	37	36	35	34	33	32	31	31	30	29	28	27
100	**15**	**10**	46	44	43	42	41	39	38	37	35	35	33	33	32	31	30	29	28	27
100.9	**15**	**12**	47	45	44	42	41	39	38	37	36	35	34	33	32	31	30	29	29	28
101.8	**16**	**0**	47	45	44	42	41	40	38	37	36	35	34	33	32	31	30	30	29	28
102.7	**16**	**2**	48	46	44	43	42	40	39	38	36	36	34	34	32	32	31	30	29	28
103.6	**16**	**4**	48	46	45	43	42	40	39	38	37	36	35	34	33	32	31	30	29	28
104.5	**16**	**6**	48	46	45	43	42	41	39	38	37	36	35	34	33	32	31	31	30	29
105.5	**16**	**8**	49	47	46	44	43	41	40	39	37	37	35	34	33	33	32	31	30	29
106.4	**16**	**10**	49	47	46	44	43	42	40	39	38	37	36	35	34	33	32	31	30	29
107.3	**16**	**12**	50	48	46	45	44	42	40	39	38	37	36	35	34	33	32	31	30	29

Normal	18.5 – 25	Pre-obese	25 – 30	Obese Class 1	30 – 35
Underweight	1 – 18.5	Obese Class 2	35 – 40	Obese Class 3	40 – 60

References:

NHS resources [online] available at:
http://www.nhs.uk/Tools/Pages/Healthyweightcalculator.aspx [Accessed on 14.11.08]

9.3 Appendix C

CENTILE CHARTS FOR GESTATIONS ≥ 36 WEEKS.

Mothers who have had a previous baby whose birth weight falls within either of these centile charts should be referred for Consultant Led care.

In between 2nd and 9th centile:

Week	g
36	≤2000
37	≤2200
38	≤2400
39	≤2600
40	≤2750
41	≤2900
42	≤3050

95th centile:

Week	(g)
36	≥3200
37	≥3425
38	≥3650
39	≥3875
40	≥4100
41	≥4300
42	≥4475

N.B. It is very difficult to find non-customised centile charts. These have been taken from the Gestation Network which is linked with the Perinatal Institute.
Overall birth weight is affected by sex, order of pregnancy (1st baby or not), maternal height, weight and ethnicity. These charts are based on white Caucasian women with a maternal height of 165cm and a weight of 64kg. They are the medians used by the network and the baby's weights are calculated as in-between male and female infants' weights.

9.4 Appendix D

ANTENATAL CLINICS YORK AND SELBY HOSPITAL

MONDAY	• Midwife 2Owk Scan Clinic • Dating Scan • NMD /REG Selby	• Midwife 2Owk Scan Clinic • Dating Scan • Midwife 2Owk Scan Clinic
TUESDAY	• AAE/OAA +REG alternate weeks • JPD Prenatal Scans	• SNM/REG
WEDNESDAY	• OAJ/REG • Midwife 2Owk Scan Clinic	• CLO/REG • OAJ Prenatal Scans
THURSDAY	• Diabetes/ Metabolic Clinic • High Risk Clinic • Midwife 2Owk Scan Clinic • Amniocentesis • Dating Scan Selby	• DWP / REG • Dating Scan Selby
FRIDAY	• JPD / REG • ANTI-D Clinic	• Dating Scan Clinic York

9.5 Appendix E COMMUNITY ANTENATAL CLINICS – NORTH EAST TEAM

Monday	Tuesday	Wednesday	Thursday	Friday
09.00-11.00 (alt wks-wk 1) mixed Huntington/Strensall AnnMarie Robson 768841	09.00-12.00 mixed 32 Clifton June Chaplin 653834	09.00-11.30 mixed Dunnington/Strensall Ceri Kilgallon 489432	09.00-12.30 mixed Easingwold Andrea Stephenson 01347 821557	09.-12.00 returns Gillygate June Chaplin 624404
09.00-12.30 returns Heworth Sue McAulay 425241	09.00-12.15 returns Elvington Ceri Kilgallon 0845 071 7170/608221	10.30-12.00 returns Haxby Sharon Pratt 724600	09.00-11.00 (alt wks-wk 2) mixed East Parade Jane Challis 423666	09.00-12.30 returns Haxby Sharon Pratt 724600
09.00-12.00 mixed Stamford Bridge Ceri Kilgallon 01759 371467	09.00-12.00 mixed Fulford Park Carole Lindsey 625566	09.00-09.45 returns New Earswick Sharon Pratt 724600	09.00-12.00 bookings (alt wks, wk 1) Elvington Ceri Kilgallon 0845 071 7170/608221	09-12:00 (alt wks-wk 2) bookings Minster Health Joanna Lishman 726917/626234
09:00-11:30 (alt wks-wk 1) mixed Unniversity Bev Stark 433290	09.00-11.30 (alt weeks- wk 2) mixed Linton on Ouse Andrea Stephenson 01347 848261ex7272	09.00-12.00 returns Rawcliffe Sharon Connell 654228	12.30-15.30 bookings Heworth Sue McAulay 425241	09.00-11.30 mixed Park View Jane Challis 411139
09.00-11.00 mixed Victoria Way Jane Challis 411139	09.00-12.00 (alt wks-wk 1) bookings Monkgate (YMG) Joanna Lishman 342989	09.00-12.00 (alt wks- wk 2) mixed Stillington AnnMarie Robson 01347 810332	09.00-11.00 mixed Huntington/Haxby Sharon Pratt/Liz Sargent 7246667	09.00-12.00 returns Petergate, Tower Ct Denise Jewitt 479111
	09.00-12.15 returns Strensall AnnMarie Robson 490532	09.00-12.00 mixed Waterlane Denise Jewitt 623259	09.00-12.30 returns Minster Health Joanna Lishman 726917/626234	09.00-12.00 bookings Rawcliffe Sharon Connell 654228
	09.00-12.00 mixed Tang Hall Jane Challis 411139	09.00-11.00 every month Parentcraft at York Hospital 1st 2 Wed Mw, physio Tues eve wk later		09.00-12.00 bookings Strensall AnnMarie Robson 490532
13.00-16.00 (alt wks-wk 2) mixed Hull Rd Bev Stark 410294	13.00-16.00 bookings Haxby Sharon Pratt 646861	12.30-15.30 (alt wks-wk 1) bookings Gillygate June Chaplin 624404	13.00-16.00 bookings Petergate, Tower Ct Denise Jewitt 479111	14.00-16.00 every month Parentcraft at York Hospital 1st and 2nd Fri Mw, 3rd Fri physio
13..00-16.00 returns Monkgate (YMG) Joanna Lishman 342989	13.00-16.00 (alt wks-wk 1) mixed Wenlcok Tce Bev Stark 646861	14.00-16.30 mixed Tollerton Andrea Stephenson 01347 838231/838338	14.00-16.00 every month Parentcraft at Haxby 2nd and 3rd Thurs Mw, 4th Thur physio	
as and when/pm Whitby Ave Sue McAulay 416541		14.00-16.00 alternate months from Jan Parentcraft at York Hospital 3rd and 4th Wed Mw, followed by physio	14.00-16.00 alternate months from Jan Parentcraft at Elvington 1st and 2nd Thurs Mw, 3rd Thur physio	

9.6 Appendix F COMMUNITY ANTENATAL CLINICS – SELBY TEAM

Monday	Tuesday	Wednesday	Thursday	Friday
0900 - 10.15 Mixed Monk Fryston Ruth Thompson 724313	09.00 -11.15 Mixed Scott Road Andrea Huby/Debbie Scott 724400	09.00-11.30 Returns Escrick Carol Wass 721800	09.00-11.30 Returns Beech Tree Lynn Tate 724417	09.30.-12.30 (alt wks-wk 1) bookings Escrick Carol Wass 721800
	09.00-12.00 Bookings (alt weeks) South Milford Ruth Thompson 721601	09.00-11.30 Returns South Milford Ruth Thompson 721601	09.15-11.30 Mixed Scott Road Andrea Huby/Debbie Scott 724400	09.00-12.30 (alt weeks - Week2) Midwife Scans
		10.00 - 12.00 every month Parentcraft at Selby 1st and 2nd Wed Mw, 3rd Wed physio	10.00-12.00 (alternate months from Feb) Parentcraft - Sherburn 1st and 2nd Thur Mw, 3rd Thur, physio	09.00 - 11.30 mixed Posterngate Carol Wass/Eileen Wilson 721900
				10.00 -12.30 Mixed Scott Road Andrea Huby/Debbie Scott 724400
13.00 – 16.00 mixed Sherburn Jo Harrison 721944	12.00 - 1300 Aqua Natal	1300 - 1600 Returns Sherburn Jo Harrison 721944	13.00 – 16.00 mixed Posterngate Carol Wass/Eileen Wilson 721900	
1300 – 1615 Mixed Beech Tree Lynn Tate 724417	14.00 - 1600 Bookings Beech Tree Lynn Tate 724417			
13.00 – 16.00 mixed Posterngate Carol Wass/Eileen Wilson 721900				

9.7 Appendix G COMMUNITY ANTENATAL CLINICS – SOUTH WEST TEAM

Monday	Tuesday	Wednesday	Thursday	Friday
09:00-13:00 (returns) Acomb Medical Group Alison Ripley 342999	09:00-12:00 (mixed) Lavender Grove Sally Anne Lardner 798262	09:00- 11:00 (every month) Parentcraft at Clementhorpe Health Centre 1st and 3rd Wed Mw, 2nd Wed physio	09:00-12:00 (Returns) Cornlands Christine Breen 781423	09:00-12:00 (mixed) Cherry Street Sally Anne Lardner 646898
10:00- 13:00 (Bookings) Gale Farm Surgery Kath Chapman 798329	09:30- 12:00 (mixed) Beech Grove Nicky Scotter 791094	09:00-12:00 (Returns) Tadcaster Debbie Dennison 01937 530082	09:30-12:30 (Bookings) Acomb Medical Group Alison Ripley 342999	09:30-12:00 (mixed) Front Street Nicky Scotter 794141
	9:30-13:00 (mixed) Woolpack Beverley Ingle 724343	10:00-12:00 (Returns) Gale Farm Surgery Kath Chapman 798329	10:00-12:00 (mixed alternate weeks) Bishopthorpe Fiona MacMillan 706912	09:00-12:00 (Bookings) Tadcaster Debbie Dennison 01937 530082
			09:15-12:00 (mixed) Tockwith Nicky Scotter 01423 358722	10:00-12:30 (mixed) Old Forge Kath Chapman 794322
			10:00-12:00 (alt months from Jan) Parentcraft at Tadcaster Med Centre 1st and 2nd Thur Mw, 3rd Thur physio	
12:30-15:30 (Bookings) Cornlands Christine Breen 781423	12:30-15:30 (Returns) Dalton Terrace Fiona MacMillan 658542	13:00- 15:30 (Mixed) Green Hammerton Nicky Scotter 01423 330030	ad hoc Dr Nicholls Ladies Debbie Dennison 724900	add hoc Askham Grange Kath Chapman 772000
14:00-16:30 (mixed) Copmanthorpe Fiona MacMillan 706455	13:30-16:00 (Returns) Woodthorpe Alsion Ripley 706881	13:00- 16:00 (Mixed) Woolpack Beverley Ingle 724343	13:00- !6:00 (Returns) Woolpack Beverley Ingle 724343	
14:00- 16:00 (every month) Parentcraft at Beech Grove 1st and 2nd Mon Mw, 3rd Mon physio		14:00- 16:30 (Bookings) Dalton Terrace Fiona MacMillan 658542		
		14:00-16:00 (every month) Parentcraft at Clementhorpe Health Centre 4th Wed and 1st of following month Mw, then physio		

9.8 Appendix H

HOW TO ARRANGE YOUR NEXT APPOINTMENT FOLLOWING YOUR SCAN ON EPADS

We are pleased the result of your ultrasound scan shows a continuing pregnancy. Because you have had this unscheduled scan it is important that you know how your further appointments will be made.

Do I need another early scan to date my pregnancy?
If you are 8 weeks or over at the time of this scan: **no**. Your pregnancy can be accurately dated by a scan done at 8 weeks or over, so the ultrasound department will **not** perform another scan for this purpose. To book your 20-week scan, please telephone: 01904 725666, Monday to Friday, between 10 am and 4 pm. Your pregnancy notes will be posted to you when you book your 20-week scan appointment.

What happens if my dating scan appointment is already booked?
If you are 8 weeks or over on your EPADS scan **your dating scan appointment will automatically be cancelled.** Please cancel this dating scan and arrange an appointment for your 20-week scan by telephoning: 01904 725666, on Monday to Friday, between 10 am and 4pm. Your pregnancy notes will be posted to you when you book your 20-week scan appointment.

What happens if I am less than 8 weeks when I have my EPADS scan?
Another dating scan will be required. If you have not already booked this please telephone: 01904 725666, on Monday to Friday, between 10 am and 4pm. Your 20- week scan will be booked after your dating scan. Your pregnancy notes will be given to you when you attend for this scan.

If I have requested the "Triple Test" as screening for Down's syndrome, how is this arranged?
If you are **8 weeks or over** on your EPADS scan please telephone Bev Frost or Moira Brown, Antenatal Screening Co-ordinators, on: 01904 725347, Monday to Friday, between 9am and 4pm to book your triple test.

If you are **less than 8 weeks** on your EPADS scan, when you telephone to book your dating scan please tell the receptionist you would like a triple test. This will enable you to see Bev or Moira after your scan to discuss and arrange your triple test.

If you require further information please telephone:
Moira Brown or Bev Frost on 01904 725347,Monday to Friday, between 9 am and 4 pm.

9.9 Appendix J

York Hospitals NHS
NHS Foundation Trust

RECORD OF BOOKING PERFORMED AT GREATER THAN 12 COMPLETED WEEKS OF PREGNANCY (12w +6d)

Date of booking: ……

Gestation at booking……..…

Date that woman informed health service of pregnancy…….

Reason for late booking:

Unaware of pregnancy	☐
Uncertain whether to keep pregnancy	☐
Transfer from any other area	☐
Out of the country	☐
No clinic appointments available	☐
Previous DNA	☐
Other (please state why)	☐

On completion of this form at booking send with the hand held notes to medical records.

9.10 Appendix K
HEALTH RECORDS: PROCEDURE FOR WOMEN WHO ATTEND ANTENATAL OR A COMMUNITY CLINIC WITHOUT HANDHELD PREGNANCY RECORDS

AIM

- To maintain accurate record of consultation.
- To reduce incidence of miscommunication between Hospital Antenatal Clinic, Community Midwife and G.P.
- To provide a structured pathway of care.
- Reduce the risk of overlooking relevant medical and obstetric issues.

ACTION

An attempt to retrieve the pregnancy notes in time for the appointment should be made. If notes are unable to be retrieved in time for appointment, the Midwife/Consultant will decide if the woman is to be reviewed. If the consultation does not take place, the reason & date of next appointment must be recorded on the clinic-held summary sheet in the hospital notes, in a timely manner.

ANTENATAL CLINIC

If consultation occurs: reception will label a separate continuation record sheet (page 15) with addressograph. Following consultation, the record sheet will be photocopied; one copy to hospital notes and one copy given to woman for the hand-held notes, to be secured behind the original page 15 at the next appointment.

If consultation unable to occur: further appointment negotiated when woman can attend with hand-held record.

If woman has a scan and review appointment, woman will attend scan appointment.

(a) If non-urgent report. the woman may be reviewed following discussion with the Doctor/ANC Co-ordinator, A further appointment may be when the woman can attend with the hand-held record.

(b) If urgent report, woman for medical consultation to review scan report.

COMMUNITY CLINIC

If consultation occurs: commence a separate continuation record sheet (page 15), completing patient's name & hospital D number. Following consultation give to the woman to put into her hand-held pregnancy notes. At the next appointment place this page behind the original page 15 and document its existence following on from the previous appointment. If there are no continuation sheets, document all the details of the consultation on GP headed notepaper with the Hospital D. number & patient's details, give to the woman to be filed as previously described.

If consultation unable to occur: further appointment negotiated as soon as practicable when woman can attend with hand-held record.

Author: Danielle Marks (Antenatal Clinic Co-ordinator),
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Owner: Midwifery Development Team

Reviewed by: Karen Aston-Martin (Midwife. Midwifery Development Team), Hilary Farrow (Risk Manager, Obstetrics & Gynaecology, Midwifery Development Team), Joanna Lishman (Community Midwife Team Leader, Midwifery Development Team), Danielle Marks (Antenatal Clinic Co-ordinator), Kath Thompson (Clinical Midwifery Manager).

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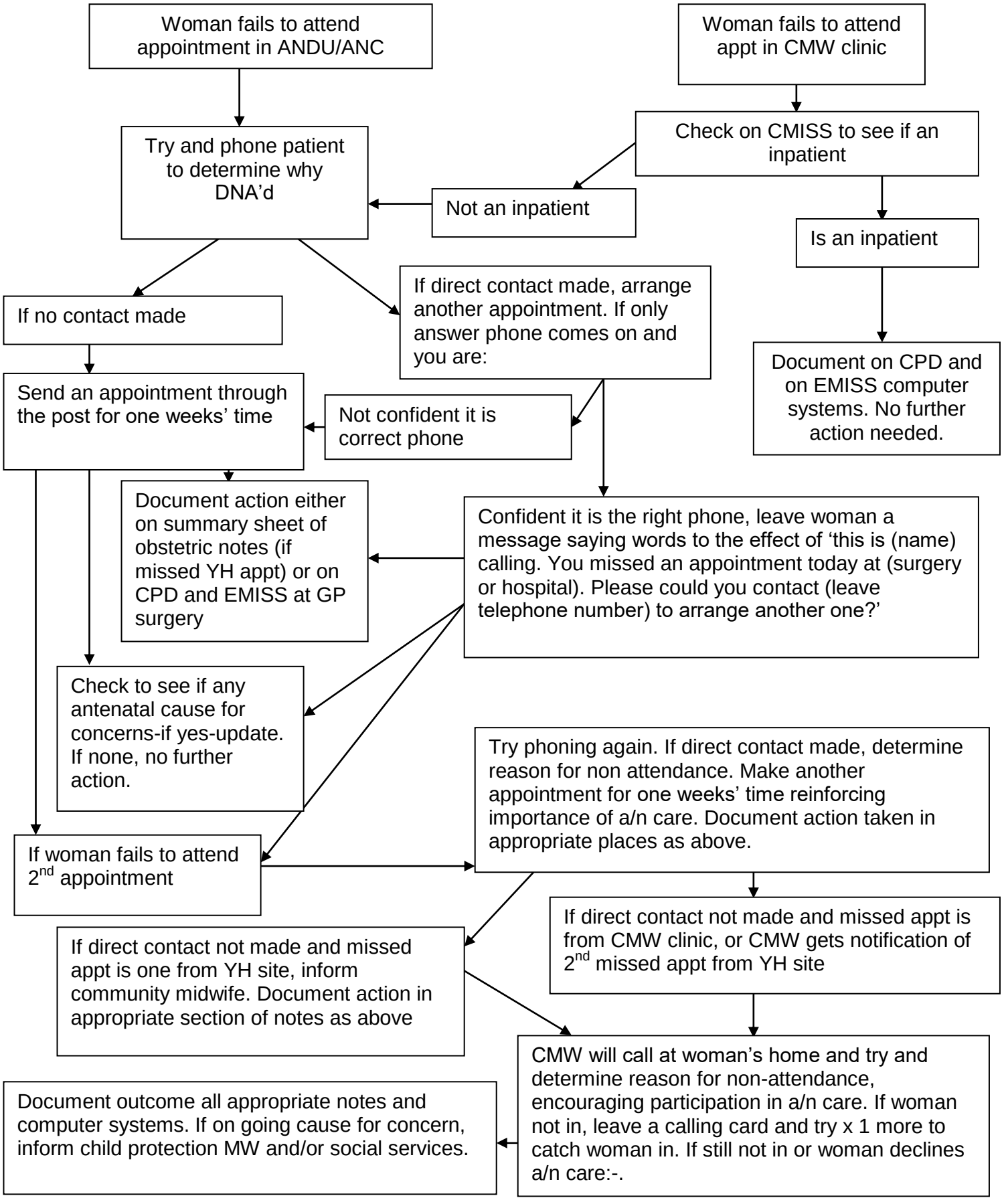
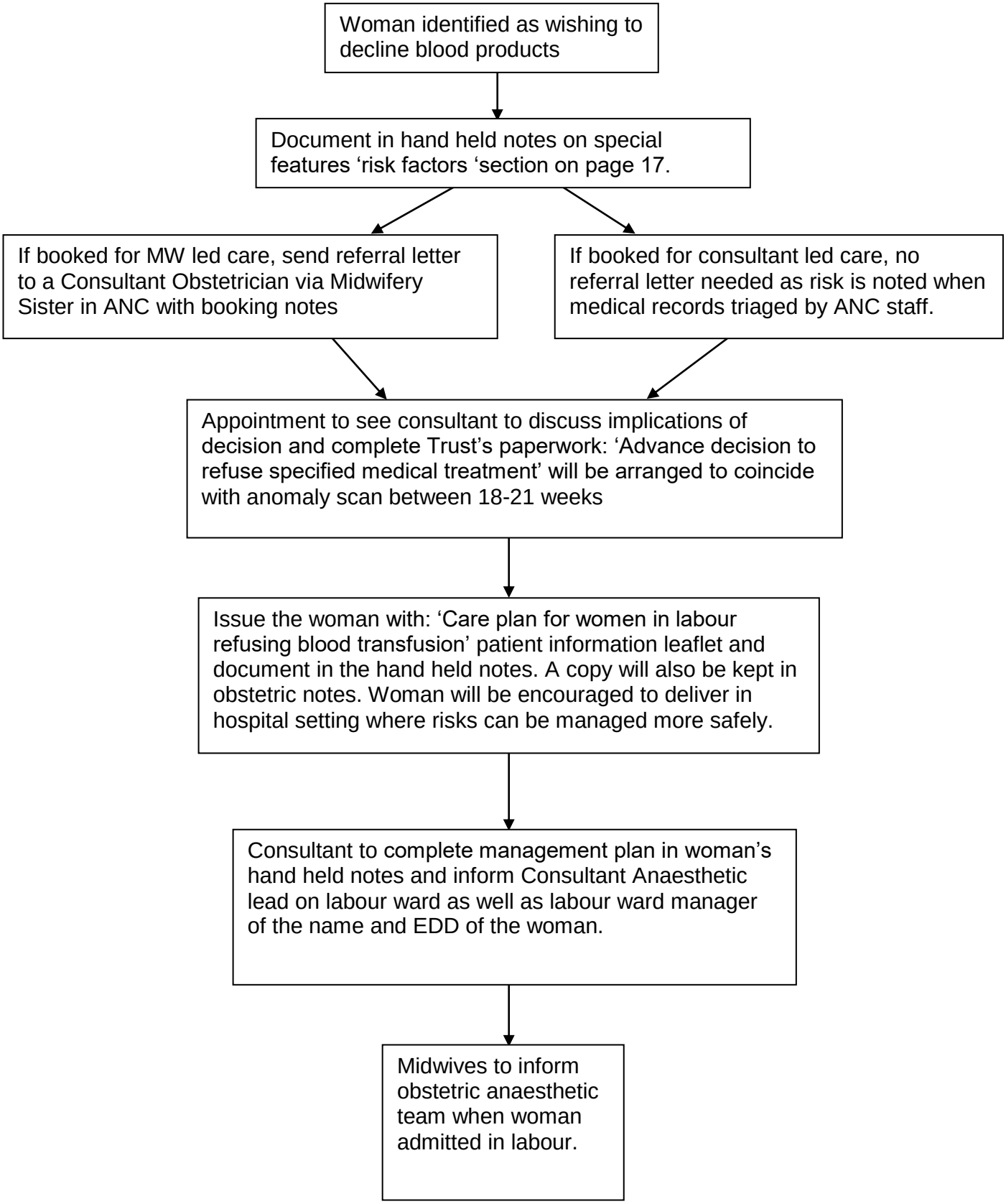
9.11 Appendix L

PROCEDURE TO FOLLOW IN ANDU, COMMUNITY OR ANTENATAL CLINIC IF A WOMAN DOES NOT ATTEND FOR AN APPOINTMENT



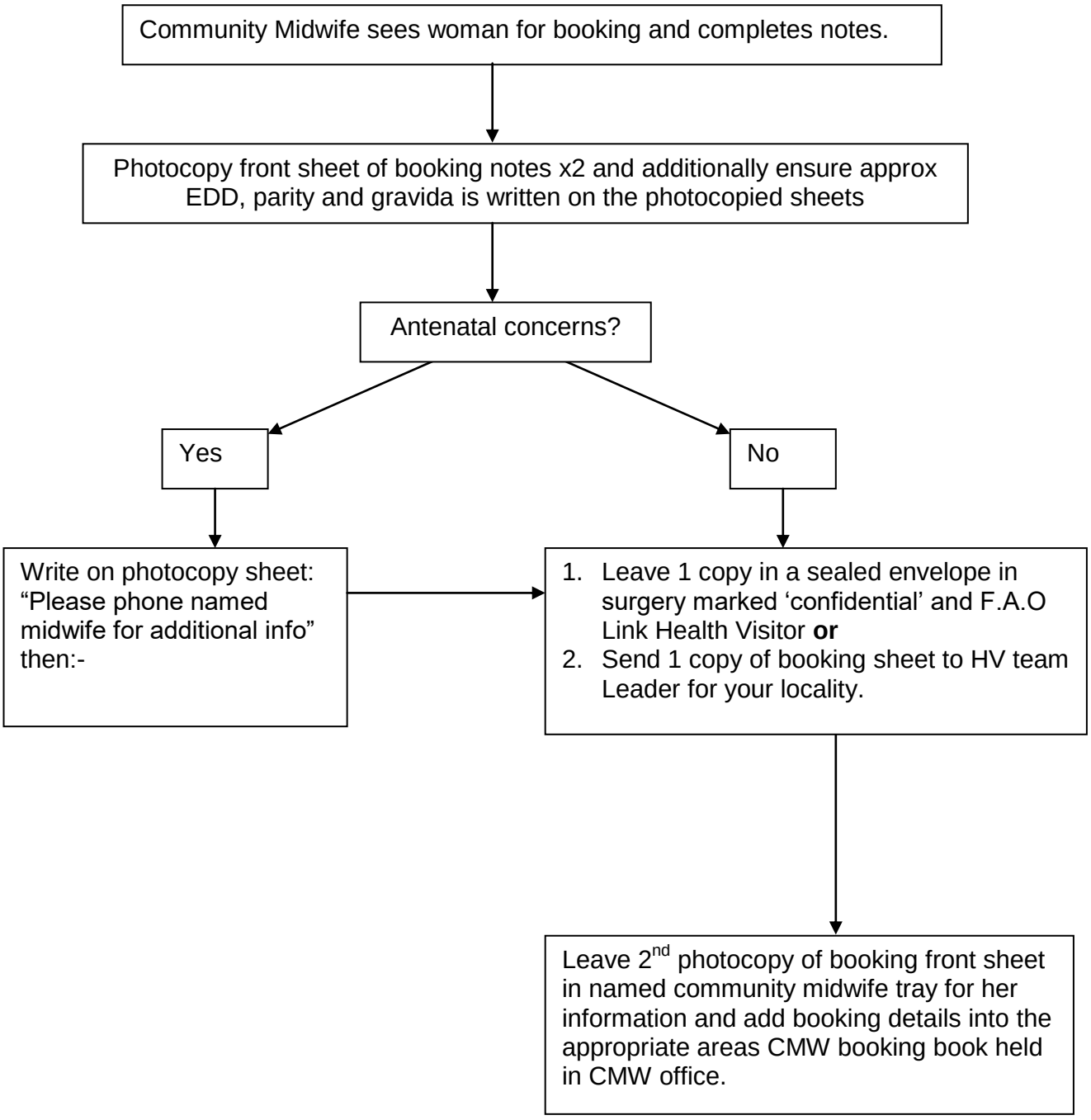
9.12 Appendix M

PROCEDURE TO FOLLOW FOR WOMEN WHO DECLINE BLOOD PRODUCTS



9.13 Appendix N

ANTENATAL HEALTH VISITOR LIAISION



9.14 Appendix O

SUMMARY OF NEW AND UPDATED RECOMMENDATIONS WITHIN THESE ANTENATAL GUIDELINES

Since 2003 when the last antenatal care guidance was issued, several important pieces of evidence have become available, particularly concerning: - gestational diabetes, antenatal screening, identification and assessment of risk in pregnancy and management of pregnancies requiring additional support. These have provided the opportunity to look at a number of aspects of antenatal care which has resulted in a whole new, but rather lengthy document.
To ease the transition of becoming familiar with the information within this document, the new and updated recommendations are listed below and marked 'New' with a reference to the page numbers that give additional information. However, it is important to ensure that all the information within the full guidelines document is read and used as part of your daily practice.

NEW Bookings should be undertaken between 8-10 weeks of pregnancy and no later than 12 completed weeks. Women who present at ≥ 13 weeks should be booked within 2 weeks and have a pro-forma document completed (appendix J) *pages 6 &127*

NEW Women should be booked consultant led if they:-

- have had a baby born between the 2nd and 9th or 95th centile (see appendix C) *pages 7 & 121*
- have had more than 6 pregnancies (regardless of parity) *page 7*
- have had a baby ≥ 4.5 kg *pages 7 & 81*
- smoke ≥ 20 cigarettes per day and decline referral to smoking cessation *pages 7& 101*
- have a BMI at 1st contact of ≤ 18 or ≥ 35 *pages 7 &91*

NEW At booking Vit D supplementation at 10mcg/day should be discussed and recommended for: -

- women of S. Asian, African, Caribbean or Middle Eastern family origin
- women who have limited exposure to sunlight i.e. those who are housebound or usually remain covered when outdoors
- women who eat a diet particularly low in Vit D such as women who consume no oily fish, eggs, meat, fortified D margarine or breakfast cereal
- women with a pre-pregnancy body mass index of >30kgm/m^2 *page 13*

NEW At booking women identified as having had a past h/o Group B haemolytic streptococcus infection need to have a yellow 'Group B strep' sticker placed on their hand held notes with 'PAST' written on it. These women do not necessarily need routine antibiotics in labour, but a discussion about current evidence and practice needs to take place *pages 13 & 49*

NEW Women with a BMI of ≥ 30 at booking need to be issued with the information leaflet 'pregnancy and obesity' *pages 14 & 91*

NEW At booking, screening, identification and appropriate referral of women who are or maybe at risk of mental health problems needs to take place *pages 13 & 106*

NEW A full medical examination of heart and lungs should be performed and documented in the hand held notes for all primigravid women, on multiparous women if there is no documentation that this was carried out in UK during a previous pregnancy and on women entering the country later in pregnancy *page 14*

NEW The regime of antenatal visiting for multiparous women with an uncomplicated current pregnancy has changed.

- In general multiparous women do not need to be seen at 24 weeks – the main exceptions to this would be women who are vulnerable or have mental health issues.

- Women with a h/o pre-eclampsia (unless it was early onset and fulminating) do not need to be seen at 24 weeks.
- Women with a h/o LSCS do not need to be seen at 24 or 31 weeks unless there are current complications.
- Women with a new partner do not need to follow the nulliparous regime.
- Women with a gap of ≥ 10 years (irrespective of whether with a new partner or not) need an additional appointment to normal multiparous regime at 31 weeks.

N. B. Women who require additional support in pregnancy will have an individualised management plan documented in their hand held notes after discussion with the consultant team they are booked under *pages 12 & 15*

NEW A booking Hb of ≤ 110g/lshould be investigated further by taking an additional blood sample for ferritin, B12 and folate *pages 14 & 38*

NEW Women with anaemia of ≤ 90g/litre should be referred to ANC. Additionally , women who have been on iron therapy for more than 3 weeks (and compliant with it) and are not responding should also be referred to ANC *page 38*

NEW Routine blood for FBC should be taken at booking, 28 and 36 weeks *page 38*

NEW Gestation periods for a/n screening have changed:-

- Combined test of nuchal scan and blood testing is 11+ 0d - 13w +6d
- Triple testing is 15w +0d - 19w +6d
- Anomaly scans is 18w+0d – 20w+6d *page 22*

NEW Diagnostic testing for Down's should not be offered unless there is a high chance screening result. Women ≥ 38 yrs of age who ***request*** diagnostic testing (without having had screening) may have it done on the NHS *page 22*

NEW Varicella antibody check should be done at booking for those ladies who:-

- are unsure if they have had, or know they have never had chicken pox
- have been born and raised oversees (even if they give a history of having had chicken pox).

Additionally, varicella antibodies should be requested if a woman develops a rash after being in direct contact with chicken pox unless she is definitely known to be Varicella – Zoster IgG positive *page 53*

NEW An MSU should be sent on all ladies who book ≤ 14 weeks in addition to urine dipstick testing. MSU does not need to be sent if there are no clinical symptoms and leucocytes are present on 1st occasion on subsequent urine dipstick testing *page 45*

NEW Women who attend EPADs at ≥ 8w gestation, will be given a copy of their scan result to give to their CMW so it may be filed in her hand held records as evidence of a dating scan *page 108*

NEW Criteria for screening for diabetes:-

- body mass index above 30 kg/m²
- previous macrosomic baby weighing ≥ 4.5 kg
- previous gestational diabetes
- family history of diabetes (first-degree relative with diabetes – not husband)
- family origin with a high prevalence of diabetes:
    - South Asian (specifically women whose country of family origin is India, Pakistan or Bangladesh)
    - black Caribbean
    - Middle Eastern (specifically women whose country of family origin is Saudi Arabia, United Arab Emirates, Iraq, Jordan, Syria, Oman, Qatar, Kuwait, Lebanon or Egypt)

page 81

NEW Women who have been in direct contact with parvovirus should have their blood tested for antibodies. In the 1st instance, serology dept at York hospital should be contacted to see if they can check immunity on the booking bloods. Only if this can not take place should a new sample of blood be taken *page 56*

NEW All referrals to Consultant team should be in writing (see section 3.9.4 for referral proforma) *pages 6 & 112*

NEW There is an expectation that staff document clearly that appropriate information leaflets have been given and women have had the opportunity to discuss any information they have received. If any written information has been offered and the woman declines it, this also needs documenting. This includes declining to attend antenatal classes' *pages 18 & 46*

NEW Women who do not attend for an appointment (regardless of location of the appointment) must be followed up and every effort made for them to be seen. Document clearly in obstetric notes if woman declines care despite best efforts to engage with her (see appendix L) *page 129*

NEW A new IOL guideline has resulted in a new checklist for mw's booking an IOL appointment (please refer to full induction of labour guideline either on horizon or within guidelines folders on LW/ANC/G2/G3) *page 90*

NEW A section on rashes and skin disorders of pregnancy. This is not intended to be a tool for diagnosis but to inform on possible causes and whom to refer to when a woman presents with a rash in pregnancy *pages 77 & 78*

NEW To fulfil CNST requirements, monitoring compliance with these guidelines will take place annually *pages 18 & 56*