Antenatal Shared Care Guidelines

Information for General Practitioners (GPs)

Updated December 2015
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Introduction

The aim of this booklet is to provide clear guidelines for General Practitioners (GPs) involved in the shared care of low risk antenatal women with the Armadale Health Service (AHS). These guidelines are available on the AHS website www.ahs.health.wa.gov.au under GPs within the “For Health Professionals” section.

Models of care

Public patient

Women can choose to access maternity services at the Armadale Health Service as a public patient through our Midwifery Group Practice (see page 23) or through our public antenatal clinic with shared care arrangements with our GP Obstetricians and midwives.

Private patient

Women can elect to be a private patient by activating their private health insurance. Private patients can choose to be cared for by an Eligible Private Practising Midwife or a GP Obstetrician with admitting rights at the Armadale Health Service.
How to refer

All women must have a valid Medicare number to access maternity services at the Armadale Health Service. Once a woman’s pregnancy is confirmed, a “Referral for Antenatal Care and Delivery” form (see Appendix 2 for example) available online at www.ahs.health.wa.gov.au under GPs within the “For Health Professionals” section.

This form must be completed and sent to our Antenatal Clinic (ideally at 14 weeks of pregnancy) either by fax, post or email:

- **Email:** ArmadaleANC@health.wa.gov.au
- **Fax:** 9391 2293
- **Post:** Antenatal Clinic, Armadale Health Service, PO Box 460, Armadale, WA 6992.

GPs are to organise patient’s blood tests, first trimester screening, dating and anatomy scans. The results of these tests **must** be sent with the referral or request a copy of the results to be sent to the Antenatal Clinic.

For urgent referrals/reviews (to be seen within seven days), please mark accordingly and fax to the Antenatal Clinic. Please contact us, where possible, to discuss the patient’s needs with the Antenatal Clinic Coordinator on 9391 2686.

All women will have their first appointment at Armadale Health Service with a midwife at approximately 18 weeks of pregnancy followed by an appointment with the hospital’s GP Obstetrician between 20 to 22 weeks. If you are choosing the shared care option, the GP Obstetrician appointment will be at 28 weeks.

Request for female practitioners

Patients at AHS will be seen by medical practitioners on the basis of their clinical need, without reference to the practitioner’s gender, age, religion, race or nationality.

Our doctors are well qualified medical practitioners who conduct themselves professionally and the hospital does not discriminate between doctors based on gender.

**This information should be made clear to patients who book at AHS.**

Which GPs can provide shared care with AHS?

All GPs who undertake shared care must be registered medical practitioners in WA, have appropriate personal medical defence cover to undertake shared antenatal care, be of good character and have adequate antenatal experience or supervision.
Antenatal Shared Care visits

If the woman would like shared care with yourself and AHS, please see the guidelines of scheduled visits in Table 1. More frequent visits may be relevant depending on the clinical situation. If you have any queries, please contact the Antenatal Clinic Coordinator on (08) 9391 2686.

Table 1. Recommended practice for women with a low risk pregnancy undertaking shared care.

<table>
<thead>
<tr>
<th>Visit</th>
<th>Encounter</th>
<th>Provider</th>
</tr>
</thead>
</table>
| **1st Visit** | ▪ confirm pregnancy and expected date of delivery.  
▪ routine examination – baseline observations BP, urine, weight and height for BMI. Cardiovascular, respiratory and breasts  
▪ history including medical, obstetric, family, surgical, psychosocial  
▪ complete routine investigations ([page 9](#)).  
▪ counsel and offer first trimester screening at 11 to 13 weeks – regardless of woman’s age  
▪ complete Edinburgh Postnatal Depression Scale ([page 22](#)).  
▪ discuss alcohol, smoking, diet, exercise, back care, minor discomforts, and illicit drug use  
▪ check use of folate  
▪ if obstetric/medical risk factors exist, please refer the woman to AHS as soon as possible using the Antenatal booking form found at [www.ahs.health.wa.gov.au](http://www.ahs.health.wa.gov.au). Please see exclusion criteria for AHS on [page 16](#) and please include all results. | GP  
If any risk factors identified – early referral to Armadale Health Service or King Edward Memorial Hospital (KEMH). |
| **14 weeks** | ▪ routine assessment – ensure patient has results of first trimester genetic screening test performed at 11–13 weeks  
▪ refer low risk woman to AHS using the Referral for Antenatal Care and Delivery form found at [www.ahs.health.wa.gov.au](http://www.ahs.health.wa.gov.au). Please include all results.  
▪ counsel and offer maternal serum screening at 15–17 weeks if first trimester screening has not been undertaken  
▪ book 19-20 week anatomy scan and cervical length measurement (see page 12 for more details). | GP |
| **18 weeks** | ▪ book in visit with hospital midwife  
▪ routine assessment  
▪ appropriate referrals if needed  
▪ antenatal education classes. | AHS midwife |
<table>
<thead>
<tr>
<th>Week</th>
<th>Action</th>
<th>Responsible Party</th>
</tr>
</thead>
</table>
| 20 weeks | • ensure anatomy scan and cervical length measurement have been carried out  
• routine assessment  
• education – “Discomforts in pregnancy, when to come to hospital” | GP                |
| 24 weeks | • routine assessment  
• order 28 week investigations: FBC (all women), Blood group and antibody screen if Rh negative, GTT. | GP                |
| 28 weeks | • routine assessment  
• booking in visit with the AHS GP OBS  
• review bloods.  
• referrals if needed.  
• give Anti-D if Rh neg. | AHS GP            |
| 32 weeks | • routine assessment  
• undertake Edinburgh Postnatal Depression Score (page 22)  
• ultrasound if previous low lying placenta  
• organise 36-week blood tests for Rh negative women – blood group and antibody screen. | AHS Midwife       |
| 36 weeks | • routine Assessment.  
• Anti-D for Rh negative women.  
• Group B Strep swabs (page 15). | AHS GP/Obstetrician |
| 38 weeks | • routine assessment. | AHS midwife       |
| 40 weeks | • routine Assessment. | AHS midwife       |
| 41 weeks | • routine assessment  
• book Induction of Labour  
• VE for bishop score and stretch and sweep. | AHS GP/Obstetrician |
Documentation and routine assessments

At each visit, ensure routine checks are recorded on the hand held Pregnancy Health Record. Writing should be concise and legible. If using Medical Director or other software, please print out each visit and include this in the hand held records for our midwives.

A routine check consists of:

- Blood pressure (<140/90)
- Weight
- Urinalysis (<+ protein)
- Fundus should be measured from 24 weeks. Fundal height should approximate gestational age (plus or minus 1–2 cm).
- Fetal movements (from 24 weeks)
- Fetal heart rate from 20 weeks or earlier if Doppler available.

Note: Some peripheral oedema is now usually regarded as normal in pregnancy.

Obstetric medication information

The pharmacy department at King Edward Memorial Hospital (KEMH) provides an information service on medications that can be safely used during pregnancy. The obstetric drug information service can be contacted on (08) 9340 2723.
Preconception counselling, iron, folate and vitamin D

Identify women who are thinking about pregnancy. A referral for genetic counselling may be appropriate for women with a high risk of fetal abnormality e.g. women with Type 1 or Type 2 diabetes.

Women should also be encouraged to take vitamin D and folate supplements (see Table 2 below for recommended doses).

Please note: pregnancy formulations should not contain Vitamin A.

Table 2. Indications and recommended doses - folate and vitamin D

<table>
<thead>
<tr>
<th>Supplement</th>
<th>Dose</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Folate</td>
<td>0.5 mg per day</td>
<td>Preconception to 14 weeks gestation.</td>
</tr>
</tbody>
</table>
| Folate     | 5mg per day                               | Preconception to 14 weeks gestation for women considered at high risk for an open neural tube defect:  
  - personal history of an open neural tube defect  
  - a previous pregnancy with an open neural tube defect  
  PMHx of diabetes mellitus  
  Women taking anticonvulsants |
| Vitamin D  | 5000units Vitamin D3 per day plus calcium (RDA) orally.  
  Maintenance dose of 1000 IU recommended at least until the cessation of lactation. | <50 OHD                                                                   |
Emergency Department

Women can be seen at anytime in the Emergency Department (ED) when <20 weeks if they have severe pain, heavy vaginal bleeding or an ectopic pregnancy is expected. If you are referring a patient to the ED, please phone the department on (08) 9391 2599 and ask to speak to the admitting doctor.

For early pregnancy loss, the Emergency Department offers management under the specialist obstetrician by:

- expectant management
- medical management using misoprostol
- medical management using methotrexate (ectopic)
- dilatation and curettage (D&C).

Antenatal Assessment Unit (>20 weeks gestation)

Women greater than 20 weeks gestation can be assessed at anytime in the Antenatal Assessment Unit (AAU) which is located on the first floor on the Maud Bellas Maternity Ward.

Women can call (08) 9391 2947 for advice or concerns that arise regarding their pregnancy. It is advised that the women call the AAU before presenting for further instructions.

The staff at the AAU will assess women who develop complications after 20 weeks of gestation including (but not limited to):

- hypertension
- possible premature rupture of membranes
- reduced fetal movements
- threatened premature labour
- ante partum haemorrhage
- urinary tract infections.

The unit also attends to External Cephalic Version (ECV), induction of labour, maternal/fetal wellbeing assessments and CTG’s for GDM, IUGR, Pre-Eclampsia, Cholestasis, previous fetal demise and other obstetric complications.
Guidelines for exclusion from shared antenatal care, transfer or discussion

The Royal Australian and New Zealand College of Obstetricians and Gynaecologists (RANZCOG) has developed the following guideline to assist those involved in the provision of maternity care to deliver best-practice evidence-based maternity care across multiple models of care.

College Statement C-Obs 30 – “Maternal suitability for models of care, and indications for referral within and between models of care” (available via www.ranzcog.edu.au)

If the woman falls outside of the GP’s scope of practice as determine by the RANZCOG guideline, please refer to the Armadale Health Service Antenatal Clinic or if necessary, directly to King Edward Memorial Hospital (KEMH) as per the criteria listed on page 16 of this document.

Infectious diseases and immunisation in pregnancy

Live attenuated vaccines are not recommended during pregnancy (e.g. MMR, varicella, rotavirus, BCG, oral typhoid vaccine). If given inadvertently, specialist consultation is advised.

Inactivated influenza vaccine is safe to be given during pregnancy and is recommended as pregnant women are at increased risk of influenza related infectious complications.

For other clinical advice, please contact the on-call microbiologist at KEMH through the switchboard on (08) 9340 2222.

For further advice on pregnancy, travel and vaccinations, please contact a specialist travel medicine clinic.
Investigations

All investigations must be sent to the AHS Antenatal Clinic by email ArmadaleANC@health.wa.gov.au or fax (08) 9391 2293.

Please ensure the results of any investigations are forwarded to us with the referral form for antenatal care and delivery.

If these are unavailable at the time of referral, please request on the pathology/radiology form for a copy of the results to be faxed to Armadale Health Service – Antenatal Clinic on (08) 9391 2293 when completed.

1. **Initial routine investigations for each pregnancy at first visit**
   (obtain informed consent for each test):
   - Full Blood Picture
   - Blood Group and atypical antibody screen
   - Syphilis serology
   - Rubella titre
   - Hepatitis B surface antigen
   - Hepatitis C surface antibodies
   - HIV antibodies
   - Random blood glucose (if high risk of diabetes)
   - Mid Stream Urine
   - Chlamydia screening
   - Vitamin D level
   - Varicella
   - Early dating ultrasound

2. **All women should be counselled and offered fetal anomaly screening.**
   (See page 11)

3. **Investigations to be considered depending on the woman’s clinical circumstances:**
   - pap smear if not done within two years
   - Early diabetes screen (if risk factors present, see table on page 14)
   - TSH
   - Vitamin B12
   - Folate level
   - Haemoglobinopathy screening if in high risk group e.g. high risk ethnic background, FHx of haemoglobinopathy. (see table on page 19)
4. Between 19 to 20 weeks gestation
   - Fetal anatomy ultrasound and cervical length measurement (GP to organise).
   - For more information about cervical length measurement, visit the WA Preterm Birth Prevention Initiative website - www.thewholeninemonths.com.au

5. At 28 weeks (arrange prior to the 28 week visit e.g. at 24 week visit)
   - full blood picture
   - blood group and atypical antibody screen for Rh negative women
   - diabetes screen and/or glucose tolerance test if indicated.

6. At 36 weeks
   - full blood picture
   - blood group and atypical antibody screen if Rh negative (only if the woman missed her 28 week Anti-D)
   - low vaginal swab and rectal swab for Group B streptococcus screening. Patients with a positive result will receive intravenous antibiotics during labour.

Fetal anomaly screening

All women, regardless of age, should be counselled and offered the option of fetal anomaly screening. First trimester screening is the recommended screening test for fetal chromosomal abnormalities (mainly trisomy 21, 13 and 18). Women presenting too late to access this test should be offered maternal serum screening (performed in the second trimester at 15–17 weeks). There is no need to do both.

If either screening test shows an increased risk of fetal abnormality the woman should be referred for counselling at KEMH through the Maternal Fetal Medicine Service of WA – (08) 9340 2705 / fax (08) 9340 1060, or Genetic Services of WA – (08) 9340 1525.

Please indicate on the referral if you would like KEMH to take over management if an anomaly is found. In the case of an actual fetal abnormality, it is suggested the woman be referred directly to the Maternal Fetal Medicine Service for counselling and management.
Screening for Down Syndrome

1. First trimester Screening (FTS)
   - The first part of the test is a blood test to determine the levels of the hormones BHCG and PAPP-A. This is ideally done at 10 weeks (but can be done anytime from 9 to 13 weeks and 6 days). The blood test was previously routinely done on the day of the ultrasound. However the Fetal Medicine Foundation has found that earlier tests improve the sensitivity and specificity of the test.
   - The second part of the test is an ultrasound that is performed between 11 weeks 4 days and 13 weeks 4 days (ideally 12 weeks). The ultrasound determines the thickness of the nuchal translucency – an area behind the neck and under the skin of the foetus that appears black on the ultrasound image.
   - Based on the woman’s age, the nuchal thickness and the hormone levels, a result is given in terms of the particular woman’s risk of carrying a foetus with Down Syndrome, compared to her age related risk.

Table 3. Maternal age vs. Down Syndrome Risk

<table>
<thead>
<tr>
<th>Maternal Age</th>
<th>Chance of having a live born baby with Down Syndrome</th>
</tr>
</thead>
<tbody>
<tr>
<td>20–24</td>
<td>1:1500</td>
</tr>
<tr>
<td>25</td>
<td>1:1350</td>
</tr>
<tr>
<td>30</td>
<td>1:900</td>
</tr>
<tr>
<td>35</td>
<td>1:400</td>
</tr>
<tr>
<td>40</td>
<td>1:110</td>
</tr>
<tr>
<td>45</td>
<td>1:30</td>
</tr>
</tbody>
</table>

2. Maternal Serum Screening (Triple Test)

This test involves a blood test which is performed between 15 and 17 weeks gestation. No pre-test ultrasound is required unless the EDD needs to be confirmed. The test gives two results:

- The risk of a chromosomal abnormality (Down Syndrome most commonly)
- The risk of an open neural tube defect – based on the maternal serum alpha fetoprotein level (MSAFP).
Screening for Neural Tube Defects

This can be done as part of the maternal serum screening test at 15 to 17 weeks or by testing MSAFP alone at 15 to 17 weeks. If the screening test shows the pregnancy to be at increased risk for an open neural tube defect (MSAFP >2.5MoM), referral for a targeted fetal ultrasound examination is indicated. This is a technically demanding ultrasound examination and should be conducted by practitioners with expertise in fetal ultrasound.

Who should be offered MSAFP Testing?

1. Women considered at high risk of having a foetus with an open neural tube defect. This includes women with an open neural tube defect themselves, women who had a previous pregnancy with an open neural tube defect, women taking anticonvulsant medication and women with diabetes mellitus who have poor peri-conceptual control (HbA1C >8.5%).

2. Morbidly obese women, in whom fetal ultrasound imaging quality is compromised, should be offered MSAFP to potentially improve detection rates of severe structural fetal anomalies.

Fetal morphology ultrasound

Fetal anatomy ultrasounds are the recommended screening test for fetal structural anomalies and placental localisation. It is offered to all women between 18 and 20 weeks gestation (ideally 19 weeks).

New evidence has found many cases of preterm birth may now be preventable. The antenatal care of all pregnant women needs to include an assessment of risk of preterm birth.

Ultrasound measurement of the length of the cervix should be a routine component of the “anatomy’ scan performed between 18 and 20 weeks gestation. Please ensure “cervical length” is written on the anatomy scan request.

General Practitioners are requested to arrange for this ultrasound prior to the booking visit and preferably at the Perth Radiological Clinic (PRC) located on site at the Armadale Health Service.

Please request for copies of the results to be faxed to the Armadale Antenatal Clinic on (08) 9391 2293.

High risk: If there is a history of a previous fetal anomaly, recurrent pregnancy loss or abnormal screening results, ultrasounds for these women may be booked at KEMH.

For more information about the latest research on preterm birth, visit the WA Preterm Birth Prevention Initiative website - [www.thewholeninemonths.com.au](http://www.thewholeninemonths.com.au)
Rural patients

Ultrasounds for rural women may be performed at AHS either the day before the Antenatal Clinic appointment or early on the morning of the appointment. You are advised to pre-arrange this early to avoid disappointment.

If rural doctors require medical advice including patient management and need for transfer/admission, they should AHS switchboard on (08) 9391 2000 and ask to be connected to the GP/obstetrician on call.

Gestational Diabetes Mellitus (GDM) screening

Universal screening of pregnant women at 26 to 28 weeks is recommended by the Australian Diabetes in Pregnancy Society (ADIPS). The routine screening tool has recently changed and it is now recommended that all women undertake a **75g Glucose Tolerance Test (GTT)** and it is recommended that this occurs between 24 to 28 weeks.

Armadale Health Service guidelines **no longer recommend the use of the Glucose Challenge Test (GCT)** as a screen for Gestational Diabetes Mellitus.

However if there is clinical suspicion of GDM, a random blood glucose or GTT may be performed at any gestation. Clinical suspicion would include women with GDM in a previous pregnancy or women with symptoms suggestive of diabetes e.g. heavy glycosuria, macrosomia, polyhydramnios.

Please see Table 4 on page 14 for GDM Screening Quick Reference Guide.

Screening tests used:

- Glucose Tolerance Test (GTT) – performed in a laboratory, fasting, 75g.
- Random venous plasma glucose level (PGL) taken at any time, if >7.0mmol proceed to GTT. For more information about guidelines for the testing and diagnosis of GDM, please visit the Australasian Diabetes in Pregnancy Society website – www.adips.org
- The method of diabetes screening is dependent on risk factors and practitioners should refer to the following GDM Screening Quick Reference Guide (**Table 4**).
Table 4. GDM Screening Quick Reference Guide

<table>
<thead>
<tr>
<th>Symptoms or suspicion of GDM</th>
<th>Pre 24 weeks gestation*/booking</th>
<th>24–28 weeks gestation</th>
<th>29–32 weeks gestation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low risk</strong></td>
<td>Immediate GTT</td>
<td>Immediate GTT</td>
<td>Immediate GTT</td>
</tr>
<tr>
<td><strong>High Risk</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Maternal age &gt;30 years</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Women with family Hx of diabetes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Maternal obesity (BMI ≥30)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Hypertension prior to 20 weeks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Previous macrosomic baby (&gt;4000gms)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Polycystic Ovary Syndrome</td>
<td>Perform a random blood glucose (RBG)* RBG interpretation: If &gt;7.0 Mmol/L proceeds to GTT. If &lt;= 7.0mmol/L repeat PGL every 6 to 8 weeks and request GTT at 26–28 weeks</td>
<td>GTT (75g)</td>
<td>GTT (75g) If no prior testing</td>
</tr>
<tr>
<td>▪ Hx or unexplained stillbirth.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Previous baby with congenital anomalies.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Previous GDM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>▪ Ethnicity – Aboriginal, Asian, Indian and middle Eastern groups</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Please note:** A GTT should not be performed within a week of maternal steroid administration.

**Further information**

Any queries about testing, screening, diagnosing or managing diabetes should be directed to the Diabetic Educator at Armadale Health Service on (08) 9391 2220.
Chlamydia screening

- For all women at booking – self obtained lower vaginal swab (SOLVS) and first void urine PCR (FVU)
- Women living in STI endemic areas (Kimberley, Pilbara, Goldfields) should be offered additional screening:
  - at booking include testing for gonorrhoea with Chlamydia specimens
  - between 28 and 36 weeks gestation repeat HIV and syphilis serology
  - at 36 weeks gestation Chlamydia and gonorrhoea screening.

Group B streptococcus (GBS) infection

All patients with the following risk factors will need to receive intravenous antibiotics during labour to reduce the risk of infant infection:

- previously infected infant with GBS
- GBS identified in the urine in pregnancy (GBS urinary tract infection or bacteriuria), regardless of GBS swabs at 36 weeks
- positive vaginal/rectal/peri anal swabs at 36 weeks.

Please fax all results to AHS Antenatal Clinic on (08) 9391 2293.

Maternal Fetal Medicine Service at KEMH

The Maternal Fetal Medicine (MFM) Service at KEMH provides tertiary level ultrasound assessment and diagnosis of pregnancy complications and ongoing management by a multidisciplinary team.

The service provides maternal fetal medicine diagnosis and treatment, in particular for conditions such as congenital abnormalities, rhesus disease, severe intrauterine growth restriction and twin to twin transfusion syndrome.

The specialists and midwives of the MFM service at KEMH can provide counselling and/or management for women who have an increased risk of fetal abnormality on their screening test. They also monitor and manage women who have a high risk pregnancy. To contact the service, call (08) 9340 2705.
Referral to KEMH instead of AHS

**Cardiovascular**
- Pheochromocytoma
- Chronic renal with secondary sequel
- Ischaemic Heart Disease
- Pulmonary Hypertension
- Cardiomyopathy
- Valve Replacement
- Cardiac Surgery

**Respiratory**
- Resting Tachypnoea
- COPD

**Endocrine**
- Chronic Diabetes on medication (oral or insulin)
- Hypopituatarism
- Liver Cirrhosis/failure
- Oesophageal varicies
- Haematological
- Jehovah’s Witness refusing blood products
- Woman declining blood transfusion
- Known Immune Thrombocytopenia.

**Psychiatric**
- All psychiatric diagnoses other than depressive disorders controlled on pregnancy safe medications and high EPDS
- Previous postnatal puerperal psychosis.
Drug/alcohol dependency

- Current and significant drug and/or alcohol dependency
- Abstinent from alcohol/drugs but under the care of specialist teams/services.

Gynaecological

- Recurrent pregnancy loss with gynaecological anatomical abnormality.

Obstetric

- Previous caesarean and anterior placenta praevia
- BMI >40 at booking
- Mono Chorionic Mono Amniotic twins
- Twin to Twin Transfusion Syndrome
- Known anatomical abnormality in first trimester screen or 18 to 20 week anatomy scan.
- Placenta Praevia grade 3 to 4.

The following information is required on all referrals to KEMH:

- woman’s current contact details
- LMP and EDC
- Gravida and parity
- weight, height and BMI
- GP’s intention for shared care
- any relevant medical and obstetric history
- if interpreter services are required.
Guidelines for investigations of patients at risk of a Haemoglobinopathy

Haemoglobinopathies are autosomal recessive disorders which imply that they must be inherited through both parents who may have the disorder themselves, or be carriers. Normal haemoglobin contains a haem molecule that combines with four globin chains; two are classified as alpha and two as beta chains.

Thalassaemia results from decreased synthesis of the globin chains in adult haemoglobin. It is classified as alpha (α) – thalassaemia when there is absent or decreased α-chain synthesis, or beta (β) – thalassaemia when there is absent or decreased β-chain synthesis.

Sickle cell disease occurs when the structure of the beta globin chain is abnormal. Defective genes produce abnormal haemoglobin beta chains resulting in Haemoglobin S (HbS). Sickle cell disease (HbSS) occurs when abnormal genes are inherited from both parents. A sickle cell trait is when a person inherits only one sickle cell gene and does not have the disease.

Screening

The aim of screening (or carrier testing) is to identify carriers of haemoglobin disorders in order to assess the risk of a couple having a severely affected child and to provide information on the options available to manage their risk.

Ideally high risk individuals are offered pre-conception testing.

In the antenatal setting, time is important. Early (first trimester) screening is recommended since it can be difficult to achieve antenatal screening and fetal diagnosis within a suitable timeline if the couple is unaware of the risk.

Diagnosis of the haemoglobin disorders requires combined assessment of the FBP, iron status and haemoglobin HPLC (High Performance Liquid Chromatography).

If a woman is pregnant and is a carrier, organise partner testing and refer to the KEMH Antenatal Clinic. Genetic counselling is available from Genetic Services of WA by calling (08) 9340 1525.

Ethnic groups with a clinically significant prevalence of haemoglobin disorders

<table>
<thead>
<tr>
<th>Beta Thalassaemia</th>
<th>All ethnic groups other than northern European.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha Thalassaemia</td>
<td>Chinese, South East Asian, Mediterranean.</td>
</tr>
<tr>
<td>Haemoglobin E</td>
<td>South East Asian</td>
</tr>
<tr>
<td>Haemoglobin S</td>
<td>African (including African-American and African-Caribbean), Greek, Southern Italian, Turkish, Arab, Indian.</td>
</tr>
</tbody>
</table>
Risk for Haemoglobinopathy

1. Ethnic background
   - African including
   - American or Caribbean
   - Asian
   - Mediterranean
   - Pacific Islander
   - Middle Eastern
   - New Zealand Maori

2. Family history of haemoglobinopathies

<table>
<thead>
<tr>
<th>High Risk</th>
<th>Low Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBP Iron Studies</td>
<td>FBP</td>
</tr>
<tr>
<td><strong>Hb Studies (HPLC)</strong></td>
<td>MCV &lt;80 MVH &gt;27</td>
</tr>
<tr>
<td><strong>Normal:</strong> No further action</td>
<td>Iron studies</td>
</tr>
<tr>
<td>Treat Iron Deficiency if present</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Treat Iron Deficiency if present</td>
</tr>
<tr>
<td></td>
<td>Hb Studies* (HPLC)</td>
</tr>
</tbody>
</table>

Possible/confirmed Hb variant or Thalassaemia trait – refer to Armadale Antenatal Clinic via fax (08) 9391 2293. Expedite partner testing if patient is a confirmed carrier.

*Hb studies can be requested as an add-on to the FBP.

Use of Anti-D in pregnancy

It is recommended that Anti-D is given to all rhesus negative and antibody negative women if there is a risk of fetal-maternal transfusion of blood, such as a miscarriage.

It is also recommended that Anti-D (625iu) be given to all rhesus negative, antibody negative women at 28 and 36 weeks gestation. These women will therefore need to be seen at 28 and 36 weeks. Anti-D is also given to these women at AHS after the birth of their baby if the baby is rhesus positive. A blood test for the group and antibodies needs to be performed prior to administering the 28 week dose of Anti-D.

It is recommended that Anti-D be given to all rhesus negative, antibody negative women if there is risk of fetal-maternal transfusion of blood. Anti-D should be given within 72 hours of the onset of bleeding (the earlier the better).
The dose is as follows:

- **First trimester – 250iu (minidose vial)**
  Indications are threatened or inevitable miscarriage, termination of pregnancy, chorionic villus sampling and ectopic pregnancy.
  **Note:** for a multiple pregnancy the dose is 625iu.

- **Second and third trimester, postnatally – 625iu (full dose vial)**
  Indications are at 28 and 36 weeks gestation and postnatally (if the baby is rhesus positive) and episodes when a fetal-maternal haemorrhage may occur such as amniocentesis, external cephalic version, ante partum haemorrhage or abdominal trauma.
  **Note:** for second and third trimester, a kleihauer test should be performed (1 to 24 hours after the bleeding or sensitizing event) so additional Anti-D may be given if required.

**Recordkeeping**

Anti-D is a blood product and must be traceable. Anti-D is available from the Red Cross (9325 3030), Western Diagnostics (9317 0863), St John of God Pathology (9382 6690) or Clinipath West Perth (9476 5222). GPs **must keep** a register of patients who are given Anti-D and the batch number they receive. This register must be kept at a central location, not in the individual patient notes. An Anti-D register template is available online via the SA Health – [www.sahealth.sa.gov.au](http://www.sahealth.sa.gov.au) (search “Blood product and fridge registers”).

**Pathology Request Forms**

When requesting blood tests for blood group and antibody screen, the request form should include the following information:

- current gestation
- number and gestation of previous pregnancies
- history of blood transfusions any previous antibodies detected
- dates of Anti-D prophylaxis.

If possible please have copies sent by fax to the Armadale Antenatal Clinic on (08) 9391 2293.
Edinburgh Postnatal Depression Score

The Edinburgh Postnatal Depression Score (EPDS) is recommended as a very valuable screening test for possible depression, both in pregnancy and in the postnatal period.

It is recommended that the scoring is undertaken at least once in early pregnancy and again at around 32 weeks of gestation. However, the scale can be used at any stage of the pregnancy and/or the postnatal period. When repeating the EPDS for the woman in her pregnancy, a new form should be used.

Ask the women to mark the response that most accurately reflects how she has felt in the last 7 days for each of the question. It is preferred that the woman uses the EPDS form without numbers next to the questions, this is gold standard practice.

The scoring is from 0 to 3 except in the questions marked with an * where the scoring is reversed, i.e. 3 to 0. Add all of the scores together when completed. A sample of the EPDS form and scoring scale (see Appendix 1) is available in this booklet.

If the woman scores higher than 12 or above, she should be assessed clinically for depressive illness. If the score is between 9 and 11, she is at increased risk for mood disorder and should be monitored closely.

If a woman answers 1, 2 or 3 to Q.10 (self harm), a risk assessment must be undertaken to ascertain the woman’s safety.

Armadale Health Service has a Psychiatric Liaison Nurse for our maternity patients and we also work closely with Social Workers to identify women at increased risk and provide support in the antenatal/postnatal period.
# Edinburgh Postnatal Depression Scale (EPDS)

**Patient Form**

<table>
<thead>
<tr>
<th>In the past 7 days</th>
<th>First visit</th>
<th>32 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have been able to laugh and see the funny side of things</td>
<td>As much as I could</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not quite so much now</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Definitely not so much now</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not at all</td>
<td></td>
</tr>
<tr>
<td>2. I have looked forward with enjoyment to things</td>
<td>As much as I always did</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rather less than I used to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Definitely less than I used to</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hardly at all</td>
<td></td>
</tr>
<tr>
<td>3. I have blamed myself unnecessarily when things go wrong*</td>
<td>Yes, most of the time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, some of the time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not very often</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No never</td>
<td></td>
</tr>
<tr>
<td>4. I have been anxious or worried for no good reason</td>
<td>No, not at all</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hardly ever</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, very often</td>
<td></td>
</tr>
<tr>
<td>5. I have felt scared or panicky for no good reason*</td>
<td>Yes, quite a lot</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not much</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not at all</td>
<td></td>
</tr>
<tr>
<td>6. Things have been getting on top of me*</td>
<td>Yes, most of the time I haven't been able to cope at all</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes I haven't been coping as well as usual</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, most of the time I have coped</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, I have been coping as well as ever</td>
<td></td>
</tr>
<tr>
<td>7. I have been so unhappy that I have had difficulty sleeping*</td>
<td>Yes, most of the time</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes, sometimes</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not very often</td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not at all</td>
<td></td>
</tr>
</tbody>
</table>
8. **I have felt sad or miserable***

<table>
<thead>
<tr>
<th></th>
<th>Yes, most of the time</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes, quite often</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Not very often</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No, not at all</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

9. **I have been so unhappy that I have been crying***

|                      | Yes most of the time  |                               |                           |
|----------------------|-----------------------|-------------------------------|                           |
|                      | Yes, quite often      |                               |                           |
|                      | Only occasionally     |                               |                           |
|                      | No, not at all        |                               |                           |

10. **The thought of harming myself has occurred to me***

|                      | Yes, quite often      |                               |                           |
|----------------------|-----------------------|-------------------------------|                           |
|                      | Sometimes             |                               |                           |
|                      | Hardly ever           |                               |                           |
|                      | Never                 |                               |                           |

**TOTAL**

---

**Other services available at AHS for maternity patients**

**Midwifery/Nursing**

- Aboriginal Antenatal Clinic – Boodjari Yorgas
- STAR Antenatal Clinic (for young mums and those with more complex social issues e.g. Department for Child Protection involvement, domestic violence, mental health)
- Next Birth after Caesarean (NBAC) Clinic – for women who have had one previous caesarean section
- Lactation consultants (inpatient and outpatient)
- Parent education classes
- Maternity psychiatric liaison nurse
- Visiting midwifery service – an early discharge program whereby the midwife visits the mother and baby in their home up to day 5 if warranted for a normal delivery and up to day 7 for a caesarean section.
- Midwifery Group Practice (MGP) – a continuity of carer model with a small team of experienced midwives for antenatal, labour and postnatal care.
Medical

- Specialist anaesthetist
- Specialist obstetrician
- Paediatrician

Allied Health

- Social Work
- Radiology
- Diabetic educators
- Physiotherapy
- Pathology
- Pharmacy

Please note that there is no accommodation at the hospital for partners or family. Overnight stays will only be permitted in exceptional circumstances. Bedding can be provided at the patient’s bed space when required and will be at the discretion of the midwife in charge.

Important contact numbers

- Armadale Health Service (AHS) switchboard – (08) 9391 2000
- AHS Antenatal Clinic (bookings) – (08) 9391 2901
- AHS Antenatal Clinic (Fax) – (08) 9391 2293
- AHS Antenatal Clinic Coordinator – (08) 9391 2686
- AHS Antenatal Assessment Unit (24/7) – (08) 9391 2947
- AHS Emergency Department – (08) 9391 2182
- GP Antenatal Clinic Booking (AHS) – (08) 9391 2285
- Pathology (PathWest – Armadale) – (08) 93912030
- Perth Radiological Clinic (Armadale) – (08) 9391 2010
- Specialist Obstetrician reception – (08) 9391 2906
- King Edward Memorial Hospital (KEMH) – (08) 9340 2222
- KEMH Drug Information Service – (08) 9340 2723

These guidelines have been adapted for Armadale Health Service from the KEMH Antenatal shared care guidelines for General Practitioners 4th Edition – May 2010.

Information contained within this booklet has also been sourced from The Department of Health and Ageing Clinical Practice Guidelines 2012 – Antenatal Care Module 1 and the RANZCOG Guidelines.
Edinburgh Postnatal Depression Scale (EPDS) – Scoring Tool

Calculating a score on the Edinburgh Postnatal Depression Scale

The EPDS is a 10-item questionnaire. Women are asked to answer each question in terms of the past seven days. A clean copy without scores is given on the preceding page.

<table>
<thead>
<tr>
<th>Score</th>
<th>1. I have been able to laugh and see the funny side of things</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>As much as I could</td>
</tr>
<tr>
<td>1</td>
<td>Not quite so much now</td>
</tr>
<tr>
<td>2</td>
<td>Definitely not so much now</td>
</tr>
<tr>
<td>3</td>
<td>Not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>2. I have looked forward with enjoyment to things</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>As much as I always did</td>
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<tr>
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<td>Definitely less than I used to</td>
</tr>
<tr>
<td>3</td>
<td>Hardly at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>3. I have blamed myself unnecessarily when things go wrong*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Yes, most of the time</td>
</tr>
<tr>
<td>2</td>
<td>Yes, some of the time</td>
</tr>
<tr>
<td>1</td>
<td>Not very often</td>
</tr>
<tr>
<td>0</td>
<td>No never</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>4. I have been anxious or worried for no good reason</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>No, not at all</td>
</tr>
<tr>
<td>1</td>
<td>Hardly ever</td>
</tr>
<tr>
<td>2</td>
<td>Yes, sometimes</td>
</tr>
<tr>
<td>3</td>
<td>Yes, very often</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>5. I have felt scared or panicky for no good reason*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Yes, quite a lot</td>
</tr>
<tr>
<td>2</td>
<td>Yes, sometimes</td>
</tr>
<tr>
<td>1</td>
<td>No, not much</td>
</tr>
<tr>
<td>0</td>
<td>No, not at all</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Score</th>
<th>6. Things have been getting on top of me*</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>Yes, most of the time I haven’t been able to cope at all</td>
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<tr>
<td>2</td>
<td>Yes, sometimes I haven’t been coping as well as usual</td>
</tr>
<tr>
<td>1</td>
<td>No, most of the time I have coped</td>
</tr>
<tr>
<td>0</td>
<td>No, I have been coping as well as ever</td>
</tr>
</tbody>
</table>
7. **I have been so unhappy that I have had difficulty sleeping***

<table>
<thead>
<tr>
<th>Option</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, most of the time</td>
<td>3</td>
</tr>
<tr>
<td>Yes, sometimes</td>
<td>2</td>
</tr>
<tr>
<td>Not very often</td>
<td>1</td>
</tr>
<tr>
<td>No, not at all</td>
<td>0</td>
</tr>
</tbody>
</table>

8. **I have felt sad or miserable***

<table>
<thead>
<tr>
<th>Option</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, most of the time</td>
<td>3</td>
</tr>
<tr>
<td>Yes, quite often</td>
<td>2</td>
</tr>
<tr>
<td>Not very often</td>
<td>1</td>
</tr>
<tr>
<td>No, not at all</td>
<td>0</td>
</tr>
</tbody>
</table>

9. **I have been so unhappy that I have been crying***

<table>
<thead>
<tr>
<th>Option</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, most of the time</td>
<td>3</td>
</tr>
<tr>
<td>Yes, quite often</td>
<td>2</td>
</tr>
<tr>
<td>Only occasionally</td>
<td>1</td>
</tr>
<tr>
<td>No, not at all</td>
<td>0</td>
</tr>
</tbody>
</table>

10. **The thought of harming myself has occurred to me***

<table>
<thead>
<tr>
<th>Option</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, quite often</td>
<td>3</td>
</tr>
<tr>
<td>Sometimes</td>
<td>2</td>
</tr>
<tr>
<td>Hardly ever</td>
<td>1</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
</tr>
</tbody>
</table>

**TOTAL**

### ARMADALE HEALTH SERVICE

**REFERRAL FOR ANTENATAL CARE AND DELIVERY**

Fill in electronically and email to ArmadaleANC@health.wa.gov.au or print and mail to Armadale Health Service, Antenatal Clinic, PO Box 460, Armadale, WA, 6992 or alternatively fax to (08) 9391 2293. Please include all blood and scan results/reports, preferably before 14 weeks gestation so that an 18 week midwife appointment can be allocated.

<table>
<thead>
<tr>
<th>Referral Date:</th>
<th>Name of Referee:</th>
<th>Signature:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Address:**

**PREFERRED MODELS OF CARE:**

- GP own and public delivery
  - Name of GP-Obs:
- Private patient under the care of GP-Obs or eligible midwife
  - Name of Practitioner:
- Public ANC from 20 wks and public delivery
- Midwifery Group Practice - from 12 wks and public delivery
- Community Midwifery Program
  - Name of program:
  - Home Birth
  - Domino

**PATIENT INFORMATION**

<table>
<thead>
<tr>
<th>Given Name(s):</th>
<th>Family Name:</th>
<th>Previous Name(s): (eg maiden)</th>
<th>Date of Birth:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Address:</th>
<th>Mobile:</th>
<th>Country of Birth:</th>
<th>Ethnicity:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Interpreter required:</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Height (cm):</th>
<th>Weight (kg):</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Medicare number:</th>
<th>Exp:</th>
<th>LMP:</th>
<th>Gestation at dating scan</th>
<th>If twin pregnancy (select type)</th>
<th>Select Type</th>
<th>EDD acc to LMP:</th>
<th>Influenza Vaccination</th>
<th>Date of vaccination:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Known medical conditions:**

**PREVIOUS PREGNANCY INFORMATION**

<table>
<thead>
<tr>
<th>Pregnancy</th>
<th>Year</th>
<th>Outcome (select from list)</th>
<th>Name</th>
<th>Gestation (w)</th>
<th>Weight (kg/lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>Select From List</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>Select From List</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>Select From List</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>Select From List</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>Select From List</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ANTENATAL TESTS PERFORMED:** (Tick box if done and attach to fax)

**REQUIRED ON ALL PATIENTS**

- Dating Scan
- First trimester screening (11-14w)
- Details scan (18-22w) if already performed or Date Booked:
- Full Blood Count
- Blood Group Antibodies
- Chlamydia
- Hepatitis B and C
- HIV
- Syphilis
- Rubella Titre
- Varicella
- Midstream urine
- Vitamin D level
- Haemoglobinopathy screening
- Glucose screening (High risk patient)
- Pap smear
- Gonorrhoea

**ONLY IF INDICATED**

- Ferritin level
- Vitamin B12 level
- Folate Level
- Thyroid Stimulating Hormone (TSH)
These guidelines have been adapted for Armadale Health Service from the King Edward Memorial Hospital (KEMH) Antenatal shared care guidelines for General Practitioners 5th Edition – March 2014.

Information contained within this booklet has also been sourced from The Department of Health and Ageing Clinical Practice Guidelines 2012 – Antenatal Care Module 1 and the RANZCOG Guidelines.

Information is up to date at the time of printing.

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