Gold Coast University Hospital
Maternity Shared Care Guidelines

Updated 2014
Acknowledgements

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General Practice Gold Coast (GPGC)
Queensland Maternity and Neonatal Clinical Guidelines Program
ACT Health Maternity Shared Care Guidelines
Three Centres Consensus Guidelines on Antenatal Care
National Evidence Based Antenatal Care Guidelines
Medicare Local Gold Coast

Foreword and Disclaimer

This booklet contains guidelines for Gold Coast General Practitioners and staff of Maternity Services at Gold Coast University Hospital. The guidelines are intended to assist with shared maternity care for women who plan to birth at the Gold Coast University Hospital.

The guidelines represent a consensus view from various groups that are involved with the provision of public maternity care in Queensland. The guidelines make every effort to ensure all situations are considered and follow contemporary best clinical practice. It is possible however these guidelines will contain errors and omissions and they may not remain current as clinical practice changes over time. This document will be reviewed every two years, and major changes to best practice in the interim will be advised through usual GP communication channels eg Generally Speaking.

The guidelines therefore should not be used as the definitive source of information for best practice in maternity care. The ultimate responsibility for the quality of care provided to women will remain with individual clinicians and this care should be in accordance with contemporary clinical literature. The most current version of these guidelines and the women’s information sheets are available on the General Practice Gold Coast website. (www.gpgc.com.au)

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Fact Sheet: Induction of Labour
Fact Sheet: Nuchal Translucency Scan
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Edinburgh Postnatal Depression Scale (EPDS)
1 INTRODUCTION

Welcome to the second edition of the Shared Care Guidelines for practitioners involved in maternity care for women on the Gold Coast. This is often a time that women will present with a number of minor complaints and a few more important ones and it is hoped the information contained in these guidelines will be of use to those providing care in this area.

A working party has consulted widely to ensure local issues and statewide best practice principles have been incorporated. It must always be remembered that this is a dynamic document. Whilst every attempt has been made to ensure that current recommendations, best practice points and evidence based medicine have been incorporated into this version there will always be changes before the next review.

Ongoing changes of significance will be communicated via usual GP communication channels including Generally Speaking and the GPGC website www.gpgc.com.au

These guidelines provide an outline of the respective responsibilities of General Practitioners (GPs) and Gold Coast University Hospital Antenatal Clinic (ANC) in shared maternity care. The guidelines are expressed in broad principles, which allow for flexibility in clinical judgement in individual cases. Lists are used as illustrations, but are not inclusive of all relevant conditions.

These guidelines apply to women with low risk pregnancies. Women with moderate or high risk pregnancies will require individually tailored care, and may receive most or all of their care from the Antenatal Clinic in conjunction with obstetricians. Risk may also alter during the course of the pregnancy and therefore require a change to the agreed plan.

In general the agreement for shared maternity care is between the woman’s GP and the Gold Coast University Hospital (GCUH). Participation in shared care implies acceptance of the agreed guidelines. Where the agreement is not shared care, this will be communicated to all the maternity care providers.

1.1 Eligibility for Shared Care

All women can be considered for antenatal shared care, however women with complex medical and obstetric conditions will most likely be managed by the Obstetric Unit at Gold Coast University Hospital. For high risk women the obstetrician and other Antenatal Clinic staff will explain the care options based on the assessment of risk to the woman and obtain her agreement.

1.2 Referral

The GP should refer the low risk woman to Antenatal Services after 12 weeks gestation using the Antenatal Referral Template that has been developed by GPGC and which has been installed in most practices’ clinical software. These templates, if not already installed, are available on the GPGC website (www.gpgc.com.au). A sample is contained in Section 15 (Forms) in this document.

The referral should contain the details of the share care GP, the intention to share care and any relevant clinical, medical or social details. All antenatal bloods and the reports of any ultrasounds should be attached to the referral.

There will be women that have pregnancy complications that need referral to Antenatal Services earlier than 12-16 weeks. In these instances the referral should be made at the earliest time, clearly
stating the reason for an early request for review. Examples may be previous mid trimester loss and consideration of an elective cervical suture or those women requiring early consideration of thromboprophylaxis due to known thrombophilia. If a referral is made early, advice can always be given regarding a management plan. A new service has been developed to manage these referrals.

Maternal Fetal Medicine is a new service at GCUH. A new referral template is available for women who may require highly specialised care during their pregnancy.

1.3 **Pregnancy Health Record**

The Pregnancy Health Record should be commenced by the GP at diagnosis of pregnancy. Copies are available from GPGC (07) 5507 7777.

All maternity carers will fill in this record at each consultation and encourage the woman to carry it with her at all times. The woman should be encouraged to take her Pregnancy Health Record to every health professional she consults during her pregnancy (even if seen antenatally in Birth Suite or Emergency Department), whether on a pregnancy related matter or not.

It may be more appropriate for detailed information about previous birth history to be filled in at the hospital where there may be a record of the birth. If the birth is complicated or was at a non-Queensland hospital then it may be appropriate to ask the woman to agree to the record being sent from that hospital.

1.4 **Antenatal Care and Services**

Women referred to Gold Coast University Hospital for shared care will be offered a Booking Visit between 12- 16 weeks. Care up to this point is the responsibility of the GP, or midwife. At this visit a history will be taken and information regarding education and birthing options at Gold Coast University Hospital will be discussed. Referral to Antenatal Services should be made as soon as possible after 12 weeks. Women who arrive on the Gold Coast later in their pregnancy should be referred as soon as possible.

The Antenatal Clinics (ANC) at GCUH are part of Queensland Health’s maternity services and are provided on an outpatient basis. Women booked into the clinics are booked as public patients and therefore will not have choice of doctor on admission. A team of maternity care providers shares the woman’s care. This may include midwives, residents and registrars in training and specialist obstetricians.

1.5 **Responsibilities**

Responsibility for appropriate referral, investigation and follow up in the community rests with the participating GP. The antenatal service staff will provide appropriate care and follow up of any investigations ordered while attending the clinic. Once the woman is admitted, the maternity care team at Gold Coast University Hospital are responsible for appropriate care and follow up. Clearly care may overlap at times. An overall principle of shared maternity care requires that all parties provide comprehensive care, adequate documentation and maintain effective communication by use of the Pregnancy Health Record.

1.6 **Investigation results**

It is the responsibility of whoever orders an investigation to request that the other party receives the
result also. For the ANC, this will mean marking each request form with the share caring GP’s name and suburb. GPs ordering investigations should request a copy of the results for Gold Coast University Hospital Antenatal Clinic on the request form.

1.7 **Assessment in Birth Suite after 20 weeks**

If you require urgent medical advice for women after 20 weeks of pregnancy please contact 56871245 to discuss with one of the antenatal team members. This number is staffed 24 hours a day, seven days per week and can transfer your call to the most appropriate team member. Please contact this number before sending a woman to the hospital.

Should a woman be assessed as an acute episode after 20 weeks this will be recorded on her Pregnancy Health Record. An admission history and any care provided will be recorded and remain in her hospital clinical records.

Women with pregnancy complications in 12-20 weeks should be discussed with the Obstetric registrar or specialised on for the day as to where the most appropriate place is for review. The Emergency Department should be reserved only for those women who have a complication unrelated to pregnancy.

**Early pregnancy complications are now seen during business hours in a dedicated unit within the Women’s and Newborn Health building. If the woman is in any way medically unstable they should be referred to the Emergency Department for assessment. The Early Pregnancy Assessment Service for clarification during business hours**

1.8 **Admission to hospital during the antenatal period**

If admitted to hospital during the antenatal period, a copy of the discharge summary will be given to the woman on discharge from hospital and sent to the GP by the preferred method (electronic, fax or post).

1.9 **Non-attendance at ANC**

If a woman does not attend for an ANC visit and no substitute appointment has been made the ANC may attempt to contact the woman to arrange an alternative appointment. If the ANC are unable to contact the woman or she refuses to attend, the GP will be notified. All efforts are made to ensure that these women are supported in their care and in appropriate circumstances the service can be provided in alternative venues.

1.10 **Discharge after birth**

On discharge a copy of the birth summary is placed in the baby’s Personal Health Record (Red Book) for the woman to give to her GP. A discharge summary (EDS) will be sent to the GP by the preferred manner. Severe complications i.e. neonatal death, injury or malformation, or maternal morbidity requiring follow up will be communicated to the GP as soon as possible by pho
2. COMMUNICATION AND ACCESS

During Business Hours
The best point of contact for clinical and other enquiries:

0730-1630 Monday-Friday
Antenatal Referrals FAX 56871597
Antenatal Clinic (ANC) PH 56871526
Antenatal GP Liaison Midwife PH 56871597

Maternity Assessment and Triage Unit (MATU) PH 56871425
Birthing Registrar PH 56871571

Birth Centre and Birthing Services
Midwifery Group Practice PH 56871431

Child Health Centres (Central Booking Number) PH 5519 2600
* Child Health Clinical Intake Team PH 5519 2605*
DO NOT give this number to patients PH 5519 2617*

Genetic Health Queensland PH 3636 1686
General Practice Gold Coast PH 5507 7777
- ATAPS referrals
- Pregnancy Health Records

Other
Translating and Interpreting Service PH 131 450

NPS Medicines Line (Consumers) PH 1300 MEDICINE
1300 633 424

Poisons Information Centre (24hrs) PH 131 126
13 HEALTH
2. HAVING A BABY AT THE GOLD COAST HOSPITAL

In addition to GP Shared Care, women birthing at Gold Coast University Hospital may request or require alternative models of care. These include:

- Midwifery Group Practice (formerly known as Birth Centre Care)
- Community Midwifery Partnership Program (shared care with GP or hospital obstetric team).
- High Risk Obstetrics Hospital Care
- Eligible Privately Practicing Midwives with access agreements.

3.1 Midwifery Group Practice (Birth Centre) Care

Midwifery Group Practice (MGP) care is available for women who are low/normal risk through the Birth Centre which offers a natural approach to childbirth with care by midwives, and minimal use of drugs and intervention. Other women may access continuity of midwifery care through a MGP model or a Community Midwifery model and birth in the Birth Centre if all normal or the main Birthing Suite if multidisciplinary care is needed (see models of care information brochure).

Access to MGP care will be assessed when the woman contacts the maternity service and at the Booking Visit. Women will need to visit their GP in the early stages of pregnancy for routine antenatal screening tests, first trimester combined screening bloods (Free ßhCG and Papp A) after 10 completed weeks and preferably 3–5 days prior to Nuchal Translucency Ultrasound which should be performed between 11 weeks and 13 weeks +6 days.

The remainder of their routine antenatal, labour, birth and postnatal care is by the Midwifery Group Practice (MGP) midwives. We are very mindful of the need to ensure continuity of care with all women who engage in the Maternity Services of GCH. GPs are a valued partner in the care of the women we share. Women will be encouraged to maintain their relationship with the GP, some will elect to continue in a shared care model in the MGP. Women will attend their GP for other health related care, other than normal maternity care. The MGP midwives will communicate with the woman’s GP and liaise in partnership regarding additional health care requirements and ongoing family GP care for the mother and baby postnatally.

Women who have no complications and have normal labours will birth in the Birth Centre located within the Birthing unit. If complexities arise the woman will be cared for by the MGP midwife and the multidisciplinary team in collaboration.

Natural measures to relieve pain in labour such as massage, water immersion and position changes are promoted within the Birth Centre environment. Women requesting or requiring an epidural will may need to move to the main Birthing Suite, the MGP midwife will continue to provide midwifery care with the Birthing Suite Team.

Women in MGP models of care who are healthy and have a normal birth, are discharged from the Birth Centre or Birthing Suite 4–6 hours after birth and are visited daily by MGP midwives for the first few days and then on an individual needs basis up to 4-6 weeks postnatally. The woman can contact the MGP midwives via phone if she has any worries or concerns during the pregnancy or postnatally. Women attend their GP for a visit around 3-5 days postnatally with their baby and then if there are any health needs for either the mother or baby that are not within the scope of practice of
the midwives. The women are then transferred for ongoing family care with their GP 2-6 weeks postnatally and for ongoing child health services.

3.2 Community Midwifery Partnership Program

Women who elect midwifery input into their childbirth continuum, will be able to access midwifery care after their initial booking visit with the Gold Coast University Hospital antenatal service. The schedule of visits will be aligned with the Pregnancy Health Record and options for shared care with the woman’s GP or the obstetric team will be available. Midwifery care will be based in community venues for antenatal and postnatal care, with options for home visiting of mother and baby determined by the woman’s place of residence. The community midwives will develop relationships with the local GP practices when GP/ Midwife shared care is the woman’s choice. Women will attend their GP for a visit around 3-5 days postnatally and care will be transferred to the GP for ongoing family care and child health services.

Changes in national and state legislation as a result of the National Maternity Reform has enabled women to access Medicare rebates for maternity care with midwives who have satisfied additional qualifications. Gold Coast University Hospital has access agreements with a number of these midwives who operate through Gold Coast Midwifery Services, My Midwives Gold Coast and My Midwives South Brisbane. These midwives offer services in either a public shared care model or a private continuity model.

Note: All healthy well women who have a normal birth, a healthy baby and leave hospital 4-6 hours after their birth, will be provided with a community midwifery postnatal program of support. This will comprise of a combination of home visits, phone contact and access to midwifery care and support at local community venues.

3.3 GP Shared Care

Most of the antenatal care is delivered by the GP with attendance at the hospital for a Booking Visit, 36 weeks and 41 weeks if there are no emerging concerns in the pregnancy. Shared care is conducted with a team of maternity care providers including midwives, residents and registrars in training and specialist obstetricians.

The majority of women will continue in a shared care model with the GP with low or normal risk.

This model may also include women with a variety of complications in the pregnancy and the schedule of visits adjusted to ensure that individual care is tailored to a woman’s needs. This should be clearly documented so that all carers involved and particularly the woman are certain about the timing and place of an antenatal visit.

GPs are encouraged to provide Anti D for their Rhesus negative women at 28 and 34 weeks where possible.

All practitioners involved in an antenatal shared care model of care are bound to work within their scope of practice. It is not acceptable that antenatal assessment is provided by Enrolled nurses or Registered Nurses.
3.4 **High Risk Obstetric Hospital Care**

Women whose pregnancies are assessed as being moderate to high risk, due to a medical or obstetric condition, may be recommended for hospital based antenatal care with a specialist obstetrician. There may be opportunities for these women to continue to be involved in a modified shared care programme. This will be documented in the Pregnancy Hand Held Record and should involve the GP, hospital and the woman.

Some women will require a shared care model with the Maternal Fetal Medicine Unit with either the GP, continuity of care models with midwives, shared care with the obstetric teams. Clear documentation and discussion with the woman to ensure she understands her model of care is paramount.

3.5 **Post-delivery care**

All women receiving GP shared care or Obstetric Care will birth in the Gold Coast Hospital Delivery Suite at Southport and be transferred to the post-natal ward after delivery.

All women are eligible to participate in the Maternal Home Visiting Program (formerly Obstetric Early Discharge Program - OEDP), where a midwife will visit them at home after discharge. Subsequent visits are negotiated after the initial visit, and women who decline to participate are followed up by phone.

Women need to reside within the geographical catchment area to be eligible for this service; from Ormeau in the north, to the base of Tamborine Mountain and south to the Queensland-NSW border.

### 3. SUITABILITY FOR SHARED CARE

The categorisation guidelines below are based on those produced by RANZCOG and The Australian College of Midwives. They are a basic first step guideline to assess risk in pregnant women.

Shared care is suitable for a “normal healthy woman with an uncomplicated singleton pregnancy” (Category A). Category B and C require additional care from an obstetrician or other specialist.

Each woman’s risk factors need to be assessed individually during the pregnancy. Some women may have risk factors but still be suitable for antenatal shared care. A woman’s level of risk can change throughout the pregnancy. The following categories are intended as guidelines only.

4.1 **Category A: Low Risk Factors**

Category A women can be managed as shared care with the general practitioner. They are women with pregnancies that are known to be low risk and do not have the conditions listed below.
4.2 **Category B: Moderate Risk Factors**

Women with the following conditions should be seen as early as possible in the pregnancy by their GP and their care discussed with an obstetrician/relevant specialist early in the pregnancy if required, based on severity of the condition.

a) **From first visit**

- Established medical disorders
  - asthma
  - any pre-existing diabetes
  - epilepsy
  - cardiac disease
    - renal disease
  - autoimmune disorders.

- Multiple pregnancy
- Haemoglobin < 100 g/L
- Maternal age < 15 years or >35 years
- Active infectious disease eg: syphilis, HIV positive, Tuberculosis, and Hep B and Hep C
- Previous caesarean section
- Previous cone biopsy
- Previous LLETZ
- Previous PPH
- Haemoglobinopathy
- Essential hypertension
- Substance abuse or illicit drug use
- Cardiac murmur
- Uterine abnormality - eg bicornuate uterus
- History of pulmonary embolus or DVT
- Obesity; BMI > 35
- Malignant disease

b) **Past history**

- Previous mid-trimester loss
- Previous perinatal loss
- Recurrent miscarriage (3 or more)
- Preterm labour < 35 weeks
- More than three terminations of pregnancy
- Pre-eclampsia/eclampsia
- Previous intrauterine growth restriction
- Cervical incompetence
- Possible genetic disorder (eg thalassaemia)
- Puerperal psychosis
c) During Pregnancy
   - Gestational diabetes
   - Unstable lie after 35/40
   - Intrauterine growth restriction
   - Antepartum haemorrhage
   - Non-vertex presentation after 35/40
   - Cholestasis of pregnancy
   - Low PAPP-A (<0.3 MoM) on nuchal translucency screening.
   - Placenta praevia
   - Fetal abnormality

d) Obstetric History
   - Previous preterm pre-labour rupture of membranes
   - Previous preterm labour
   - Three or more first trimester terminations of pregnancy
   - Mid-trimester termination of pregnancy
   - Scarred uterus (previous caesarean or surgery)

e) Medical
   - Minor cardiac disease
   - Minor/moderate hypertension
   - Diet controlled glucose intolerance
   - Glucose challenge load test > or equal to 7.8 mmol/l
   - Sexually transmitted diseases, eg; Chlamydia
   - Rheumatoid arthritis

f) Psychiatric
   - Depression
   - Previous psychotic illness
   - Mood disorders
   - Schizophrenia
   - Any significant psychiatric conditions

g) Obstetric Complications during THIS pregnancy
   - HSV
   - Mild pre-eclampsia
   - Preterm pre-labour rupture of membranes
   - Threatened preterm labour
   - Prolonged rupture of membranes
   - Grand multipara (> 5 babies)
   - Polyhydramnios
   - Malpresentation
   - Pregnancy > 42 weeks gestation
   - Uncomplicated twin pregnancy
   - Assisted Reproduction Pregnancy
4.3 **Category C: High Risk**

These women should be cared for by Obstetricians/O & G registrars in the Antenatal Clinic to determine further pregnancy care. Referral to the Maternal Fetal Medicine Unit may also be considered depending on the nature of the risk.

Continuity of care models with midwives may also be appropriate in addition for emotional support and care during pregnancy, labour and birth, with obstetric lead care.

**a) Complications of pregnancy:**
- Previous stillbirth or neonatal death
- Antepartum haemorrhage
- Suspected fetal abnormality
- Intrauterine growth restriction (IUGR)
- Congenital anomalies
- Previous preterm birth x 2
- Rhesus alloimmunisation or other significant blood group antibodies
- Complicated multiple pregnancy
- Threatened preterm labour
- Cervical suture
- Substance abuse or illicit drug use
- Pre-existing diabetes mellitus
- Insulin requiring gestational diabetes mellitus
- Body Mass Index (BMI) > 35

**b) Medical Disorders**
- Renal disease
- Severe cardiac disease
- Severe asthma
- Endocrine disorders
- Thrombo-embolic disorders
- Connective tissue disorders
- Hepatic disorders
- Haematological disorders
- Inflammatory bowel disorders
- Neurological disorders
- Severe thyroid disorders

**c) Infective Disorders**
- HIV

**d) Severe hypertension**
- Systolic BP > 170 or
- Diastolic BP > 110
- Hypertension with proteinuria
4. WHAT WOMEN WANT IN MATERNITY CARE

Consumer consultation has indicated that the following issues are important to women during their maternity care.

5.1 **Information**

- Use language the woman understands
- Volunteer information early; do not wait for the woman to ask
- Provide written information she can take away
- Discuss choice of infant feeding early, it is thought that women choose their feeding method in the first trimester
- Be happy to answer all questions
- Help women evaluate conflicting or different information
- Discuss choices and options in relation to procedures and known outcomes and clearly explain the reasons for procedures, costs and results of any antenatal investigations or examinations
- Determine the need for an interpreter
- Discuss privacy/confidentiality

5.2 **Choice**

If there is a choice to be made, give the woman the appropriate information for her to make her decision. Provide appropriate information for women to make choices throughout their care including support and education regarding birth plans. Advise women to discuss their birth plan with staff at their booking hospital.

5.3 **Control**

Once a woman has made her informed decision, abide by it.

5.4 **Personal Care**

- Ensure that the woman’s whole being is considered during her pregnancy, including her relationships, work situation, health concerns, support networks, beliefs and past experiences that may have an impact on her pregnancy

- Welcome and include partners and children in consultations while respecting her privacy and confidentiality

- Be sensitive to a woman’s concerns about the financial cost of consultations and antenatal investigations
5. MATERNITY CARE PLANNING

6.1 Pre-conception

Aim
To detect prior to pregnancy those women needing medical assistance to optimise conception and viability, and to clarify expectations/concerns relating to the pregnancy.

Consider need for referral for physician or obstetric review, or genetic counselling.

- Identify pre-existing illness and undertake medication review eg IDDM, epilepsy
- Identify previous pregnancy complications eg recurrent miscarriage
- Identify family history of inherited disorders or previous child with neural tube defect or chromosomal abnormality
- Morbid obesity.

Recommend folic acid supplementation to reduce risk of neural tube defects

- 0.5mg orally daily, taken at least one month prior to conception, and up to 12 weeks gestation
- 5mg/day for women at increased risk
  - previous affected pregnancy
  - pre-existing diabetes
  - on anti-epileptic medications
  - BMI > 35 kg/m²
  - Haemolytic anaemia

Take history of diet, calculate BMI and provide appropriate advice in relation to eating and exercise. Obesity (pre pregnancy BMI > 30) is associated with poor obstetric outcomes. Consider referral to dietician.

Take history of smoking, alcohol and drug use (including illicit drugs), advise regarding effects of smoking, alcohol and substance use in pregnancy, and provide information on QUIT programs and other supports.

Consider pre pregnancy blood tests

- Check Rubella immunity and Varicella immunity if no clinical history of chicken pox or varicella vaccination.

- If not immune arrange vaccination when certain the woman is not pregnant, recommend reliable contraception and advise to avoid pregnancy for 28 days after vaccination

- All antenatal bloods can be considered in the pre-conception workup

Suggest woman keeps a diary of her menstrual cycle

Perform pap test if due
6.2 **First trimester**

**Aim**
- To provide information and support for maintaining a healthy pregnancy
- To determine the viability of the pregnancy
- To assess fetal number and normality
- To decrease known teratogens or other hazards to maintenance of pregnancy
- To detect and manage underlying medical or emotional conditions, ie hypertension, diabetes, valvular heart disease, social isolation, depression

**Accurate dating of last normal menstrual period, cycle length and regularity, and hence estimated due date (EDD) if possible**
- If unsure of dates organise dating scan before 12 weeks
- Calculate Estimated Date of Birth (EDB) and record date in Pregnancy Health Record

**Full obstetric, gynaecological, medical and family history** (esp. multiple birth, birth defects, diabetes, PIH)
- Assess risk and refer as necessary for genetic counselling.

**Medications, drugs, alcohol and smoking**
Discuss implications of smoking and substance abuse, advise cessation of smoking and offer referrals as appropriate. There is no known safe level of alcohol use in pregnancy. All women should be advised not to drink in pregnancy.

**Psychosocial history, attitude to pregnancy and support systems in place.**

**Clinical examination** including height, weight, body mass index (BMI), BP, cardiovascular system, breasts, thyroid, dental, fetal heart (if possible).

A full examination, where possible is performed and documented by the completion of the 20-week visit for optimal determination of risk status:
- Refer for advice from dietitian if BMI > 30
- Pap test is recommended to the woman if due. There is no contraindication to a Pap test in pregnancy, however it is not recommended to use a brush, which may invade the cervical canal. A spatula will usually obtain sufficient information. An abnormal result requires follow up with a specialist obstetrician for colposcopy during the pregnancy. It needs to be documented on the request that the woman is pregnant.

**Order all routine investigations**
FBC, blood group and antibodies, HepBsAg, HIV, Rubella titre, Syphilis EIA, MSU.
Offer Hep C testing as appropriate.

Note: Syphilis EIA, HBsAg, rubella titre performed in the past 24 months should generally suffice unless there is a clinical indication that would alter risk. Blood group may be available from a previous pathology document. However, antibodies need to be
checked each pregnancy regardless of Rh status. If the previous pregnancy or the current pregnancy tests were performed internationally, then Australian testing may need to be repeated

Organise for a Glucose Tolerance Test to exclude underlying diabetes at 16-20 weeks if multiple risk factors are present for example obesity (BMI >30), previous large baby (>4kg), previous unexplained stillbirth, age > 35 years, strong family history, history of GDM, Asian or Pacific Islander ancestry, PCOS.

Explain shared care and discuss options for antenatal care

Discuss and order first trimester combined screening for aneuploidy (Blood test and nuchal translucency ultrasound).

Order routine morphology ultrasound for 18-20 weeks.

Commence Maternity Record

Make sure the woman is taking folic acid

Provide general advice regarding routine antenatal and pregnancy care and information about nutrition in Pregnancy, Listeria and foods to be avoided (provide information sheets – see Information Sheets for Women – Section 14)

Discuss baby feeding options and promote breastfeeding if no contraindications

6.3 Second trimester

Aim
- To detect conditions which may threaten the welfare of the mother or her baby
- To optimise maternal health and opportunities for fetal growth (e.g. multiple pregnancy, malformed fetus, cervical incompetence and low lying placenta should be diagnosed by this stage). Ongoing monitoring may detect problems of fetal growth, maternal obstetric complications (e.g. preterm labour, rupture of membranes or antepartum haemorrhage)

Gold Coast University Hospital Booking Visit will occur in Second Trimester 12-16 weeks. All women will be seen by a midwife for the following:
- Pregnancy information
- Education and advice re Antenatal Education Sessions including physiotherapy
- Explain pregnancy care options
- Complete hospital documentation
- Discuss baby feeding options
- Discuss birth plan. If previous caesarean commence on Vaginal Birth After Caesarean (VBAC) pathway
- Edinburgh Postnatal Depression Scale (EPDS) and Safe Start Assessment

Women identified to be at high risk for mental health issues will be referred to the Perinatal Mental Health Multidisciplinary Safe Start Meeting, where their needs will be reviewed and they will be
allocated a health professional from that group to assist in accessing necessary supports or making appropriate referrals. If there are any concerns in the preconception or early antenatal course this should be indicated on the referral.

Antenatal visits with GP around this time should be approximately every four weeks until 28 weeks, then fortnightly until 36 weeks (see schedule of visits in Pregnancy Health Record).

Blood pressure (BP) should not exceed 140/90 without adequate diagnosis. Assess on an individual basis as there may be times when a BP lower than this is significant

Fundal height is measured in centimetres from the top of the fundus to the top of the symphysis pubis. Results vary between individual observers, thus each practitioner must be consistent in what he/she measures. Measurement commences after 20 weeks and should roughly equal the weeks of the pregnancy. Generally a reading 3cm either above or below the weeks of pregnancy, without adequate reason (i.e. multiple pregnancy, or transverse lie) requires assessment for abnormality of growth. This should be done by ultrasound and referral back to the ANC for assessment, if suspicious of fetal growth restriction. Sudden increase in fundal height may require immediate referral or investigation for polyhydramnios.

Oedema. Peripheral oedema is common in pregnancy, however generalised oedema, in association with elevated BP and/or proteinuria etc, requires immediate referral

Fetal heartbeat should be auscultated at every visit and after 20 weeks the woman should be asked whether she has normal baby movements.

Blood tests for Hb and Glucose load
- FBC and Glucose Challenge Test for all women at 26-28 weeks
- Blood Group Antibodies for Rhesus negative women 26-28 weeks prior to administration of Anti D
- All rhesus negative women will require the first dose of Anti D to be given at 28 weeks. GPs are encouraged to make arrangements with the Red Cross Blood Bank to become a provider of Anti D for their shared care women. At present women can still receive this at GCH.

Weight gain is variable. Normal weight gain is between 8–14 kg. Dietary requirements should be discussed early in the pregnancy. In general routine weighing has no proven benefit.
Ideal weight gain is determined by pre-pregnancy weight. The Institute of Medicine recommends

Maternal weight is not clinically useful for detection of:
- Growth restriction
- Macrosomia
- Pre-eclampsia

Weight gain of >20kg is significantly associated with poor obstetric outcome. Immediate referral is required for sudden weight gain in association with:
- Oedema
- proteinuria
- Elevated BP
- Symptoms of headache
- Visual change
- Abdominal pain

**Urinalysis**: Routine testing of urine for detection of proteinuria in low risk women is not recommended. Careful consideration of urinary symptoms suggestive of urinary tract infection or signs of preeclampsia should prompt a urinalysis. If attended, acceptable readings are trace protein, sugar, blood, or white blood cells.

Protein levels of 2+ will require a referral to eliminate the possibility of preeclampsia. MSU & HVS may be indicated in the presence of small amounts of protein and white blood cells.

During this trimester, the following events require thorough assessment, and immediate referral:
- PV bleeding or fluid loss
- Uterine contractions that do not subside with rest and are painful
- Diminished or absent fetal movements
- Persistent or severe abdominal pain

6.4  **Early third trimester (<34 weeks)**  

Regular antenatal visits will continue fortnightly in this time  

Rhesus negative women should be reminded to attend for their second Anti D injection at 34 weeks (repeat antibody testing is not indicated). GPs are encouraged to make this available to their patients by arrangement with the Red Cross Blood Bank.

**For Consideration**
- Assessing special needs
- Reinforcing general health care
- Education
- Clarification of hospital policies

6.5  **Later third trimester (>34 weeks)**  

**Aim**
- To detect possible complications to normal vaginal birth

Routine hospital antenatal visit scheduled at 36 weeks.

36 week bloods can be organised in general practice with copies to GCH. If the woman continues to have a normal singleton pregnancy and the 28 week FBC had normal parameters, the FBC could be eliminated.

Rhesus negative women having their second injection of Anti D at GCUH will have it at this visit.
Antenatal visits with GP should then be conducted every 1-2 weeks from 36 weeks as indicated in the Pregnancy Health Record

- BP
- Fundal height
- Lie of fetus. Abnormalities of lie require accurate assessment in consultation with the clinic from 36 weeks. In this situation fetal normality and any abnormalities of placental position, pelvic anatomy or pathology should be determined
- Presentation and engagement of the presenting part. Breech presentation should be accurately determined and its management discussed with the clinic at any time from 36 weeks. Management will depend on gravidity, clinical signs and other issues related to the mode of delivery
- Fetal heartbeat and fetal activity. Maternal perceptions of fetal movements should be taken as an important factor in fetal well-being.
- Preparation for labour
- Advice regarding post-partum care. The GP should specifically advise the woman in later pregnancy to return for post-partum visits and advise re options for Child Health visits with new baby to Gold Coast Child Health Centres.

6.6 **Post term (>41 weeks)**

Antenatal visit at Gold Coast Hospital

Women scheduled to birth at GCUH will return to Antenatal Clinic for assessment of continuing fetal wellbeing and timing of birth including

- Discussing options for induction or continuation of pregnancy
- Discharge Planning: Discuss follow up and any concerns eg. who to contact after hours.
  Discuss the woman’s support networks and what services are available

6.7 **Post-partum period**

Aim

- To detect and manage complications of birth, eg. endometritis, retained products of conception, genital tract injury, dyspareunia
- To help establish infant feeding
- To assess and help optimise emotional state of the mother and family relationships
- To manage persisting maternal disease, eg. Hypertension, diabetes
- Provide care of the neonate
- Discuss home support and follow up

**Early Post- Partum**

This visit is most important for those women and babies at risk of physical, emotional or social difficulties, or those unprepared for care of a newborn.

Mother – Discuss birth experience, emotional state, perineal or caesarean section scar healing, PV loss, BP, breastfeeding, supply, breasts and nipples
Baby – Review Personal Health Record (“Red Book”), attend any routine follow up and examine infant with special emphasis on examining the heart and hips

Check mother and infant, feeding and family relationships
- Psychological wellbeing of mother (assess support network)
- Discuss birth and any complications
- Check bowel and bladder function
- Check any suturing or LUSCS scar if necessary
- BP if follow up required
- Is rubella vaccination necessary?
- Discuss contraception options
- Discuss attending Maternal and Child Health clinic drop in services

6 weeks Post Partum

Check normal post pregnancy progress
- History from mother about PV bleeding, passing urine and bowel motions
- Examine abdomen, BP, breasts and perineum as indicated
- Assess uterine involution, perineal or caesarean section scar healing, pelvic floor tone, breasts, BP
- Is Pap test due?

Discuss
- Psychological wellbeing of mother - Emotional state and coping
- Resumption of intercourse +/- start contraception
- Family planning and child spacing options

Baby
- Sight Personal Health Record (“red book”) 1-4 week health check
- Examine infant and discuss maternal satisfaction with progress
- Discuss attending Maternal and Child Health Clinic
- Remind re 8 week immunisations

6.8 Child Health

All women birthing at Gold Coast University Hospital are eligible to participate in the Maternal Home Visiting Program (formerly Obstetric Early Discharge Program - OEDP), where a midwife will visit them at home after discharge. Those women who have engaged an Eligible Private Practicing Midwife, in either the public or private model, will receive postnatal care in this model. Subsequent visits are negotiated after the initial visit, and women who decline to participate are followed up by phone. Alternatively the women may receive postnatal care by either the Midwifery Group Practice midwife or a Community Midwife, all options for postnatal care are aligned.

Child Health will be advised of discharges from GCUH Maternity Unit and will endeavour to contact new mothers in the second week post-partum to offer a one-on-one visit with a child health nurse in
Mother are also invited to attend a “drop-in” service as required each week for the first eight weeks to discuss feeding, settling and issues surrounding adjusting to parenthood.

Many centres have qualified lactation consultants or can arrange for phone contact or an appointment with one if required. It is planned that a lactation consultant will be available at all clinics by the end of 2011.

The one-on-one visit allows for in-depth discussion of any concerns. Dads are invited to attend. The Edinburgh Postnatal Depression Scale (EPDS) is undertaken at this visit and “at risk” women may be referred back to their GP for referrals to services via ATAPS.

These services include individual assessment and group sessions in the “Beyond Baby Blues” program conducted in Southport, Robina and Banora Point.

Child Health Clinics are located at:

**Coomera:** 1st Floor, 1 Brygon Creek Drive, Coomera

**Helensvale:** Community Health Centre, 105 Lindfield Road

**Labrador:** 130 Frank Street (Cnr Imperial Parade)

**Mermaid Waters:** 23 Le Mans Drive

**Nerang:** 40 Martin Court, (Cnr White and Martin Sts)

**Palm Beach:** Community Health Centre, 9 Fifth Avenue

**Robina:** Campus Alpha, Ground Floor, 2 Investigator Drive

**Southport:** 43 Nerang St

All bookings and enquiries can be made through a central booking phone number 5519 2600

Although priority is given to women who delivered at Gold Coast University Hospital, these services are also available to women who live in the Gold Coast Region even if they delivered in private hospitals or outside the Gold Coast region.
6. PRE CONCEPTUAL and ROUTINE ANTENATAL SCREENING

7.1 Anaemia

The routine checking of haemoglobin (Hb) in early pregnancy forms a base line for management of the risk of iron deficiency anaemia. Effort should be made to optimise Hb levels before birth, to protect maternal health and to make blood transfusion less likely in the event of haemorrhage. Supplementation should be prescribed on the basis of laboratory evidence of <10g/L.

The woman’s Hb should be repeated at 28 weeks preferably at the same time as the glucose load i.e. 26–28 weeks.

FBC should be undertaken at 36 weeks if there was any sign of iron deficiency at 28 weeks or if there are other risk factors such as vegan, vegetarian, other low fe diets. Those women who are to have a caesarean section will have a preoperative FBC closer to the operation.

It is not generally useful to order iron studies in pregnancy unless there is a concern about the possibility of haemoglobinopathies. It must be remembered that there is a normal haemodilutionary effect in pregnancy and if the Hb parameters are in the normal range (115–160 g/l) then additional iron supplementation is not usually required in the absence of other risks such as previous postpartum haemorrhage, expected need for caesarean section or placenta praevia.

7.2 Auscultation of fetal heart rate

Women should be offered auscultation at each visit after 20 weeks, from the time midwives and doctors can detect a heartbeat. It is perceived that the auscultation is reassuring and enjoyable for the woman and therefore worthwhile.

7.3 Blood group and antibodies

All women should be offered routine testing for blood group, Rh(D) status and screening for atypical red cell alloantibodies in early pregnancy regardless of their Rh(D) status.

Antibodies should be repeated at 26–28 weeks (at the same time as the glucose tolerance test) if the woman is Rh negative. These should be repeated at 36 weeks.

Pregnant women who have clinically significant atypical red cell alloantibodies should be referred to Gold Coast University Hospital for specialist obstetric review and advice on subsequent antenatal management.

7.4 Blood Pressure

Blood pressure is routinely checked at all antenatal visits as pre-eclampsia is a major cause of maternal and perinatal morbidity and mortality. One of the first signs of this condition is an elevated blood pressure. Hypertension in pregnancy is defined as a systolic blood pressure of 140mmHg or more and/or a diastolic blood pressure (Korotkoff V) of 90mmHg or more, taken on two or more
consecutive occasions over several hours.

At the first antenatal visit, the woman’s blood pressure should be checked on both arms and from then on the right arm should be used if, as anticipated, there is little difference in blood pressure between arms.

The woman should sit down with feet supported and have the measurement taken after two to three minutes resting in this position. A standard size cuff should be used for women with an arm circumference 33cm and a large cuff used for arm circumference >33cms.

There has been some concern about automated blood pressure monitoring devices over-stating the blood pressure. If a high reading is obtained it may be advisable to check on a mercury sphygmomanometer is possible.

*If a clinical diagnosis of hypertension in pregnancy is made and is not urgent, refer to the antenatal clinic.*

*If urgent, refer to the obstetric registrar on call at the hospital. They can be contacted via the GCH Switchboard or Birth Suite number.*

7.5 **Fetal movements**

Regular enquiry about the number of fetal movements is an important aspect of ascertaining fetal wellbeing. Towards term the pattern of fetal movement may change from one of completely random movements to that of sleep and wake cycles. It is important to encourage the woman to be aware of the frequency of fetal movements during the day and if she is concerned to contact the hospital of booking. A CTG is very easily performed and reassuring for the woman.

*If the number of fetal movements is reduced (at any stage of the pregnancy) the woman should be referred to the hospital for assessment.*

7.6 **Gestational Diabetes Mellitus (GDM)**

Gestational Diabetes Mellitus (GDM) is defined as carbohydrate intolerance with onset or first recognition in pregnancy. Women who are diagnosed with gestational diabetes are considered at medium to high risk of pregnancy complications such as maternal hypertension, pre-eclampsia and obstetric intervention. Babies of mothers who have GDM are more at risk of macrosomia, hypoglycaemia and other metabolic disturbances. Data from the Australian Carbohydrate Intolerance Study in Pregnant Women (ACHOIS) trial has shown a benefit in diagnosing and treating non-insulin requiring GDM.

7.7 **Glucose Challenge Test (GCT) and Glucose Tolerance Test (GTT)**

A Glucose Challenge Test (50 gram glucose load) used to be offered routinely at 26–28 weeks to normal risk women. Venous plasma glucose is tested after one hour and if the result is 7.8mmol/L
or more, then a 75gm Glucose Tolerance Test (GTT) was then ordered. This recommendation dates back to 1960’s research and has been carried through in the 1991 and 1998 ADIPS recommendations. One of the criticisms of this approach is that up to 50% of women then have a significant delay between initial screen positive and ultimate diagnosis. The opportunity for altering outcomes then becomes lost.

Recent changes to the IADPSG recommendations have created some confusion. These new recommendations suggest now all women receive a 75gm Glucose Tolerance Test at 26-28 weeks regardless of risk. A fasting glucose is of >5.0 OR 1 hour >9.9 OR at 2hour >8.4 will be diagnostic for GDM. There is some debate about the impact of these recommendations. RANZCOG, ADIPS have now in principle agreed to adopt the IADPSG recommendations. RANZCOG has recently produced a consensus statement supporting this new guideline. Other organisations such as the Society Obstetric Medicine of Australia and New Zealand (SOMANZ) have questioned the cost benefit of this approach. The picture will remain confusing for some time as the Statewide guideline refers to the older ADIPS guidelines and some pathology labs will report previous values.

It is likely that this will have a significant impact on diagnosis of GDM. The number of additional diagnoses of GDM is uncertain but is likely to be within the range of 10-50%. Nationwide there is to likely to be a very site-specific variation. Further research will be needed to conduct cost benefit analysis for the population of women who birth at GCUH.

**IN SUMMARY:**

- it is likely that the new IADSPDG recommendations will become more widely adopted.
- GCUH recommends that all women have a 75gmOGTT at 26-28 weeks.
- High risk women should be offered a 75gm OGTT at around 16 weeks in addition.
- Referral to our endocrine obstetric team should be made if the criteria are met.
  - Fasting >5.0 OR 1 hr >9.9 OR 2 hr >8.4

These women should be referred to the Antenatal Clinic at Gold Coast University Hospital for ongoing management. Gold Coast University Hospital operates a weekly specialist endocrine pregnancy clinic for all women who require treatment in pregnancy.

Women who are in a high-risk category should be offered a Glucose Tolerance Test (75g load) at 16 weeks.

**High risk categories include:**

- Women over 35 years
- Family history of type 2 diabetes,
- History of gestational diabetes,
- Previous baby > 4kg,
- Unexplained stillbirth
- Asian or Pacific Islander ancestry
- BMI >30
- Medications including corticosteroids and some antipsychotics
- PCOS diagnosis or women requiring clomid induction for conception
If the GTT for high risk women is normal at 16-20 weeks then a GTT should be performed again at 26-28 weeks.

7.8 **Group B Streptococcus (GBS)**

*There is variation in expert consensus about whether risk based or universal screening should be used to identify women for intrapartum antibiotic prophylaxis.*

Queensland Health supports a risk based approach. RANZCOG is supportive of both approaches.

Gold Coast University Hospital supports either approach.

Women with the following risk factors will be treated with intrapartum antibiotics
- Preterm labour less than 37 weeks
- Rupture of membranes >18 hours prior to birth
- Maternal temperature > /= 38 degrees
- GBS colonisation in current pregnancy
- Previous baby with early onset GBS disease
- GBS bacteriuria in current pregnancy.

In the general practice setting, women with **GBS urinary tract infections in the current pregnancy should be offered appropriate treatment at the time of diagnosis and this should be documented in the Pregnancy Health Record to enable intrapartum antibiotic prophylaxis.** Antibiotic use to eliminate GBS vaginal carriage is ineffective and not indicated. *(Queensland Maternity and Neonatal Clinical Guidelines Program, Statewide Maternity and Neonatal Clinical Network, [www.health.qld.gov.au/qcg](http://www.health.qld.gov.au/qcg))*

7.9 **Hepatitis B Virus (HBV)**

All women should be offered a screening test for Hepatitis B virus at their first antenatal visit. Testing for Hepatitis B should be accompanied by test discussion, informed consent and post-test counselling. Pregnant women who carry the Hepatitis B virus can pass the virus to their baby, contributing to an increase in the morbidity and mortality of the child. The screening and detection of the Hepatitis B virus early in pregnancy can reduce the risk of perinatal infection, as this will prompt the birth attendant to provide immuno-prophylaxis at birth to the baby. If the woman is found to be a carrier then further investigations need to be performed.

7.10 **Hepatitis C Virus (HCV)**

Pregnant women of unknown Hepatitis C status should not be tested routinely for Hep C antibodies. Antenatal testing for Hep C should be undertaken only when the woman’s history reveals a relevant risk exposure or the woman requests it. Testing for Hep C should be voluntary and accompanied by test discussion, informed consent and post-test counselling.

**Relevant risk factors for Hep C:**
– History of injecting drugs
– History of tattooing or body piercing without adequate infection control
– History of incarceration in a custodial institution
– History of transfusion with blood or blood products before February 1990
– History of transfusion with blood or blood products overseas
– History of potential occupational or environmental exposure to blood or blood products eg a needle stick injury
– Abnormal LFTs or signs of liver disease

**If no risk factors are present in the woman’s history there is no basis for offering Hep C antibody testing:**

– The prevalence of Hep C among pregnant women is low, so the positive predictive value of screening would be low. It would be difficult to justify the cost of routine screening on the basis of the number of new positive cases that would be found
– A high number of indeterminate and false positive results would be found in low prevalence population, causing unnecessary anxiety. If a woman is known to be Hep C antibody positive she should be tested for the presence of circulating Hep C virus (Hep C RNA).
– Transmission from mother to child will not occur if the mother has spontaneously cleared the infection (25% of antibody positive people will clear the virus).
– All pregnant women who are known to be Hep C antibody positive should be offered qualitative nucleic acid testing (PCR testing) to determine if they are still infectious.
– The risk of vertical transmission of the Hep C virus is low, approximately 5–8% and only occurs if the woman is Hep C RNA positive. There is no therapeutic intervention that can be offered to reduce the risk of vertical transmission of the Hep C virus.
– There is no substantial evidence to suggest that caesarean section reduces the risk of transmission of Hep C and more research is needed. There is no evidence that breast-feeding increases the risk of perinatal transmission of Hep C.
Testing of infants born to mothers infected with Hep C:
– Infants born to Hep C positive mothers will retain maternal antibodies up to the age of 18 months. Testing before the age of 18 months is difficult to interpret. Consideration should be given to qualitative nucleic acid testing of infants born to mothers who are Hepatitis C seropositive. If parents request testing, a referral to a paediatrician with an interest in Hep C should be arranged
– The National Hepatitis C testing Policy can be found on the Australian Government Department of Health and Ageing website: 

7.11 **Herpes Simplex Virus: HSV**

Herpes Simplex Virus is a viral infection that many women will be aware of if they have been previously exposed. However, some women will have been previously exposed to the virus and not have developed any symptoms. The presence of ‘new lesions’ in pregnancy will need to be evaluated as to whether the infection is primary or a recurrence. IgG and IgM titres will need to be performed. Previous exposure will mean that there are sufficient antibodies to protect the fetus and neonate. Caesarean section is recommended only for women who acquire the virus for the first time in the second half of pregnancy. Women who have troublesome recurrence of lesions in pregnancy should be referred back to the clinic for specialist obstetric review and advice regarding the use of antivirals in the weeks leading to birth. Women should also be referred to the antenatal clinic for advice with regard to the safety of vaginal birth.

7.12 **Human Immunodeficiency Virus (HIV)**

*The National HIV Testing Policy recommends that HIV antibody testing should be offered to all women antenatally.* Antenatal HIV testing must only be performed with the informed consent of the woman. Health care workers should be familiar with appropriate assessment and pre and post-test discussion strategies. HIV test results should only be given in person, never over the phone. The primary rational for HIV antenatal testing is to prevent mother to child transmission. The prevalence of HIV in women in Australia is low. Health care workers who encounter an HIV positive woman, or who receive a positive HIV antibody test in general practice or an antenatal clinic setting are advised to seek advice from a colleague experienced in HIV medicine as soon as possible. An HIV positive woman should be referred for obstetric care at the GCH and requires a multidisciplinary approach involving expert advice from the team at Gold Coast Sexual Health Service and a paediatrician with an interest in HIV. There are many supports for HIV positive people in QLD and professional support for the treating team.

The National HIV Testing Policy can be found on the Australian Government Department of Health and Ageing website

7.13 **Influenza Vaccine**

It is recommended that the influenza vaccine be offered in advance to all women planning a pregnancy and to women who will be in the second or third trimester of pregnancy during the influenza season. Women should be informed about the safety of influenza vaccine in pregnancy.
The Australian Immunisation Handbook can be found on the Australian Government Department of Health and Ageing website.

7.14 Rh (D) negative women

Rh (D) immunoglobulin is offered at 28 and 34 weeks to all Rh negative women with no preformed anti-D antibodies at 28 weeks. Women will receive their 28 week administration of Rh (D) immunoglobulin after the result from the 26-28 week antibody titre has been checked for no preformed antibodies.

The woman will receive repeat administration of Rh (D) immunoglobulin at 34 weeks. There is no need to repeat titres as the test cannot distinguish between passive and acquired antibodies.

*GPs are encouraged to become providers of Anti D for their patients. This can be discussed with Red Cross Blood Bank.*

Any sensitising event in the first trimester will require administration of anti D of 250 IU (50ug) within 72 hours of the event to prevent sensitisation. If you are unsure whether administration of Rh(D) immunoglobulin is required please contact the Obstetric Registrar on call.

**Rh (D) immunoglobulin products should be used as indicated below:**

<table>
<thead>
<tr>
<th>Timing</th>
<th>Dose Rh(D) immunoglobulin</th>
</tr>
</thead>
<tbody>
<tr>
<td>First trimester sensitising* event (&lt;12 weeks)</td>
<td>250IU</td>
</tr>
<tr>
<td>First trimester sensitising events (multiple pregnancies &lt;12 weeks)</td>
<td>625IU</td>
</tr>
<tr>
<td>Second and third trimester sensitising events</td>
<td>625IU</td>
</tr>
<tr>
<td>All Rh (D) negative women without preformed Anti-D 28 and 34 weeks</td>
<td>625IU</td>
</tr>
<tr>
<td>Postnatal prophylaxis</td>
<td>625IU</td>
</tr>
</tbody>
</table>

* Sensitising events include ectopic pregnancy, miscarriage, termination of pregnancy and ultrasound guided procedures such as chorionic villus sampling, amniocentesis, cordocentesis and fetoscopy, as well as abdominal trauma considered sufficient to cause fetomaternal haemorrhage, external cephalic version, antepartum haemorrhage and normal delivery.
7.15 **Rubella titre**

Screening for rubella immunity should be undertaken in the pre-conceptual period to enable women who are non-immune to be vaccinated.

Rubella antibody screening early in pregnancy should be offered to identify women at risk of contracting the rubella infection. Vaccination should be offered postnatally for protection in future pregnancies for women with low titres.

7.16 **Syphilis**

All pregnant women are offered screening for syphilis using EIA test in the early antenatal period because treatment is beneficial to the mother and fetus. Screening should be accompanied by test discussion, informed consent and post-test counselling. Current recommendation is to request a syphilis EIA for increased sensitivity and specificity. The older tests of RPR and (TPHA) can have a higher rate of false positives. Women should be counselled that a positive result does not necessarily mean that a woman has syphilis, and they should have the test repeated.

*Pregnant women diagnosed with a syphilis infection should be referred to Gold Coast University Hospital for specialist obstetrics advice and management.*

7.17 **Urine testing**

Routine urine MC&S should be performed in early pregnancy. Microscopy will assist in the detection of chronic renal disease (CRD), as this will not be picked up by culture alone. Routine MC&S can also detect those women who carry Group B Strep. Routine urinalysis during pregnancy is a poor predictor of pre-eclampsia, in the absence of hypertension. **Routine urinalysis can be eliminated from antenatal care without adverse outcomes** for women, after an initial screening MC&S on a midstream specimen.

Asymptomatic bacteriuria is the persistent bacterial colonisation of the urinary tract in the absence of specific symptoms and is usually diagnosed as > 100,000 bacteria/ml on a single midstream specimen. If left untreated asymptomatic bacteriuria can lead to serious episodes of acute urinary tract infection later in pregnancy. Women with asymptomatic bacteriuria have a higher risk for low birth weight babies and preterm labour.

7.18 **Urinalysis for proteinuria**

**Use of dipstick measurement for routine screening of proteinuria in low risk pregnant women is not recommended.** The presence of proteinuria is central to a diagnosis of pre-eclampsia, urinary infection and renal disease. The gold standard for an assessment of proteinuria is laboratory biochemical measurement of total protein excretion over 24 hours. Although this is not a useful
method to employ as a universal screening tool, it is important to screen for protein where there has been a rise in blood pressure and/or there are any other signs or symptoms of pre-eclampsia.

7.19 **Symphyseal fundal height measurement**

There is no conclusive evidence to support symphyseal fundal height measurement over abdominal palpation. However, it is recommended to be used as an indirect measure of fetal growth at each visit. If the fetus appears either small or large for gestational age (3 cm more or less than expected measurement, no growth over 2 week period) then ultrasound is generally required to determine findings. If using the symphyseal fundal height measurement, measure from the highest point of the fundus (as this is the more variable end point) to the top of the symphysis pubis. The practice of measuring or palpating the uterine growth is thought to have value in reassuring mothers about fetal growth.

7.20 **Varicella Zoster Virus**

Screening for Varicella Zoster Virus (VZV) should be attended in the pre-conceptual period based on the negative history of previous varicella infection. Women who have had a reliable history of varicella infection should be considered immune. Women who do not have a reliable history of varicella exposure or are VZV seronegative, should be offered VZV vaccination when certain they are not pregnant. These women should be advised to avoid pregnancy for one month after vaccination.

VZV vaccine should not be given during pregnancy. A non-immune pregnant woman is not a contraindication to vaccination of another healthy child or adult in the same household, as the risk of transmission and infection of the fetus is extremely low (at present there have been no documented cases of transmission of vaccine strain virus to the fetus).

If a woman is concerned about exposure during her pregnancy and her immune status is not known then it is important to establish the degree of exposure. VZV IgG and IgM can be ordered and if concerned, the Zoster Immunoglobulin can be given. This must be done within 72 hours of the suspected contact. It is important to remember that congenital zoster infection is rare. The main problems with maternal disease in pregnancy are varicella pneumonitis and decreased respiratory reserve. There can also be a problem for the neonate if the mother has a clinical infection within 10 days of birth.

7.21 **Weighing**

There is no conclusive evidence to support routine weighing of women at every antenatal visit. It is not a clinically useful screening tool for the detection of growth restriction, macrosomia or pre-eclampsia. **It is good practice to measure weight and height and calculate BMI at the first visit to assist in risk assessment.** Women should be informed why an initial weight and height is suggested. They should also be informed that a weight gain of 8-14kg is within the normal range and that weight gains of >20 kilograms are associated with increased adverse birth outcomes, as is a pre-pregnant BMI of >30. Appropriate dietary advice and or referral to a dietician should be offered.
The following women do benefit from weighing at each visit:
- **Obese women.**
  A weight increase of 6kg is sufficient for a woman with a BMI>30
  Weight increase targets needs to be set and these women should be weighed at each visit to ensure they are not picking up excessive weight
- **Underweight women**
  Target of 12-16kg weight increase is advisable for this group of women.

### 7.22 Obesity and Pregnancy

Body Mass Index (BMI) is the most acceptable approximation of total body fat at the population level and can be used to estimate relative risk of disease in most people.

The standard measure for determining obesity is the classification adopted by the World Health Organisation, as show in the table:

<table>
<thead>
<tr>
<th>BMI</th>
<th>Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal range</td>
<td>18.5–24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25–29.9</td>
</tr>
<tr>
<td>Obese 1</td>
<td>30–34.9</td>
</tr>
<tr>
<td>Obese II</td>
<td>35–39.9</td>
</tr>
<tr>
<td>Obese III</td>
<td>&gt; or = to 40</td>
</tr>
</tbody>
</table>

*Note: Obese III formerly known as Morbidly Obese*

This is the best measure we have, however it does have several limitations as it does not take into account variations in lean vs. fat mass, variations in body fat distribution and the influences of age, gender and ethnicity. For the pregnant woman, it is also important that the calculation is based on pre pregnancy weight and not pregnant weight, which will overestimate BMI. Obesity is an increasing problem in Australia. Statistics from QLD suggest that **30% of our women are overweight at commencement of pregnancy, a further 25% are obese and 5% are in the morbidly obese range.** There is now no doubt that this trend is increasing. There is also now no doubt that this has major implications during pregnancy and the postnatal phase for both the woman and her baby and also the way in which it impacts on maternity services. The list below illustrates some of the issues faced for women who are overweight or obese.
<table>
<thead>
<tr>
<th>Mother</th>
<th>Child</th>
</tr>
</thead>
<tbody>
<tr>
<td>↑ infertility                                                          ↑ congenital abnormalities</td>
<td></td>
</tr>
<tr>
<td>↑ induction of labour                                                 ↑ stillbirth</td>
<td></td>
</tr>
<tr>
<td>↑ infection                                                           ↑ fetal distress,</td>
<td></td>
</tr>
<tr>
<td>↑ GDM                                                                 ↑ fetal trauma</td>
<td></td>
</tr>
<tr>
<td>↑ malpresentation and abnormal labour                                  ↑ NICU admission</td>
<td></td>
</tr>
<tr>
<td>↓ uterine contractions                                                ↑ BGL problems</td>
<td></td>
</tr>
<tr>
<td>↑ cumulative weight gain                                               ↑ life long “metabolic syndrome”</td>
<td></td>
</tr>
<tr>
<td>↑ hypertension</td>
<td></td>
</tr>
<tr>
<td>↑ emergency caesarean</td>
<td></td>
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<tr>
<td>↑ preeclampsia</td>
<td></td>
</tr>
<tr>
<td>↑ weight gain</td>
<td></td>
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<tr>
<td>minor complications such as back and pelvis problems</td>
<td></td>
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</tbody>
</table>

Whilst there are vast amounts of data available on the effects of being overweight and obese, there is very little known about successful interventions to assist these women during pregnancy. What is known is that pregnancy is a time when many women are motivated to make changes which they see as beneficial to their babies.

**Weight**

There is some data on the benefits of pre-pregnancy achievement of weight in the normal weight range and its effect on improving fertility rates. Over recent years there was, quite rightly, a move away from routine weighing of women during pregnancy. This was originally used to detect ‘fetal weight gain’ (very poor indicator) or for detection of preeclampsia (again a very poor test). It may be that for this group of women refocusing on restricting the amount of weight gained is important. This can only be in the context of an appropriate diet for pregnancy. With the provision of adequate dietary advice some women who are in the obese or morbidly obese range can improve their diets to be of better quality in terms of nutrition and reduced energy intake. There is no evidence that calorie restriction in the context of adequate nutrition has any harming effects on the mother, fetus or neonate. However, special attention must be made to ensure adequate levels of vitamins, minerals and trace elements. Referral to a dietician may well be beneficial for these women and their babies.

**Exercise**

Previous studies have shown that pre-pregnancy exercise levels in obese women are less than the general population. It has also been shown that there is a greater loss of exercise in this group for the duration of the pregnancy. In other words, these women exercise less before pregnancy and reduce their exercise level even more during pregnancy. Advising women to maintain exercise is important. Walking and swimming are the easiest forms of exercise to maintain during pregnancy, even in the later stages. This has many positive benefits for both physical and emotional health. Some exercise should be achieved even in the late stages of pregnancy. Obese women will also be subject to more of the general minor complaints of pregnancy related to the musculoskeletal system, especially back and pelvic problems. Early referral to a physiotherapist may be appropriate.
Fetal growth
Many risk factors for abnormal growth exist for women in the obese and morbidly obese range above those of normal weight women. These include both growth restriction and macrosomia. The clinical estimation of fetal growth is also hampered because of the limitations of maternal habitus.

_In women who are obese and morbidly obese, even without other indications it may be appropriate to perform an ultrasound for growth at around 34-36 weeks and manage accordingly._

Obviously if there are other indications such as GDM and or hypertension there may be indications to perform ultrasound scans prior to this.

Gestational diabetes
Whilst maternal age (>35 years) remains the most common risk factor for GDM, obesity is also a risk factor. Consideration should be given to performing a Glucose Tolerance Test (75g load) earlier in pregnancy (i.e. 16–20 weeks) if there are concerns about increased risk.

Anaesthetic review
Increased intrapartum complications would suggest that an antenatal (36 week) anaesthetic consultation would be of benefit as information obtained may be of help with place and timing of delivery.

Intrapartum care
There are a number of issues for managing women who have a high BMI. This includes adequate monitoring of fetal heart rate, adequate monitoring of uterine activity, both frequency and strength. There is an increased labour dystocia occurrence, which may be related to dysfunctional myocyte activity in the presence of obesity. Adequate use of syntocinon for augmentation may be required at higher levels than would be usual. Obese and morbidly obese women are more likely to require induction of labour, augmentation of labour and operative birth. Shoulder dystocia is also of higher risk due to maternal factors as well as baby macrosomia.
The third stage will need to be managed more actively due to an increased risk of postpartum haemorrhage. IV Syntocinon is preferable for the active management of the delivery of the placenta as the standard intramuscular dose of Syntocinon is not as effective. A wide bore cannula is therefore important during labour.

Postpartum care
Prolonged labour, operative delivery and obesity will increase the risk of DVT and consideration should be given to prophylactic treatment. Infection rates are higher for both caesarean section and vaginal births. There is an increase in breastfeeding difficulties and the rates of breastfeeding are reduced long term for these infants. This has implications for the mother in management of postpartum weight reduction and obvious implications for the infant. Every effort should be made to encourage and assist the woman to understand the importance of breastfeeding. Mention should be made of the need to reduce to pre-pregnancy weight and then to attempt to reduce weight to the normal BMI range before the next pregnancy attempt. Exercise must be a part of the lifestyle changes.
7.23  **Edinburgh Postnatal Depression Scale (EPDS)**

**During pregnancy**
Women are offered the opportunity to complete the EPDS during the Booking Visit at GCUH. Women complete the screening questionnaire and discuss results with their midwife. The information and resource booklet “Emotional Health In Pregnancy and Early Parenthood” is provided.

Women who are identified to be at high risk are referred for consideration of additional support at a weekly multidisciplinary “Safe Start” meeting.

This meeting is attended by the Perinatal Mental Health Clinical Nurse Coordinator, Maternity Social Worker, a midwife from Antenatal Clinic, Early Childhood Nurses, representatives from Drug and Alcohol services and the post-natal nurse visiting service.

Women requiring additional support are allocated to one of the members of the team who will follow up with the woman and ensure she has access to any additional service she needs.

Women with mental health needs may be referred for perinatal mental health services via ATAPS through General Practice Gold Coast or directly to the Perinatal Psychiatrist if the required.

Should GPs identify these high risk women early in pregnancy, prior to the first hospital visit, it is possible for GPs to make direct ATAPS referrals via General Practice Gold Coast. It is also critical that this information is conveyed to the Antenatal Clinic in the referral so an appropriate appointment can be scheduled.

Despite an initial “normal” test, EPDS can be completed again anytime if concern arises.

**After birth**

All women are offered EPDS screening by the Child Health Nurse at the Child Health Clinic.

**A copy of the EPDS is available at the back of these guidelines (Section 15).**

Responses are scored 0, 1, 2, and 3 according to increased severity of the symptom. The total score is calculated by adding together the scores of each of the 10 items.

Mothers who score >13 are likely to be suffering from a depressive illness of varying severity. The EPDS should not override clinical judgement. A careful clinical assessment should be carried out to confirm the diagnosis. The scale indicates how the mother has felt during the previous week and in doubtful cases, usually it may be repeated after two weeks. The scale will not detect mothers with anxiety neuroses, phobias or personality disorders.
7.24 Vitamin D testing.

Over the last decade or so there has been interest demonstrated in vitamin D testing. Vitamin D is essential for bone development in children and skeletal health in adults. Sources rich in Vitamin D particularly dairy products, eggs and fish account for approximately 10% of the dietary requirements. 90% of adult requirements is acquired through direct exposure of the skin to sunlight where the provitamin is activated by ultraviolet light which is then metabolized to the bioactive 25-hydroxyvitamin D (25-OHD).

Australian studies have suggested that around 5-15% of the low risk population may have levels that are considered low. High risk groups include those women with dark skin or covered (veiled) skin and studies suggest that up to 80% of women may have low levels. There is however, limited evidence to support screening of all women for Vitamin D deficiency. Limited data exists on cost-effectiveness.

Numerous national organisations recommend against screening (NZ, US and UK). However, there is a consensus that supplementation in pregnancy is recommend. There is no strong research into the effectiveness and safety of supplementation.

The National Evidence based antenatal guideline consensus statement on Vitamin D states “offer vitamin D screening to women with limited exposure to sunlight, or have dark skin or a pre-pregnancy BMI of >30”. Routine supplementation may have advantage for future maternal health.
7. MISCARRIAGE

Miscarriage is a general term applied to any pregnancy loss up until 20 weeks. The term is used to describe all pregnancies which fail and will include terms such as missed abortion, blighted ovum, inevitable miscarriage and incomplete miscarriage. It is important when talking to women and their partners about pregnancy loss that the terms used are sensitive. Using the term “abortion” while medically correct may not be appropriate in this setting. Miscarriage in all its forms occurs in about 1:3 pregnancies (more if the pre-pregnancy test failures are included). Miscarriage may or may not be detectable by symptoms. Also a woman may present with symptoms and not be having a miscarriage.

8.1 Quantitative βHCG
This test is useful in early pregnancy. In general, ultrasound will not be able to detect an intrauterine pregnancy until the βHCG level is above 1000 IU at least. βHCG levels are useful in determining which women will need an ectopic pregnancy excluded ie βHCG >1000 and empty uterus on ultrasound.

8.2 Ultrasound
Ultrasound is a valuable tool in determining viability in the presence of vaginal bleeding in a known pregnancy. Information for women and their partners can be found in the Information Sheets for Women (section 14). There may be other information that the couple require depending on their circumstances.

8.3 Management of Miscarriage
Conservative, surgical and medical options are available once a pregnancy is found to be non-viable. Individual circumstances may lead to a particular path but all options should be discussed.

8.3.1 Conservative management
There are good long-term data to suggest that conservative management of miscarriage is a viable option for most (80%) women with an incomplete miscarriage. The data is not as strong for blighted ovum or missed miscarriage. The criteria for conservative management should be:

- The woman wishes conservative management
- The incomplete miscarriage is <13 weeks and an ultrasound has shown less than 20mm of retained products
- The woman has ready access to medical services (including the hospital)
- The woman is haemodynamically stable
- There is no suggestion of infection
- She can return at no later than 2 weeks for follow up
If conservative management is followed then the woman should be advised that:
- The bleeding should be decreasing over the next 1-2 weeks and should have ceased by the end of the second week
- If the bleeding increases over this time then she should see a doctor for assessment of infection
- If the bleeding ceases then she does not require any further ultrasounds although repeating the βHCG to ensure that it has returned to <2 would exclude any concern re persistent trophoblastic disease
- If she is planning another pregnancy then she should continue folic acid, she may need iron supplementation and an opportunity for pre pregnancy screening should be provided. If the woman is Rhesus negative she will need a dose of Rh (D) Immunoglobulin given within 72 hours of the miscarriage. Even with conservative management she will not need a repeat dose.

The risks associated with conservative management are:
- Failed conservative management and the need for curettage (20%)
- Infection of the retained products. The rates quoted are less than those for surgical management
- Severe infection and risk of loss of fertility
- Bleeding and anaemia especially in the setting of infection
- Emotional upset at the length of time of resolution

8.3.2 Surgical Management
Surgical management involves a general anaesthetic and suction, blunt or sharp curettage to remove the contents of the uterus. It is the treatment of choice if a woman is haemodynamically unstable and an option in other clinical situations such as a failed conservative management or maternal choice. In general, the operation is a very safe, day procedure carried out under general anaesthetic.

The risks associated with a curettage are:
- General anaesthetic
- Uterine perforation
- Organ injury including bladder bowel or blood vessels
- Laparoscopy or laparotomy to correct the injury including bowel surgery
- Bleeding, excessive bleeding and blood transfusion
- Infection including late endometritis
- Incomplete evacuation and risk of passage of identifiable products of conception, and/or infection and repeat curettage
- Risk to fertility including infective risk and endometrial scarring (Asherman’s)
- Risk of injury to the cervix and impact on future pregnancies

8.3.3 Medical management
The option of medical management of miscarriage is now available to selected women. The use of Misoprostol® has been well studied with good evidence that, for selected women, it is a very reasonable, safe form of assisting with miscarriage management. This should be managed within
the care of the obstetric unit at the Gold Coast University Hospital. A prerequisite must be
that the woman chooses this form of management, she must have the ability to attend for
medical follow up and that she must be able to access care in a timely manner should that be
necessary. Further information about first trimester pregnancy complications and management can
be found at RCOG green top guidelines [www.rcog.org.uk/guidelines](http://www.rcog.org.uk/guidelines).

Women’s Hospitals Australasia has reviewed these guidelines in the context of the Australian
environment and these can be found at: [http://www.wcha.asn.au/index.cfm/spid/1_47.cfm](http://www.wcha.asn.au/index.cfm/spid/1_47.cfm).

8.4 **Follow up**

All women should be seen at 2 weeks whether they are being managed conservatively or surgically.
At this visit it is important to ensure that the woman and her partner are recovering emotionally as
well as physically. This is an ideal opportunity to discuss antenatal screening and identify any
modifiable risk factors such as smoking. This visit may need to include a discussion on contraceptive
options if the pregnancy was unplanned.

8.5 **When and where to refer for recurrent miscarriage**

The timing on when to refer for recurrent miscarriage will to some extent depend on the age of the
woman but in general the usual referral time is after 3 miscarriages. The chance of a subsequent
ongoing normal pregnancy after:
- One miscarriage is 70%
- Two miscarriages is 65%
- Three miscarriages is 60%

Simple investigations that may be performed are:
- Karyotype of the mother and her partner

Thrombophilia screen including:
- Anticardiolipin antibodies
- Lupus anticoagulant
- Protein C and Protein S
- Factor V Leiden and prothrombin gene mutation
- Thyroid function tests
- Fasting glucose

Women who wish to pursue a pregnancy after recurrent miscarriage should be referred to Fertility
Specialists in the private sector. Timely access to the full range of services required are not currently
available at GCUH.
8.6 First trimester pregnancy problems
8. BREECH PRESENTATION CLINICAL PATHWAY

If a woman has been found to have a baby with a breech presentation at 36 weeks she will be commenced on a breech clinical pathway.
9. CAESAREAN SECTION

The rate of caesarean section continues to rise and this is multifactorial in nature. However, there is general agreement that the rate of caesarean section should be monitored and attempts should be made to reduce the rate as much as possible. The following information is a summary of the current NICE guidelines, last published on the website in April 2004. The full guideline is recommended reading for all health practitioners involved in maternity care and guidance. It can be found at www.nice.org.uk.

The American College of Obstetricians and Gynaecologist has also recently published a guideline around reducing the caesarean section rate. Gold Coast Hospital conducts its care optimizing the opportunities to reduce the caesarean section rate.

It must be remembered that all guidelines are based on populations in general and there may be specific clinical situations that apply to a woman that do not meet with the guideline recommendations. All women need to be informed with these guidelines in mind but put into context of a woman’s particular situation. Information for women preparing for caesarean section can be found on the NICE site, http://www.nice.org.uk/nicemedia/pdf/CG013publicinfoenglish.pdf.

Gold Coast University Hospital respects the decisions made by some women to choose maternal choice caesarean section. Gold Coast University hospital is unable to provide this service and these women requesting a caesarean for no medical indication should be referred to the private sector. Gold Coast University Hospital believes that the majority of these requests are related to fear of childbirth and we are able to provide models of care that can guide a woman through this fear. Current research by Griffith University is being conducted into this specific area. If a woman is identified in the early antenatal phase as having significant fear, they should be referred early to our service so support can be commenced.

Reducing the caesarean section rates in the antenatal course:
- Offer external cephalic version if breech at 36 weeks
- Facilitate continuous support during labour
- Offer induction of labour beyond 41 weeks
- Support women who choose vaginal birth after caesarean section (VBAC)
- Referral in early pregnancy (20 weeks) for assessment of risks
- Provide woman specific information and commence the VBAC clinical pathway
- Increasing continuity of carer models of care.
- Providing supportive models of care for women who describe fear around childbirth

Planned caesarean section for women will be offered in the following circumstances:
- Grade 3–4 placenta praevia
- Previous classical caesarean section or major uterine surgery that interferes with the myometrium in the upper part of the uterus
- A twin pregnancy where the presenting twin is non-cephalic
- Maternal HIV infection with detectable viral loads
- Primary genital herpes in the third trimester
- Severe growth restriction with abnormal Doppler assessment
- Certain maternal medical conditions
Other clinically indicated reasons for an elective caesarean section include:
- Breech presentation where external cephalic version is contraindicated or has failed
- Previous caesarean section where a trial of labour is contraindicated

Decision for elective caesarean section
Timing of an elective caesarean section should be after 39 weeks to decrease the risk of respiratory morbidity in the newborn. Recovery after a caesarean can take up to six weeks. The woman should be advised that as with all major abdominal surgery it is recommended that she should not drive during this time and avoid activities likely to cause abdominal strain. At the six week postnatal check the woman should have her wound assessed for any healing complications such as hernia formation and nerve entrapment.

Pregnancy and childbirth following a caesarean section
In general most women who have had one previous caesarean section regardless of the reason are eligible to attempt a vaginal birth after caesarean (VBAC). The success rate for women who labour is around 80%. This is regardless of the reason for the primary caesarean section.

Factors which may predict success:
- Non repeatable reason for primary caesarean: for example breech presentation, placenta praevia
- Previous labour. A common reason for a primary caesarean is a persistent occipitoposterior presentation which is unlikely to recur in a subsequent labour and these women who have laboured will have a higher success rate
- Previous successful vaginal birth. Women who have had a successful vaginal birth are very likely to deliver vaginally following an intervening caesarean section.

The decision about a VBAC will need to be made with the woman with consideration given to maternal preference. A general discussion should include and emphasise the general overall risks and benefits of caesarean, risk of uterine rupture and risk of perinatal mortality and morbidity.

Women who want a VBAC should be supported
Summary of risks and benefits:
Benefits are those listed below and are generally those of avoidance of caesarean section.

Risks specifically for VBAC:
- Uterine rupture is a very rare complication but is increased with VBAC. About 1:10,000 repeat caesarean section and 1:300 VBAC
- Intrapartum fetal death is rare (10:10,000) the same risk as for women in their first pregnancy but increased compared with elective planned caesarean section (1:10,000)

During a VBAC women should be supported and offered:
- Continuous electronic fetal monitoring during labour
- Immediate access to caesarean section and on site blood transfusion
- Information about the increased risk of uterine rupture (80:10,000) if using Syntocinon for induction of labour and that the use of prostaglandins for induction is not recommended
because of the 240:10,000 risk of uterine rupture

**Summary of effects of caesarean section compared with vaginal birth for women and their babies:**

*Increased with caesarean section:*
- Abdominal pain and need for narcotic analgesia
- Bladder injury
- Ureteric injury
- Need for further surgery including for adhesions, hernia formation
- Hysterectomy
- Thromboembolic disease
- Length of hospital stay
- Readmission to hospital
10. POST PARTUM CARE

Most women in QLD will give birth within the hospital system and the immediate postpartum care will occur within that system or with the support of midwives in the postnatal period. However, with increasing reductions of length of stay some GPs will be presented with postpartum care issues when they have not been involved in the births. These will occur in the first postpartum week or later and may be an acute problem at a time when a woman is emotionally vulnerable and physically fragile. Physical and emotional recovery after birth can take considerable time and it is important not to confuse the normal signs and symptoms of the postnatal time with problems. However, there are significant physiological and emotional changes that do occur and it is important not to miss the ones that are of a dysfunctional or pathological nature. It must be remembered that time is a great healer with the normal changes but early intervention can be vital in other situations. Studies have shown that readmission rates following birth are around 4% but this will depend on the nature of the birth with rates being higher for caesarean section. The main problems are vaginal bleeding, perineal wound breakdown and caesarean section wound breakdown.

11.1 Vaginal bleeding

All women experience bleeding after childbirth and the amount of variation in this can be quite considerable. Secondary postpartum bleeding is usually defined as excessive or prolonged bleeding more than 24 hours after birth. It is relatively difficult to quantify the amount of bleeding, however, in general the overall amount should be decreasing over the postnatal period and be completed by the 6 week check up. Small episodes of clotting in the first week are not unusual especially around times of breastfeeding and after being supine. However, increasing amounts of bleeding, change in the nature or increasing size and frequency of passage of clots may not be normal.

By the end of the first week most women experience a reduction in the amount of their bleeding to a red or pink discharge. An increase in bleeding may signify either endometritis or retained placental tissue, or both. Risk factors include caesarean section, prolonged labour, manual removal of placenta or a primary postpartum haemorrhage. Presentation of endometritis may include pain and fever or a ‘flu-like’ illness with a tender uterus. Retained placental tissue will usually present with symptoms and associated inflammation and infection.

Differentiation between the causes of abnormal bleeding can be difficult as a pelvic ultrasound can be confusing. For example, many women without abnormal bleeding will have an echogenic appearance of the uterine cavity for 1-2 weeks post-partum. Pelvic ultrasound can be useful to detect larger pieces of retained placenta such as a cotyledon.

The first line investigation for all women who are suspected to have a secondary postpartum infection is a low vaginal swab. Group A streptococcus infection is uncommon but remains a life threatening condition. The first line of treatment for secondary postpartum haemorrhage should be antibiotics such as amoxycillin with clavulanic acid 500mg tds and metronidazole 200mgs tds for at least a week with careful monitoring.

If the symptoms of pain, fever and/or bleeding do not settle, then the woman should be referred back to the hospital for review and possible commencement of intravenous antibiotics. Post partum
curettage should be reserved for women with a clear diagnosis of retained tissue. This procedure carries a significant risk of complications including scarring of the uterus with subsequent abnormal placentation, and Asherman’s Syndrome with prolonged amenorrhoea and infertility.

11.2 Perineal wound breakdown

Perineal trauma, either by tearing or episiotomy, occurs in about half of all women having a vaginal birth. Many first-degree tears do not require suturing, but all second and third degree and episiotomies are sutured. A small proportion (<1%) will breakdown and need specialist referral. A further small proportion will have problems such as granulation tissue persistence, slight degrees of misalignment, or persistent perineal pain. The majority of these will heal with time however careful enquiry and referral may be necessary if they persist. It is well known that many women will not present with these problems as they are misleadingly under the impression that it is a normal consequence of childbirth.

The area of severe perineal trauma, such as third and fourth degree tears, is increasingly recognized as an area that early intervention can improve outcomes. Any woman who incurs a 3rd or 4th degree tear during childbirth at the Gold Coast University Hospital will be followed-up at 2 weeks, 6 weeks and 6 months. The initial appointments will be arranged prior to discharge, with further appointments available if required. These clinics will be well supported by physiotherapists to provide pelvic floor rehabilitation. In any subsequent pregnancies, the woman will be offered antenatal clinic appointments at 20 and 36 weeks to discuss birth options.

11.3 Caesarean section wound infection

With the gradual rise in caesarean section, GPs are likely to see an increase in the incidence of abdominal wound infections. More than 30% of women now give birth by caesarean in Australia, the rate being 20% at GCUH, and about half of these are done after a period of labour. The incidence of postpartum wound infection is estimated to be as high as 10-15%, most of which present in the second week after operation. Risk factors include: maternal factors such as obesity, emergency caesarean after labour, and failure to give prophylactic antibiotics. Presentation is usually because of pain, redness, swelling or discharge from the wound.

Treatment of a wound infection is by broad spectrum antibiotics such as flucloxacillin 250-500mgs qid (or erythromycin 250mg qid if allergic to penicillin). It should be reminded that activity should be kept to a minimum and that driving a vehicle is not permitted for 6 weeks after a caesarean. Emphasis of this should minimize the possibility of complete wound breakdown and problems with healing of the fascial layer.

However, if there are signs of severe infection, sepsis, wound breakdown and/or extension of the infection into adjacent tissues, the woman should be referred back to the GCUH for further treatment.

It should be remembered that not all wound discharges are infective in nature and in the absence of obvious signs of infection, conservative management may be appropriate.
11.4 Mastitis

In Queensland, rates of breastfeeding on discharge are high at more than 95%. Average duration of breastfeeding is around 4-6 months. Mastitis is a common problem with approximately 40% of women having at least one episode. A number of women will manage this by themselves at home with advice from the Australian Breastfeeding Association help lines but a number will also present to the GP if ongoing or a first time case. The breast is usually tender and red, often with a discrete quadrant of the breast affected and there may be associated nipple trauma but not always. Aetiology is thought to be primarily blocked ducts but secondary infection can follow.

Treatment consists of advice to continue feeding or at least to continue to express in an attempt to empty that breast on a regular basis. Symptomatic relief with warm showers, warm packs and simple paracetamol analgesia may assist. For women who are febrile, or if the problem persists longer than 24-48 hours, an antibiotic should be prescribed in addition (either flucloxacillin 250-500mg qid or erythromycin 250mg qid).

Breast abscess formation is a rare complication of untreated mastitis and requires urgent referral for surgical drainage. Breast abscesses are more common in obese women and smokers. The clinical features of a breast abscess are similar to that of mastitis, but with a fluctuant, tender, palpable breast mass associated with fever and malaise. Although this is a clinical diagnosis, an ultrasound may be helpful.

Women with recurrent mastitis may benefit from lactation consultation as incorrect technique or problematic attachment may be contributing. If the woman is discharged from hospital and requires support for breastfeeding, she can attend one of the Community Child Health Clinics for advice and support form a Child Health Nurse. Many sites will also have a Lactation Consultant available, or the woman can be referred to the relevant clinic to access this service.

11.5 Pelvic Floor Dysfunction

One of the most common and easily identified effects of pregnancy and childbirth are alterations to the pelvic floor. In an effort to avoid some of the negative consequences, more is being done to emphasise the importance of pelvic floor health. There is evidence from randomized trials that Pelvic Floor Exercises (PFEs) should be commenced in the antenatal phase rather than leaving them until after the baby is born. Although vaginal birth is more likely to cause an increase in pelvic floor weakness, it is important to emphasise the necessity for all women to perform daily pelvic floor exercises.

Vaginal birth is more likely to present a problem with urinary stress incontinence whilst caesarean birth is more likely to present a problem with urgency and urge incontinence. Caesarean birth may afford some protection for urinary stress incontinence if there has been no labour but the effects of hormones including those of pregnancy and breastfeeding, and genetic collagen makeup on pelvic floor integrity cannot be overlooked in the long term.

PFEs are an important aspect of pelvic floor recovery. The exact number of repetitions required to optimise pelvic floor function has not been established with certainty. However, in general about 30/day appear to be beneficial.
If a woman has had her baby at the Gold Coast University Hospital within the last 6 weeks, she is eligible for physiotherapy review at the hospital at no cost to her. These appointments can be made by faxing a referral letter to the Women’s Health Physiotherapist at the GCUH physiotherapy department. Please note that if referring later than 6 weeks post-partum, a referral to the gynaecology department would be more appropriate as there may be medical issues that need addressing. Additionally, if the woman has not had her baby at the GCUH, an additional fee will apply and a referral to a private physiotherapist may be more appropriate.

At the 6 week postnatal visit it is worthwhile observing the method of pelvic floor contraction as at least 20% of women will be using the wrong muscles (e.g. Gluteus) or actually pushing on their pelvic floor rather than contracting. Education on how to perform the PFEs or referral for physiotherapy review is therefore essential. It is also important to remind the woman that improvement in function and maintenance of pelvic floor tone is a lifelong exercise.

11.6 Urinary Dysfunction

Urinary dysfunction in the initial postnatal period may be related to both urge and stress. The urgency may be related to the ‘learned behaviour’ in pregnancy, relative hypo-oestrogenisation of breastfeeding or caesarean section. This will usually resolve with time however, a few women will develop ongoing problems and need referral to the physiotherapists for bladder retraining exercises. Genuine stress incontinence is also relatively common in the initial postnatal period. Women at greatest risk are those with previous bladder dysfunction or stress incontinence prior to pregnancy, those with epidural anaesthesia during labour, instrumental delivery or a prolonged second stage of labour. Increasingly it is recognized that a significant component of women’s susceptibility to pelvic floor dysfunction is related to their collagen makeup, so it is a potential problem for all women.

Those women who have stress incontinence at 3 months should be referred to a physiotherapist for further evaluation. These women have been found to be at particular risk of ongoing problems. It is important to emphasise to women concerned about this problem that in general it does improve with time. Instruction in PFEs and referral for physiotherapy may improve outcomes. Surgical correction should only be considered for severe cases and if conservative measures have failed. Any surgical consideration should be delayed until after breastfeeding.

Women may be at risk of UTIs if they have had catheterization during labour, during birth by caesarean or during the postnatal period.

11.7 Rectal dysfunction

In the immediate postnatal period, faecal urgency, faecal incontinence and constipation are all relatively normal after both caesarean and vaginal birth. Haemorrhoids may account for symptoms of urgency or incontinence and can also be responsible for, or a cause of, constipation. Simple treatment with a topical haemorrhoid cream containing a corticosteroid can contribute to symptomatic relief and aid resolution. Suppositories can be used for persistent external and
internal haemorrhoids after the initial discomfort resolves. Referral for surgical management should be reserved for those women with intractable haemorrhoids or severe thrombosis.

Constipation is a common complaint in both the short and medium term postnatally. This is multifactorial and may be exacerbated by a painful perineum after vaginal birth or by the use of opioid analgesia after caesarean section. Hormones may also play a role. It is not unusual for a woman to take about 3 days to normally open her bowels after birth. This may be a physiological delay following the pre-labour bowel emptying and the labour-associated decrease in bowel motility. Return to pre-pregnancy bowel habits may take several months to achieve. Women who breastfeed have an additional cause of constipation related to their relative dehydration. A simple analysis of hydration would include not only input but also an assessment of output, which should be around 1.5 litres/ day output in urine. It is important that straining at stool is avoided for pelvic floor protection. Using a stool bulking agent such as psyllium husk or the commercially available preparations of this may be useful for those with postnatal problems or as an adjunct for those with known pre-pregnancy problems.

Women who have had a 3rd or 4th degree tear and/ or are experiencing faecal/flatus incontinence should be followed-up at a dedicated OASIS clinic at Robina. (Obstetric Anal Sphincter Injuries). This is usually arranged prior to discharge. If a woman is experiencing such symptoms and does not have a follow-up appointment, please refer to the gynaecology outpatient department.

11.8 Postnatal emotional health

A woman’s emotional wellbeing in the postnatal period is likely to be influenced by many factors including her birth experience, her family support, her physical symptoms and her pre-pregnancy emotional health. It is important to recognize that tiredness and extreme fatigue are common in new mothers and these symptoms do not always mean depression. If the tiredness is the result of frequent waking by the baby for feeding or being unsettled, then this may well be the primary problem. However, tiredness out of proportion may be the presenting symptom for depression and other clues should be looked for. It is important to encourage women to seek support for their emotional well being following birth and where necessary a referral can be made for sustained support in the community.

High risk women identified in the antenatal clinic will be referred for additional support during pregnancy and flagged for follow up after delivery. Mental health issues emerging after delivery may be identified by the Child Health Service or the patient’s GP. Referral can be made through General Practice Gold Coast to access ATAPS funded services, “Beyond Baby Blues”.

11.8.1 The postpartum blues

This is a common phenomenon that appears in the first week and affects about 70-80% of women. It is characterised by a feeling of dysphoria and weeping. It is not severe and is self-limiting, although there is some evidence that women who experience severe blues are more likely to develop true
depression. All that is usually required is reassurance, and explanation of the condition and advice to return for review if it does not pass within the week.

11.8.2 Postnatal depression

This is a common disorder affecting 10–15% of women at some time in the postnatal period. It usually begins at 4–6 weeks after the birth but can present at anytime in the first 6 months. The severity can range from mild to very severe. Many women remain undiagnosed and it is often a self-limiting condition. However, there is evidence that if left untreated if can have consequences for mother, baby and other family members for many years after, including affecting school performance and behaviour in adolescence. For these reasons it is thought to be beneficial to screen for postnatal depression using a standardised instrument such as the Edinburgh Postnatal Depression Score as found at the back of these guidelines.

Once identified treatment will depend on severity. For many women simple recognition of the problem and alterations of lifestyle for the woman and her family may be all that is required to allow resolution with time. More severe cases require intervention with either intensive counselling or antidepressant medication. Trials comparing cognitive behavioural therapy over antidepressant medication do not show any specific advantage of either. There is recent data suggesting that exercise is of benefit in mild to moderate disease. There is a long experience with the tricyclic antidepressants in postnatal depression, but more recently the SSRIs, such as sertraline have been used with success. For those women who do not seem to respond with such intervention then specialist referral will be required.

11.8.3 Puerperal psychosis

This is a rare condition affecting 1:500 women. It is evident as a psychotic illness within the first month after the birth and will almost always require inpatient care in a psychiatric unit. It is usually found in women who have had a previous psychiatric history, particularly of psychosis. It has a high recurrence risk in subsequent pregnancies. There is evidence that this condition is provoked by oestrogen withdrawal and may be treated prophylactically by postnatal oestrogen. It requires specialist referral.

11.8.4 Post-traumatic stress disorder

It is now recognised that some women experience a condition best described as posttraumatic stress disorder as a result of childbirth. This may often follow a serious adverse outcome such as major post-partum haemorrhage, but can also occur after relatively uncomplicated births. It is different from postnatal depression in that it may not appear to have a rational basis, with women experiencing flashbacks to the birth. It is characterised by high anxiety and sleeplessness and will often lead to prolonged depression if left untreated. This disorder requires specialist counselling and may take many months to treat. Some women will only present with symptoms during their next pregnancy.
11.8.5 **Perinatal loss**

Although the perinatal mortality in Australia and Queensland is among the lowest in the world, it is still the case that approximately 8 in every 1000 births in Australia will result in perinatal death, most of which are stillbirths. The emotional problems women and their families experience after perinatal death are obviously quite different than those for most women in the postnatal period. It is important to ensure that these women receive specialised care. Woman who have experienced a perinatal loss at the Gold Coast University Hospital are followed-up in the Maternal Fetal Medicine Unit 6 weeks after discharge from the hospital. Other contact from social work and Perinatal Loss Co-ordinator will also occur. There are also numerous support groups available in QLD, which can be very important avenues to explore to aid recovery:

- SIDS and Kids - QLD: (07) 3849 7122
- Stillbirth and Neonatal Death Support Group (SANDS) QLD: (07) 3254 3422
- Teddy Love Club : 1800 824 240

11.9 **Sexual Dysfunction**

The time for resuming sexual activity after giving birth is very variable and may well be a reflection of the pre-pregnancy sexual activity. There are significant cultural and ethnic differences, which also need to be considered. The multi-factorial nature of sexuality comes into play but there are also many additional factors that may interfere with normal or satisfactory sexual function. In the immediate postnatal phase, most women will not wish to have penetrative sexual activity until the bleeding stops. Many women will wait until the ‘6 week check.’ In the early months women can experience decreased libido for many reasons, including distraction because of the demands of the baby, tiredness and lack of sleep, breastfeeding and the relative hypo-oestrogenisation associated with breastfeeding.

There are many issues of body image that need to be resolved, which may result from the changes of vaginal laxity or scarring with vaginal birth, as well as concerns about a slow return to the pre-pregnancy body shape. Equally caesarean section may result in abdominal pain from the healing wound. Emotional issues associated with relationship difficulties may also interfere with sexual activity. It is significant that dyspareunia and problems with sex still occur in about 10% of women at 6 months postpartum. The cause of dyspareunia may be as simple as decreased vaginal lubrication and can be overcome with artificial lubricants. Superficial dyspareunia related to perineal pain can be significant for some women and needs to be asked about directly. Although a degree of perineal discomfort is to be expected immediately after vaginal birth there should be a gradual lessening with time and pain should not persist beyond 6 months. Pain will be greater in the presence of tearing and is greatest with episiotomies. It is important that women feel that their concerns about dyspareunia are heard and that referral for review by a specialist is offered. Simple perineal massage which the woman can do herself may be all that is required but surgical repair may be necessary. There are sometimes simple and easily correctable reasons for superficial dyspareunia after childbirth, such as labial adhesions, breakdown of labial tears or excessive scar reaction which may be easily amenable to reparative surgery. It is also important to explore the possibility of male sexual dysfunction resulting from the male partner’s adjustment to pregnancy, childbirth and new parenting.
11.10 **Contraception**

Addressing the issue of contraception for a couple with a newborn is usually met with the answer of “abstinence”. In most cases this is not a permanent solution. It is important that this is explored in terms of a couple’s social, cultural and religious background. It is important to explore the previous use of contraception and any associated difficulties or side effects. A woman’s choice of method will be influenced by her previous usage. Prior preferences based on the experience of friends and family may also play a part. It may be important to elucidate whether the last pregnancy was the result of contraceptive failure when advising on future contraception.

Postpartum contraceptive choice is divided into two broad groups- women who are breastfeeding and those who have chosen to artificially feed. For women who are breastfeeding the issue of contraception is not significant for at least 12-16 weeks, provided she is exclusively breastfeeding, has not resumed menstruation and the baby is continuing to have a night feed. It is important to explain the rate of failure of lactational amenorrhoea in such cases is about 1-2%. The acceptability of this failure rate will depend on how the couple would feel about failure should it occur. If breastfeeding, the addition of condoms will provide further protection but will most likely require the use of lubricant in the earlier postnatal phase. If diaphragms have been the previous form of barrier contraception, they will need to be refitted at about 12 weeks, when most of the anatomical changes of pregnancy have resolved.

Progesterone based hormonal contraception is safe while breastfeeding. The choice of oral progesterone (‘the minipill’), or implants such as Implanon (subcutaneous) and Mirena (intrauterine) are available for use. Progesterone is safe to use in breastfeeding. For those women who choose not to breastfeed, fertility may return in as little as four weeks. The contraceptive methods available are not changed from the usual choices, with the reminder that diaphragms will need to be refitted.

Women wanting permanent contraception techniques such as tubal ligation or Essure tubal occlusion will need to be referred to a gynaecologist. It should be remembered that the most common risk factors for regret after permanent contraception are age < 30, having other children under 5, and being in a non-stable relationship. This decision is obviously an individual one.

Women who have had a caesarean section should be advised to delay conception until at least 9-12 months post operatively. This will reduce the complications surrounding placental implantation and provides the best opportunity for vaginal birth after caesarean.
11. USEFUL WEBSITES

Australian Breastfeeding Association  www.breastfeeding.asn.au
Australian College of Midwives  www.acmi.org.au
Centrelink  www.centrelink.gov.au
Family Planning Queensland  www.fpq.com.au
Nine months  www.ninemonths.com.au
Pregnancy, Birth and Beyond  www.pregnancy.com.au
QLD Health  www.health.qld.gov.au

Royal Australian and New Zealand College of Obstetricians and Gynaecologists  www.ranzcog.edu.au

The Australian Immunisation handbook  www.immunise.health.gov.au

The Royal Women’s Hospital  www.rwh.org.au

UK National Institute for Health and Clinical Excellence (NICE)  www.nice.org.uk

Beyond Blue  www.beyondblue.org.au

National Evidence Antenatal Care Guidelines  www.health.gov.au
12. REFERENCES

These guidelines have been written with reference to the following sources:

Australian and New Zealand Food Authority, Listeria and pregnancy Listeria Brochure


These documents are available on the ANCAHRD website: www.ancahrd.org.au


RANZCOG Statements – 2007 C-Obs 4 Prenatal screening tests for trisomy 21 (Down syndrome), trisomy 18 (Edwards syndrome) and neural tube defects:  

13. INFORMATION SHEETS FOR WOMEN

This information is also available on the GPGC website www.gpgc.com.au

Fact Sheet: Preconception Information
Fact Sheet: Good Nutrition in Pregnancy
Fact Sheet: Weight and Pregnancy
Fact Sheet: Breastfeeding
Fact Sheet: Smoking in Pregnancy
Fact Sheet: Miscarriage
Fact Sheet: Vaginal Birth After Caesarean
Fact Sheet: Induction of Labour
Fact Sheet: Nuchal Translucency Scan
Fact Sheet: Amniocentesis
Fact Sheet: Chorionic Villus Sampling
Fact Sheet: Anti-D in Pregnancy
Fact Sheet: Group B Streptococcus
Fact Sheet: What to Bring to Hospital
Fact Sheet: Contraception Following the Birth of Your Baby
Fact Sheet: Preconception Information

Most women know they need to care for their health during pregnancy - but did you know you can protect the health of your baby before you conceive? For example, eating the right food before, as well as during pregnancy, can help prevent some birth defects. So can making sure you’re immune to rubella (German measles), a common disease that can cause serious problems to unborn babies. If you use tobacco, alcohol or other non-prescription drugs, give them up when you’re planning to conceive rather than wait until you’re certain you’re pregnant. By that time the baby may be six weeks old or more; time enough to have been exposed to these drugs.

1. Smoking, drug and alcohol and other drugs advice
When a pregnant woman smokes, carbon monoxide passes into the baby’s bloodstream – just as if the baby were smoking too. This means the baby gets less oxygen and may not grow as well as it should. Smoking in pregnancy increases the risk of many problems including miscarriage, a preterm baby, or a baby with low birth weight. Babies of mothers who smoke also have a higher risk of developing respiratory problems, asthma and Sudden Infant Death Syndrome. Smoking marijuana can have effects on the baby similar to tobacco.

Alcohol also passes into the baby’s bloodstream. Regular drinking or occasional heavy drinking during pregnancy can cause slow physical growth and mental retardation. Other drugs that may cause problems in pregnancy include heroin, cocaine, LSD and amphetamines.

For more information, or for help to quit legal or illegal drugs, your GP, midwife or obstetrician can put you in touch with your nearest Alcohol and Drug Service.

Coffee, tea, chocolate, cola (and some other soft drinks) all contain caffeine. There is evidence that a high intake of caffeine increases the risk of miscarriage and preterm birth. It is a good idea for pregnant women to limit themselves to 200mg of caffeine daily. This equals:
- 2 cups ground coffee
- 2 1/2 cups instant coffee
- 4 cups medium-strength tea
- 4 cups cocoa or hot chocolate
- 6 cups cola

2. Medication advice
Some medications are harmful to the unborn baby. If you take prescribed medication, discuss your plans before pregnancy with your doctor.

3. Diet and exercise in pregnancy
Are you eating plenty of leafy green vegetables, oranges, orange juice (especially freshly squeezed juice), wholegrain breads, rice, pasta or other cereals, and cooked dried peas, beans or lentils? Bananas and nuts are also good. These all contain an important B vitamin for women called folate. It is now known that lack of this vitamin contributes to serious birth defects called neural tube defects, which each year, affect thousands of babies worldwide. Lack of folate is thought to affect the baby’s development, causing serious (sometimes fatal) brain and spine problems. Any woman planning a pregnancy should eat folate-rich foods and take a 0.5mg folic acid tablet daily for at least one month.
before pregnancy and for the first three months of pregnancy. These tablets are safe to take during pregnancy and are available from pharmacies and health food stores.

**Exercise:**
Exercise is important during pregnancy. It will help you to cope with the birth of your baby and regain your shape after your child is born. Swimming and walking are two activities which you can enjoy throughout your pregnancy. Be careful not to overdo it, and stop if you experience pain.

**4. Rubella (German Measles)**
Rubella is an infectious disease that can cause serious birth defects in unborn babies if the mother becomes infected. Around 90 per cent of babies whose mothers contract rubella during the first eight to ten weeks of pregnancy will be seriously affected. The baby’s hearing, sight and brain can be harmed and the risk of miscarriage and stillbirth is increased.

Making sure you’re immune to rubella before you become pregnant is really important. A simple blood test can tell if you have immunity. If you don’t, you can be immunised against the disease - but this must be done before pregnancy. If you’re a woman of childbearing age and you haven’t been immunised yet, please ask your doctor for the vaccine well before you consider becoming pregnant.

**5. Varicella (Chicken Pox)**
Chicken pox is caused by a virus called Varicella. If you have never had chicken pox or have not been vaccinated, discuss this with your GP as there is a test and vaccination available, both of which should be arranged before you become pregnant.

**6. General health**
It is important to consider seeing your general practitioner for a general check-up.

**7. Sexual health including Pap tests and STI screening**
It is a good idea to have a Pap test during your general check up (you should have one every two years). A Pap test detects early changes in the cervix (the neck of the uterus), which could, if untreated, lead to cancer. Exposure to viruses, such as HIV (the virus which causes AIDS) or Hepatitis B and C may be harmful to an unborn baby. If you think you are at risk, talk to your doctor.

**8. Dental Check**
A visit to your dentist for a check-up to ensure that your teeth and gums are in top condition is recommended. If there are problems, it is best to have the work done before you become pregnant.

**9. Referral pre pregnancy**
Some women may have a complication or family history that may necessitate referral for discussion pre pregnancy. These complications or conditions may include:
- 2 or more miscarriages
- Previous stillbirth or infant death
- A baby born with abnormalities
- Medical conditions such as heart or kidney problems
- Assist in the detection of any conditions that might cause problems in pregnancy.
Fact Sheet: Good Nutrition in Pregnancy
A healthy pregnancy is important for you and your baby. Even though you are eating for two, there is no need to eat twice as much. It is the quality of the food not the quantity that matters most. You can expect a weight gain of around 10–13 kg during your pregnancy. The pattern of weight gain is also important and a gain of 1–2 kg in the first three months and then 1½ to 2 kg per month is desirable. Discuss any questions or concerns with your doctor, midwife or dietitian.

Your diet should follow the same guidelines as those for every woman – that is, low in fat and high in complex carbohydrate and fibre rich foods. Pregnancy increases your requirements for a range of nutrients, particularly calcium, iron and folate. So you will need to eat more foods containing these nutrients.

**Calcium:** Calcium is needed to form strong bones and teeth in your developing baby. Dairy foods such as milk, cheese and yoghurt are the best sources. Non-dairy sources such as calcium fortified soy drinks, soy yoghurt, soy cheese, salmon (bones included), sardines, tofu (soy bean curd) tahini (sesame seed paste) and almonds also contain calcium.

**Iron:** Iron is necessary for healthy blood. The best sources are red meats such as beef, lamb, pork, kidney, chicken and fish. These sources of iron are the most easily absorbed by your body. Liver is an excellent source of iron. However it should be limited to one serve per week during pregnancy as it is also high in vitamin A, which can be harmful to your baby. Other sources of iron include nuts, lentils, soy beans, baked beans, wholemeal breads and cereal products, fortified breakfast cereals, spinach and broccoli, eggs, prunes and dried apricots. You will absorb more iron from these foods if they are eaten with a little meat or with a food rich in vitamin C, for example: oranges, tomatoes, broccoli or fruit juice.

**Folate:** It is important to have good folate stores prior to pregnancy and in the first twelve weeks of pregnancy. Adequate amounts of this vitamin will help to prevent birth defects, known as neural tube defects, like spina bifida. Eat several serves of folate rich foods every day to meet your increased needs. A daily folate supplement of 0.5mg for at least one month before and the first three months of pregnancy is also advised. Folate rich foods include:
- dark green leafy vegetables such as broccoli, spinach and brussel sprouts
- other vegetables such as asparagus, green beans, cauliflower, peas, parsley and tomatoes
- fresh fruits such as avocado, bananas, oranges/ juice, rockmelon and strawberries
- legumes such as chick peas and soy beans
- wholegrain breads, oats and fortified breakfast cereals (check the label)
- yeast extract spreads such as Vegemite™ and Promite™ nuts and peanut butter.

Choose a variety of foods from the following food groups every day to meet your nutritional needs during pregnancy.
**Breads and cereals**  
Wholemeal/wholegrain choices are best  

<table>
<thead>
<tr>
<th>Serves</th>
<th>Example</th>
</tr>
</thead>
</table>
| 4–6 | 1 serve =  
2 slices of bread  
1 roll, muffin, scone  
1 cup pasta or rice  
1 and 1/3 cups breakfast cereal |

**Vegetables**  
Choose a variety of different coloured vegetables; fresh, frozen, canned, dried, cooked or raw.  

<table>
<thead>
<tr>
<th>Serves</th>
<th>Example</th>
</tr>
</thead>
</table>
| 5–6 | 1 serve =  
½ cup cooked veg (75g)  
1 cup salad  
1 potato or carrot  
½ cup cooked dried beans, peas or lentils |

**Fruits**  
Choose different coloured varieties of fresh, frozen, canned or dried fruit.  

<table>
<thead>
<tr>
<th>Serves</th>
<th>Example</th>
</tr>
</thead>
</table>
| 4 | 1 serve =  
1 medium piece of fruit  
2 small fruits  
1 cup stewed fruit  
½ cup juice  
dried fruit eg 4 dried apricots |

**Milk, yoghurt and cheese**  
Reduced and low fat varieties are high in calcium  

<table>
<thead>
<tr>
<th>Serves</th>
<th>Example</th>
</tr>
</thead>
</table>
| 2 | 1 serve=  
250mls milk  
200g yoghurt  
40g cheese  
250mls soy drink (calcium enriched) |

**Meat, chicken, fish, eggs, nuts, peas such as chick peas and legumes such as baked beans and kidney beans**  

<table>
<thead>
<tr>
<th>Serves</th>
<th>Example</th>
</tr>
</thead>
</table>
| 1 | 1 serve=  
65–100g meat, chicken  
80-120g fish  
2 eggs ½ cup cooked dried beans, peas or lentils  
1/3 cup nuts |

**Fats and oils**  
Use small amounts  
Include mono and polyunsaturated types such as olive, canola and sunflower oils.

### Sample Meal Plan

**Breakfast**  
Wholegrain breakfast cereal with stewed fruit and milk  
Toast (preferably wholemeal or wholegrain) with spreads

**Snack**  
Fresh fruit or fruit muffin

**Lunch**  
Pita bread filled with salmon and salad  
Yoghurt or a milk drink  
Fresh fruit  
Water/Juice

**Snack**  
Scones / Muffins/ Crumpets with Tea / Coffee

**Dinner**  
Beef and vegetable stir fry  
Baked apple with custard  
Noodles

**Supper**  
Cheese and biscuits with Glass of milk
Snacks are sometimes more convenient for pregnant women than organised meals during the day. Choose from the following snack ideas to meet your increased nutrition needs.
- Yoghurt – except soft serve. Yoghurts can be partially frozen and eaten as an ice-cream substitute.
- Muffins with fruit, berries and/or bran.
- Cracker biscuits with cheese or Vegemite™.
- Tinned or fresh fruit.
- Dried fruit, nuts and popcorn.
- Ready to eat whole grain cereals.
- Boiled or microwaved potato. Serve plain or with savoury topping eg baked beans, cheese, creamed corn.
- Mini pizzas made on muffins or Lebanese bread.
- Reduced fat milk drink with combinations of yoghurt, fruit, ice cream or topping.
- Toasted sandwiches, jaffles, fruit loaf, toasted muffins or bread.

What about ...?
Alcohol: Alcohol should be avoided, particularly during the early stages of pregnancy as it may harm a developing baby. There is no known safe level of alcohol use in pregnancy.

Caffeine: Try to limit to 2–3 cups of tea, coffee or cola drinks per day. Too much can affect the absorption of some nutrients.

Constipation: To prevent constipation include high fibre foods such as wholemeal bread and cereals, fruit and vegetables. Drink plenty of water and try to exercise most days.

Fish and mercury: You can prevent harm to your unborn child’s developing brain and nervous system by limiting the types of fish you eat that have higher levels of mercury. You should eat a limit of:
- 1 serve (150grams) of Orange Roughy (Deep Sea Perch) or Catfish a week and no other fish that week OR
- 1 serve per fortnight of Shark fish (Flake) or Billfish (Swordfish/Broadbill, Marlin) and no other fish that fortnight OR
- If the above types of fish are not eaten, 2–3 serves of other fish or seafood (including tinned tuna and salmon) can be safely eaten each week.

Toxoplasmosis: Toxoplasmosis is an infection resulting from eating raw or undercooked meats, or from contact with cat faeces. Toxoplasmosis in pregnant women can affect the unborn child. Pregnant women should avoid eating raw or undercooked meats. Careful attention should also be given to good food hygiene practices.

Morning sickness: This is experienced by many women. It is most often a problem in the first few months. It may occur at any time of the day. Try to: eat small, frequent meals; have dry foods before getting out of bed, eg savoury cracker biscuits or toast; eat cold or plain foods; avoid fatty, highly spiced foods; avoid drinking with meals; and/or have someone else prepare your meals.
**Listeria infection:** This can result from eating food contaminated with a bacteria: *Listeria monocytogenes*. It can harm an unborn baby and may cause stillbirth. Pregnant women should not eat foods which carry a high risk of listeria growth. High risk foods include processed foods that are:

- Not adequately heat treated; or
- Stored for long periods; or
- Subject to poor food hygiene practices.

It is best to avoid:

- Unpasteurised milk
- Pre-prepared paté
- Soft cheeses eg brie, ricotta, feta
- Soft serve ice-cream and soft serve yoghurt
- Cooked chicken used in takeaway sandwiches
- Processed meats like devon or ham
- Cold, smoked and raw seafood like oysters
- Pre-prepared or stored salads like coleslaw
- Foods close to or past the “use by” date.

Pregnant women should also avoid foods that have been prepared and then stored in the refrigerator for more than 12 hours. Leftovers should be thoroughly reheated until piping hot.

Freshly cooked foods may be frozen promptly then thawed in the refrigerator and used within 12 hours. Never thaw food at room temperature.

**What foods are safe?**

Listeria is destroyed by cooking. Foods which are safe include:

- Freshly cooked foods, used within 12 hours of preparation;
- Fresh pasteurised milk and milk products, and UHT milk;
- Yoghurt and hard cheeses;
- Fresh washed vegetables and fruit; and
- Canned foods.
Fact Sheet: Weight and Pregnancy

Weight is a significant health factor before, during and after pregnancy. Being in the healthy weight range is recommended as a good foundation for best outcomes for mothers and babies. Being significantly overweight is a risk factor for pregnant women.

How heavy is risky?
The best indicator of weight and risk in pregnancy is the Body Mass Index (BMI). The BMI is best calculated using the woman’s pre-pregnant weight (in kgs) and height (in metres), this is done by dividing the weight by the height squared (BMI = kg/m2) The table below shows the risks at different BMIs.

Weight issues pre-conception
Ideally, all women planning to become pregnant should consider their weight before becoming pregnant. If your weight is normal or you are in the over-weight but not obese range (BMI less than 30), eat well and keep fit (see Fact Sheets Preconception and Good Nutrition in Pregnancy). Women in the obese range (BMI greater than 30) have an increased risk of infertility and should seek advice from a dietician and exercise consultant to lose weight and increase fitness.

Increased BMI during pregnancy
For women who are overweight while pregnant, controlled healthy eating and regular exercise can make a difference to well-being for mother and baby. It is important to plan healthy eating in pregnancy with a dietician so that you include all that your baby needs for healthy growth in your diet. A midwife or GP can refer you to see a dietician to discuss your special nutritional needs while you are pregnant.

<table>
<thead>
<tr>
<th>Classification BMI (kg/m2)</th>
<th>Risk of obstetric/anaesthetic complications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal range</td>
<td>No increased obstetric or maternal risk</td>
</tr>
<tr>
<td>Overweight</td>
<td>No increased obstetric or maternal risk</td>
</tr>
<tr>
<td>Obese I</td>
<td>Mildly increased obstetric and maternal risk</td>
</tr>
<tr>
<td>Obese II</td>
<td>Moderately increased obstetric and maternal risk</td>
</tr>
<tr>
<td>Obese III</td>
<td>Significantly increased obstetric and maternal risk</td>
</tr>
</tbody>
</table>
What are some of the risks of a BMI greater than 30?

During pregnancy:
- Increased chance of diabetes during the pregnancy
- Increased risk of high blood pressure and pre eclampsia (serious complications resulting from high blood pressure and kidney failure)
- Risk of poor placental function and reduced fetal growth rate (a baby that is too small)
- In some pregnancies, a risk of the baby growing too big, having a difficult delivery and being less healthy at birth

During labour:
- Poor progress in labour with increased risk of forceps delivery or caesarean section
- Difficulty monitoring the baby’s heart rate
- Increased rate of complications with caesarean section due to increased surgical problems when operating on women with BMI greater than 30

Anaesthetic complications:
Some women need an anaesthetic for emergency or planned caesarean section or for complications following the delivery of the baby. Women with BMI greater than 30 have more complications during and following surgery, than women in the healthy weight range.

After the birth
- An increased risk of wound infection for women who have had surgery or stitches following the delivery of the baby
- An increased risk of blood clots in the veins of the legs and pelvis with risk of pulmonary embolism (clots in the lungs).

Good nutrition and daily exercise can improve the health and wellbeing of all women and their babies. Women who are planning a pregnancy or who are pregnant with a BMI greater than 30 are encouraged to discuss their special needs with their health care team.
**Fact Sheet: Breastfeeding**

Breastfeeding is the normal and most beneficial way for feeding. Your baby’s growth and development depends on the food he/she gets. Breastfeeding provides all your baby’s essential needs for growth, development and protection from illness and disease.

**Best for Baby**
- Breast milk meets all your baby’s nutritional needs for the first six months.
- Breast milk changes during the feed, as well as over months and years, meet your baby’s changing nutritional, immunological, growth and developmental needs
- Regular skin-to-skin contact and close interaction during breastfeeds encourages mutual responsiveness and attachment
- Breast milk contains many anti-infective factors that help protect your baby from illnesses such as gastroenteritis and infections
- Breastfeeding lowers the risk of being overweight, obesity and diabetes in childhood and adulthood
- Babies who are breastfed have higher IQ scores and better jaw and speech development
- Breast milk is easily digested and nappies do not have an offensive smell.

**Best for Mother**
- Early suckling minimises bleeding after birth and helps your uterus return to its pre-pregnant state
- Breastfeeding aids a faster return to pre-pregnancy body weight as it uses kilojoules to make the milk
- Full breastfeeding delays the return of fertility
- Breastfeeding may reduce the risk of pre-menopausal breast, ovarian and endometrial cancers
- Breastfeeding may lead to stronger bones and less osteoporosis
- While breastfeeding your baby you are able to rest
- The hormone, oxytocin helps you to fall back to sleep after night feeds.

**Best for family**
- A healthier baby means reduced costs in doctor’s visits and medicine
- Breastfeeding is free
- Breastfeeding is safe and convenient

**Breastfeeding is for partners too**

Like mothers, fathers bond in a unique way with their babies. They play a special role in breastfeeding by supporting you and your baby while you are learning. Research shows those mothers who have positive encouragement and support from their partner and family for breastfeeding find parenting more enjoyable. Partners can be involved by:
- Helping you to be comfortable and have enough to eat and drink while you are breastfeeding
- Giving some “time out” by helping to settle the baby after and between breastfeeds
- Providing practical support such as bathing and changing the baby
- Monitoring visitors so well wishers do not overwhelm you and your baby
How do I make breast milk?
At birth you will have rich, thick, concentrated first milk called ‘colostrum’. Colostrum is nutritionally rich and provides an immunological boost for your baby’s start to life. A hormone (prolactin) is released which signals your breasts to commence making milk. When your baby starts sucking another hormone (oxytocin) releases your milk in to your milk ducts. Your milk flows towards the nipple as your baby suckles. This is called the ‘let-down’ reflex. Over the next week your milk will gradually change to become lighter in colour and more abundant. Your breasts will continue to produce milk as your baby suckles. The more your baby feeds the more milk you will make. Your breasts may feel swollen in the first days until they become used to producing milk and meeting your baby’s needs. Your breasts will adjust and produce the right amount of milk for your baby within a few weeks.

How long should each feed last?
Feeds can be enjoyed as long and as often as your baby wants. Allowing your baby’s appetite and thirst to regulate your milk supply establishes a basis for the rest of your breastfeeding, so it is best to respond to your baby’s needs. As long as your baby is attached correctly and your baby is sucking, then the time is unimportant. Babies get more efficient as they grow and the time of each breastfeed may vary.

How frequently should I feed my baby?
The frequency of feeds will depend on your baby. Your baby will not have a feeding routine in the first weeks. He/she may want to feed every two hours at some stage and then may not feed for a five hour period. Some babies feed in clusters. This daily variation is normal. Babies will feed around six to eight times every 24 hours. Some babies will feed more times than this.

How do I know if my baby is getting enough?
If your baby:
- is feeding at least six to eight feeds in 24 hours
- has six to eight pale, wet nappies in 24 hours
- does soft poos
- is looking bright, alert and contented
- is sleeping in the 24 hour period and is growing and developing, then he/ she is getting enough milk. Healthy babies take as much as they want when breastfeeding. One of the major advantages for breastfeeding is that your baby satisfies his/her thirst, appetite and growing needs by breastfeeding as many times as your baby wants.

The World Health Organisation and the National Health and Medical Research Council recommend that you exclusively breastfeed your baby with no other milks, food or drinks, until about six months. At about six months it is further recommended that you begin to introduce your baby to solid foods while continuing to breastfeed until 12 months or longer. Breastfeeding can continue to provide health benefits in your baby’s second year of life and beyond.
**Baby Friendly Health Initiative**

The Baby Friendly Health Initiative (BFHI) is an international project that aims to give every baby the best start in life by creating a health care environment where breastfeeding is the norm and practices known to promote the health and wellbeing of all babies and their mothers are followed. The BFHI Ten Steps to Successful Breastfeeding are the global standard by which health services are assessed and accredited. A “Baby Friendly” health service is one where mothers’ informed choice of feeding is supported, respected and encouraged.

**The Ten Steps to Successful Breastfeeding**

1. Have a written breastfeeding policy that is routinely communicated to all health care staff
2. Train all health care staff in skills necessary to implement this policy
3. Inform all pregnant women about the benefits and management of breastfeeding
4. Place babies in skin-to-skin contact with their mothers immediately following birth for at least an hour and encourage mothers to recognise when their babies are ready to breastfeed, offering help if needed.
5. Show mothers how to breastfeed and how to maintain lactation even if they should be separated from their infants
6. Give newborn infants no food or drink other than breast milk, unless medically indicated
7. Practice rooming-in, allow mothers and infants to remain together-24 hours a day
8. Encourage breastfeeding on demand
9. Give no artificial teats or dummies to breastfeeding infants
10. Foster the establishment of breastfeeding support and refer mothers on discharge from the facility

**For more information on breastfeeding you can talk to your Maternal and Child Health Nurse by phoning 5519 2600 or attending the drop in service if your baby is less than eight weeks old.**

There are lactation consultants at several Child Health locations or you can be referred to one if required

This breastfeeding fact sheet is based on the NSW Department of Health Publication *Breastfeeding Your Baby* (2006)
Fact Sheet: Smoking in Pregnancy

Cigarette smoke contains more than 4,000 chemicals (including 69 that cause cancer) that both you and your baby are exposed to when you smoke.

Smoking and your unborn baby
There is no safe level of smoking throughout your pregnancy. Smoking during pregnancy makes it difficult for your baby to get the nourishment and oxygen it needs to survive. By stopping smoking your baby will benefit straight away. The umbilical cord is your baby’s lifeline. The blood that flows through the cord gives your baby all the nutrients and oxygen it needs to help it grow. When you smoke the amount of oxygen available to your baby through the umbilical cord is reduced. This makes the baby’s heart beat faster and can increase the overall stress on its developing body. Smoking can also reduce the blood flow through the placenta, which can limit the amount of nutrients that feed the baby. Chemicals in tobacco smoke like carbon monoxide and other toxic chemicals can pass through the placenta to your baby. Nicotine increases the heart rate and breathing rate in your baby, just as it affects you.

Smokers in pregnancy
- have a greater risk of miscarriage and ectopic pregnancy
- have a higher risk of having a premature baby
- have a higher risk of having complications of pregnancy affecting the placenta
- have a higher risk of having a low birth weight baby

If you smoke after your baby is born
The risk of Sudden Infant Death Syndrome (SIDS) is increased. Keep baby safe by asking smokers to always go outside the home or car to smoke. Your baby may be more at risk of asthma and other respiratory infections. Many of the 4,000+ chemicals the mother inhales are passed on to the baby through breast milk and through passive smoking.

Breastfeeding
Breast milk protects your baby against infection. If you smoke, your production of breast milk may be reduced and some harmful substances may be absorbed by the baby through the breast milk. If you are having difficulty quitting smoking, try not to smoke just before or during feeds. Always go outside to smoke, and ask others to do so. If you can’t give up, keep working on it. The benefits of quitting begin as soon as you give up smoking.

Passive Smoking
Anytime someone smokes near or around you or your children, you are all smoking too. This is called passive smoking or environmental tobacco smoke (ETS). ETS can affect the health of children:
- young children may be more affected by tobacco smoke and the chemicals it contains, as they have smaller, more delicate lungs.
- children of smokers may be more likely to suffer from asthma, respiratory infections and may cough during the night.
Why should I stop now?
You have done the best you can for you and your baby. You will stop possible damage to your baby and your family. You will feel healthier and stop further damage to yourself. You will save money on the cost of cigarettes.

Want to give up?
Many people have given up smoking. You can too! If you need help, you can call the QuitLine or talk to your GP.
QuitLine 13 78 48

Remember...
There is no safe level of smoking. Even a few cigarettes a day exposes your baby to harmful chemicals that can affect your baby’s growth and development.

With thanks to NSW Health, Quit SA and Queensland Government Pregnancy Lifescrpts
Fact Sheet: Miscarriage

Miscarriage is a term to describe a pregnancy that does not survive beyond 20 weeks. It can include a number of terms, which sound confusing but all mean the same to the woman and her partner who have lost their baby.

For a pregnancy to be healthy there needs to be three components:

- The tissue that goes on to form the placenta. This produces the hormone that gives a positive pregnancy test.
- The tissue that goes on to form the membranes around the baby.
- The baby itself

It sometimes happens that even with all 3 components present a pregnancy will not continue. Sometimes just the placental type tissue develops and sometimes the placenta and membranes will develop.

The terms that you may hear include:

- **Blighted ovum.** The term “anembryonic pregnancy” is sometimes used. This is where on ultrasound all that can be seen are the placental tissue and the membranes.

- **Missed miscarriage.** The term “missed abortion” is still sometimes used to mean the same thing. It means that the pregnancy has stopped growing some time ago (this may be days or weeks) but that there has been no sign of miscarriage. It might include placenta, membranes and baby but there would be no heartbeat seen.

- **Incomplete miscarriage.** This is where there has been some bleeding and the woman has tried to have a miscarriage but that there is still some tissue (usually placental) left behind.

- **Complete miscarriage.** There has been some bleeding, sometimes pain, and the woman has completed a miscarriage.

- **Ectopic pregnancy.** There has been a positive pregnancy test, there may have been some pregnancy symptoms but the pregnancy develops outside the uterus, most commonly in the uterine tubes. Usually only placental tissue develops and the baby does not form.

Reasons for miscarriage:

The first question that many people will ask is why did this happen? It is important to remember that unfortunately, miscarriage is very common. About one in every three pregnancies results in miscarriage and this figure may even be higher if you could detect all the pregnancies that do not develop before the missed period.
There is a list of things we know that can definitely cause a miscarriage such as: Chromosomal/genetic abnormalities, infections, some drugs, problems with the mother’s health, problems with the father’s health. However, often we do not have a reason why this particular pregnancy went wrong.

After one miscarriage the most likely thing to happen will be that the next pregnancy is normal.

Do I need any blood tests after a miscarriage?

There are tests that can be done to find out the very uncommon causes of miscarriage, but these are usually done after a woman has had 3 miscarriages. We do this because we know that after only one miscarriage, the chance that something is actually wrong with her or her partner is very low.

Where do I go from here?

In most instances you do not have to do anything straight away. Some people need to ring people to talk to or for support. Some people need time to get used to the idea that they are no longer pregnant. It is important to remember that most people don’t think of what is involved in the early stage of pregnancy to produce a well-grown baby at the end. When a woman has a positive pregnancy test she may think only of a well-grown baby and it may take some time for her to accept that her pregnancy has gone wrong. There are a few instances where it is important to seek medical attention early and your doctor will explain these to you.

Depending on your situation there are a number of choices:

- There is no need to do anything as your body has done all the work and that you do not need an operation. The bleeding will settle over the next 2 weeks and your next cycle will happen about 4-6 weeks after your miscarriage.

- You may wish to wait a period of time to see if your body does the work and therefore you avoid need to have an operation. This may take a couple of days but then should settle. It would not be recommended that you take this option if you cannot access the hospital easily or that if the process is taking a long time.

- You can have an operation called a curette (commonly known as a “D&C”), which requires a general anaesthetic (you would be put to sleep for the operation).

- There is a medication that is suitable for some women, which will assist your body to complete the miscarriage.

All these options have their good points and bad points. These will need to be discussed in the context of your situation
What about after the miscarriage?

Whether you have an operation or not, the bleeding can take about 2 weeks to settle down. If you bleed longer than that it does not mean that anything is wrong but you should see your doctor. You should not have any intercourse until the bleeding has stopped. If at any stage the bleeding increases or you feel unwell you must see a doctor immediately. This may mean that you have an infection and this will need to be treated. If you are planning another pregnancy then you should continue to take folic acid. You may need to add an iron supplement if your blood count is low after the miscarriage. It is usually recommended that you have at least one normal menstrual cycle before you become pregnant again.

Your emotions can sometimes be disturbing. The reaction to having a miscarriage can be very different for each woman and her partner. Some women will have a very philosophical or spiritual reaction and see it as ‘nature’s way’ while others may have a very deep grief reaction. There is a huge range of reactions and most of these are normal. The following support groups available:

- SIDS and Kids: (07) 3849 7122
- Miss Group: 0419 704 935
- Angel Babies Foundation: 1300 283 238
- Families Forever Prenatal Diagnosis Support Group: 0403 774 459
- Teddy Love Club: 1800 824 240

Sometimes even if you have dealt with it well there are anniversary dates that may remind you, such as the day you had a scan booked, the day you had your first antenatal visit or the day the baby was due. Remember that miscarriages happen very often and many women will have been through what you are going through so don’t be afraid to talk to people if you think it will help.
Fact Sheet: Vaginal Birth after Caesarean

It was once believed that “once a caesarean, always a caesarean”. However, Vaginal Birth After Caesarean (VBAC) is a safe alternative for most women, including women who have undergone more than one caesarean birth in the past. It is thought that 80% of women may be suitable for VBAC of which 60-80% are successful regardless of the reason for the first caesarean.

What are the advantages of a VBAC?

The advantages of a vaginal birth are:

- No abdominal surgery
- Shorter hospital stay
- Reduced risk of infection
- Reduced need for blood transfusions
- Faster recovery

Is VBAC right for you?

Although about 60–80% of women succeed in having a VBAC, other women may try a VBAC but need to switch to a caesarean birth either late in pregnancy or during labour. Factors which need to be considered when deciding if VBAC is an option for you include:

- The reason for the previous caesarean
- The type of incision you had in your uterus for your previous caesarean
- Your baby’s presentation in late pregnancy (i.e. Is it “head down”?)
- The size of your baby
- The location of the placenta in your uterus
- Certain serious medical or obstetrical conditions affecting you or your baby

What are the risks associated with a VBAC?

In deciding if you can try VBAC, a key factor is the type of incision you had in your uterus for your previous caesarean birth. For caesarean birth, one incision is made in your abdomen and another in your uterus. Any incision makes a scar. Certain types of incisions have a higher risk of the scar in your uterus tearing during the next birth. There are three types of incisions:

- Low transverse – A side-to-side cut made across the lower, thinner part of the uterus. This is the most common type of incision and is acceptable for VBAC.
- Low vertical – An up-and-down cut made in the lower, thinner part of the uterus
- High vertical (or classical) – An up-and-down cut in the upper part of the uterus

The main risk associated with a VBAC, is related to the scar in the uterus. Like all scar tissue it may not work as well as an unscarred uterus. Problems include scar dehiscence, where the scar separates
but is held together by other tissue, and the more serious scar rupture. Women with high vertical (classical) scars on their uterus have a higher risk of rupture and we do not recommend that women with a vertical uterine scar undergo a VBAC. Women who have had more than one caesarean delivery also may have an increased risk of rupture. However the data on this is not very robust and each individual woman would need to discuss her circumstances with a midwife and obstetrician. It is generally agreed the risk of rupture for women who have had one caesarean before is about 1 in 200-300 but with careful observation of your labour it is rare that this risk results in serious problems for either the mother or her baby. A uterine rupture can be an emergency and that is why we recommend close monitoring during labour so that changes in the normal pattern of labour can be detected early and the risk minimised.

It is rare for a baby to die during VBAC; the risk is about 10:10,000. This is about the same risk as for a woman having her first pregnancy and going into labour, but a bit more than for a planned repeat caesarean section (1:10,000). During your labour you will be offered continuous monitoring of your baby’s heartbeat using an electronic fetal monitor or “CTG” machine to detect any signs that your baby is not coping with the labour. During your antenatal care there will be plenty of opportunities to discuss this with the team looking after you. There is a pathway for women wishing to consider VBAC that consists of a number of visits specifically to discuss your circumstances. The first visit at around 20 weeks is with an obstetrician to discuss reasons for your previous caesarean, review the operation notes if available or make arrangements for them to be reviewed, review any reasons why VBAC may not be an option for you and to document a plan which you are happy with. The second visit at around 36 weeks may include an ultrasound to review baby’s size and look at the area of the uterus where the scar was made and to review your decision.

**Things to think about if considering a VBAC:**

**Options.** Many women believe that it is an ‘all or nothing’ decision. It is important to realise that you still have a number of choices.

**Timing of repeat caesarean.** There may be a medical reason to have your baby at 38-39 weeks such as a placenta in the wrong position, a baby sitting in the wrong position, or a pregnancy problem that requires this earlier delivery. However, many women will make the choice to give themselves every opportunity to come into labour themselves and set a ‘cut-off’ of 40 weeks until they have their elective caesarean but are happy to labour before then. Some women are happy with this as they know that by then their baby is well ready to be born.

“**I had a really long labour the first time and I don’t want to do that again**”. Some women are scared that if they had a long labour the first time, usually because of the baby’s position, that they will have to do the same again. If your baby was in the “OP” or occipito-posterior position with its back against yours then these labours can often lead to the reason for an initial caesarean. The good news is that it is not very common for your next baby to be in a posterior position and the long drawn out labour associated with that doesn’t repeat itself. The other good news is that it is quite likely that the labour you did have is really helpful for your chances of having a much quicker and
successful VBAC. You can also set limits about your labour and it is recommended that you are assessed regularly (usually every four hours) to make sure you are making good progress. If at any point it looks like history repeating itself then you can then opt for the repeat caesarean. Some women are very happy to have a little bit of labour as it is further reassurance that their baby is ready to be born. This will include women who do not intend to proceed with a trial of labour. So for them, booking an elective caesarean at 41 weeks if all is well with the pregnancy gives them the best of both worlds.

“What are my best chances of success?” There are many things that influence any woman’s success in having a normal birth. With a VBAC if you come into labour by yourself, make progress and do it all without an epidural or a drip of Syntocinon to make the uterus contract then this gives you the best chance of an uncomplicated birth. If you get into labour and need/want an epidural or need Syntocinon then the risks increase. Similarly if you need an induction of labour the risks may also increase. You should discuss your individual circumstances with your obstetrician and midwife. Remember that you have a number of choices and you can come up with a plan in consultation with your midwife and obstetrician that suits your circumstances. There is a lot of information available about the risks and benefits of VBAC including the team looking after you. There is also a lot of information on the Internet however a word of caution: some of the information on the Internet can be misleading so be sure to discuss this information with your maternity care team. More information can be found on the website of the National Centre for Health and Clinical Excellence (UK): http://www.nice.org.uk/nicemedia/pdf/CG013fullguideline.pdf.

The options will also be discussed with you during your visits to the Gold Coast Hospital Antenatal Clinic.

Reference: www.nice.org.uk
Fact sheet: Induction of labour

Induction of labour is a process designed to start labour artificially and can be done in a number of different ways. This can be done for many different reasons, and it is estimated that, on average, about one in five labours is induced.

When is induction recommended?

The doctor may suggest an induction if the mother’s or the baby’s health is likely to benefit. There are a number of reasons why induction may be offered and recommended, including:

- you are overdue (i.e. your pregnancy is 10-14 days past the estimated due date)
- your waters break before labour starts
- if your blood pressure is high
- you have diabetes which requires insulin
- there is slowing down of your baby’s growth in your uterus or there is not much fluid (amniotic fluid) around your baby

When induction of labour is being considered, the doctor or midwife should fully discuss your options with you before any decision is reached. This should include explaining the procedures that will be involved and whether there are any risks to you or your baby. If you have had a previous caesarean section or have had more than five babies, this may affect whether induction is recommended. For some women there are medical reasons to induce her labour in order to reduce the risks associated with continuing the pregnancy.

What are the benefits of having an induction?

The major benefit is that any risks associated with continuing your pregnancy are removed.

There is also a minor advantage to you and your family in planning to be ready for the day the baby will be born. This is not an important factor if there are not other indications to have an induction.

What are the risks and disadvantages of having an induction?

The risks depend on the reason for induction and talking with the doctor should give you a clear understanding of these before the induction takes place.

- Unplanned premature baby if the expected date of birth is not correct. This risk is usually avoided if you have had an ultrasound scan before 20 weeks of pregnancy.
- Sometimes it can take a while to get a woman into labour. Thus, labour can seem longer. The more closed your cervix is at the start, the longer this time will be.
- Sometimes women request more pain relief.
- The baby’s heartbeat may need to be monitored continuously using an electronic fetal monitoring (CTG) machine. This type of monitoring may be recommended because of the reason you are being induced.
- Failed induction. There is a chance that the induction will not bring on contractions and progress to have a baby. When this happens, the doctor may suggest stopping the induction. If there is a need for the baby to be born, a caesarean section may be discussed or you may be asked to be rescheduled for an induction on another day.
- It can be hard for the woman to move in labour when she has an intravenous drip and if the electronic fetal monitor (CTG) is attached. Options such as labour in the bath or shower may not be possible.

**How is labour induced (started)?**

There are a variety of methods that can be used to induce labour. You may be offered one or all of the methods described below depending on individual circumstances.

**Membrane sweeping (“Stretch and sweep”):** This has been shown to increase the chances of labour starting naturally within the next 48 hours and can reduce the need for other methods of induction of labour. Membrane sweeping involves the midwife or doctor placing a finger into your vagina, just inside your cervix, and making a circular, sweeping movement to separate the membranes from your cervix. If you have agreed to induction of labour, you may be offered membrane sweeping before other methods are used. The procedure may cause some discomfort or bleeding, but will not cause any harm to your baby and it will not increase the chance of you or your baby getting an infection. Membrane sweeping is not recommended if you have already broken your waters.

**Using prostaglandin gel (“Prostin”).** Prostaglandins are drugs that help to induce labour by encouraging the cervix to get itself ready for labour. In order to be ready for labour, the cervix must soften and shorten (ripen) to allow it to open (“dilate”) and for contractions to start. Prostaglandins help the cervix do this, and are normally given as a gel or a tape that is inserted into the vagina. This is done in hospital on an antenatal ward. More than one dose may be needed to induce labour, and these may be 6-8 hours apart as they cannot be given too close together. If your membranes have not yet ruptured (waters broken) prostaglandins are usually the recommended method of induction. However, your cervix may already be too ripe even if your membranes are not ruptured and prostaglandins would then not be the safest form of induction. This is the case whether this is your first pregnancy or not. Before giving prostaglandins the midwife or doctor will check the baby’s heart beat using an electronic fetal heart rate monitor. After being given prostaglandins you should lie down for at least thirty minutes. Once your contractions start the midwife or doctor should monitor your baby’s heartbeat again. Once it is established that everything is okay monitoring may be discontinued and you will be able to move around. There is no evidence to suggest that labour induced with prostaglandins is any more painful than labour that has started naturally. However prostaglandins sometimes cause vaginal soreness. Very occasionally prostaglandins can cause the uterus to contract too much which may affect the pattern of your baby’s heartbeat. If this happens
you will be asked to lie on your left side. You may be given other medication to help relax the uterus and any prostaglandin gel or tape remaining in your vagina may be removed.

**Breaking your waters.** If your waters have not broken, a procedure called an amniotomy (ARM-artificial rupture of membranes) may be recommended. This is when your midwife or doctor makes a hole in your membrane to release (break) the waters. This procedure is done at the time of a vaginal examination using a small plastic hook called an “Amnihook “. This will cause no harm to your baby, but the vaginal examination needed to perform this procedure may cause you some discomfort. This is performed in the delivery room (labour ward).

**Using Oxytocin (“Syntocinon” or “Synto”).** Oxytocin is given in hospital in the delivery room (labour ward) via an intravenous drip, usually inserted in the back of your hand. This is a drug that encourages uterine contractions. Once contractions have begun, the rate of the drip can be adjusted so that your contractions occur regularly until your baby is born. Whilst being given the oxytocin the midwife or doctor will monitor your baby’s heartbeat continuously using a CTG monitor. Very occasionally oxytocin can cause the uterus to contract too much which may affect the pattern of your baby’s heartbeat. If this happens you should be asked to lie on your left hand side and the drip will be turned down or off to decrease the contractions. Sometimes another drug will be given to counteract the oxytocin and decrease the contractions. If you have already had prostaglandins, oxytocin should not usually be given for at least six hours.

The doctor or midwife will discuss all of these options with you before any decision is reached. They will explain the procedures and care that will be involved and whether there are any risks to you or your baby.

*For further information about induction of labour talk to the midwife or doctor caring for you.*
Fact Sheet: Nuchal Translucency Scan

First trimester screening for Down syndrome consists of a Nuchal Translucency Scan (NTS) and first trimester serum screening. The NTS is an ultrasound test done between 11 weeks + 3 days and 13 weeks + 6 days of pregnancy and the serum screening test can be done after 9 weeks gestation. The aim of the test is to determine if you are at an increased risk of having a baby with a chromosome abnormality, most commonly, Down syndrome. This is a screening test and does not diagnose an abnormality, it merely finds those who are at greater risk and who may opt for further testing.

How common is Down syndrome?

Down syndrome occurs in about 1 in every 700 births and the chance of having a baby with this condition increases with maternal age. For example the risk at age 20 is approximately 1:1500 but at age 40 is about 1:100.

What is a Nuchal Translucency?

All babies have a fluid collection within the skin at the back of the neck and this is called the Nuchal Translucency (NT). The larger the measurement of the translucency, the higher the chance the baby will have Down Syndrome. This fluid often disappears by 15 weeks.

How is it measured?

The nuchal translucency is measured by using ultrasound, usually through the abdomen.

Occasionally a transvaginal approach may be required. Ultrasound is the passage of inaudible sound waves into the body that reflect off the internal structures and then bounce back to the machine where they are converted into a picture. Ultrasound is considered safe in pregnancy and will not harm your baby.

The ultrasound picture may be clearer if you have a full bladder, this is why we ask you to drink 2 glasses of water an hour before your appointment. However, there is no benefit in being painfully uncomfortable so if your scan is delayed please feel free to make yourself comfortable, trying not to completely empty your bladder.
What is the First trimester Serum Screening test?

A blood test can be taken preferably a week before the scan, or at the time of the scan and this measures two hormones, Free Beta HCG and PAPP-A in the mother’s blood. When the blood test is performed prior to the NT scan the results are usually available on the day of the scan so that a combined risk assessment is available immediately.

How do we calculate the risk for Down syndrome?

The nuchal translucency measurement, the length of the baby from head to bottom (Crown Rump length) and your date of birth are entered into a computer program, along with the results of the first trimester serum screening to calculate your combined adjusted risk.

This risk assessment is based on data from the Fetal Medicine Foundation in UK. All operators performing this test should be accredited by the Australian Nuchal Translucency Education, Ultrasound and Monitoring Program to perform this test. www.nuchaltrans.edu.au

What is an increased risk?

Risk is a very individual thing, however, it is generally accepted that a risk greater than 1 in 300 is considered increased and further testing may be appropriate.

How do I get the result and how accurate is it?

You will be given the result as soon as all of the data is available. If the blood test has been done prior to the Nuchal translucency and the results are available, you will receive the adjusted risk at the time of the scan. A Nuchal Translucency scan, properly performed, has been shown to pick up about 70% of babies with Down syndrome.

It is now reported that using the NT scan and the 1st trimester serum screening blood test together increases the detection rate of Down Syndrome to around 95%.

More recently, the detection of the fetal nasal bone has been added to this test to give further reassurance (in Australia the nasal bone component of the NT software is not activated and is not part of the algorithm that calculates risk)
What next?

After the results are explained to you, you will be given several options.

1. Do nothing more – you are happy with your new adjusted risk result
2. Invasive testing by either Amniocentesis or Chorionic Villus Sampling (CVS)

What if I want a definite answer?

If you want a definite answer or if your adjusted risk is increased there are two tests available which will give you a definitive result.

CVS – performed from 11 weeks onwards. Under ultrasound guidance placental cells are removed and tested.

Amniocentesis – performed from 14–15 weeks onwards. Under ultrasound guidance a small amount of amniotic fluid is taken from around the baby and the cells contained in the fluid are cultured and examined. Both of these tests have a miscarriage risk of 0.5% –1%.

Do I need another ultrasound?

The NT scan at 11+3 – 13+6 weeks may be too early to detect many other abnormalities so another scan should be carried out at 18–20 weeks to look for structural anomalies. Remember that a normal ultrasound does not guarantee a normal baby. There are a number of conditions that may be apparent after birth but are not detectable by ultrasound. If you have any questions regarding this test please do not hesitate to ask the person performing your ultrasound.
Fact Sheet: Amniocentesis

What is amniocentesis?

Amniocentesis is a procedure where a small quantity of the fluid surrounding the fetus in the uterus, is withdrawn through a needle passed through the abdominal wall of the mother.

When is it performed?

It is usually performed from around the 15th week of pregnancy. Sometimes the amount of fluid (liquor) present at this time is not enough, and the procedure may need to be deferred for a week or two.

What are the indications?

The most common indication for the procedure is to detect the presence of chromosomal abnormalities in the fetus. Every cell in the body contains genetic information (chromosomes). Cells shed from the skin of the fetus are found in the liquor surrounding it. By culturing these cells, the arrangement of the chromosomes making up the genetic information inside the cell can be identified. The most common chromosomal abnormality is Down syndrome, but there are other abnormalities.

Who should have the test?

For a healthy couple with no previous history of this abnormality, the risk of giving birth to an infant with a chromosomal abnormality is related to the age of the mother. The risks are approximately as follows:

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<th>Woman Age (years)</th>
<th>Risk</th>
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<tbody>
<tr>
<td>20</td>
<td>1 in 1500</td>
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<tr>
<td>30</td>
<td>1 in 800</td>
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<td>35</td>
<td>1 in 170</td>
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<td>37</td>
<td>1 in 80</td>
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<td>40</td>
<td>1 in 40</td>
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<tr>
<td>45</td>
<td>1 in 20</td>
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</table>

These values change significantly if a mother has had a previous baby with Down syndrome. There are other indications for amniocentesis but these usually involve rare problems. The test will not diagnose many common abnormalities like a cleft lip or a heart abnormality. It is for that reason we still recommend a morphology scan at 18-20 weeks, even if the results of the NTS are normal.

The figures above should be viewed in relation to the overall risk. At the Gold Coast Hospital we believe the age at which women should be offered amniocentesis solely on the grounds of maternal
age should be 35; however we are happy to discuss the situation with younger women. The Nuchal Translucency testing has almost negated this reason for amniocentesis.

**Is my partner welcome?**

Partners and support persons are very welcome. It is very useful for them to be present at the discussion prior to the procedure. They will also have an opportunity to see the ultrasound scan performed prior to the procedure. If possible please do not bring children as they may become bored and disruptive.

**How is it done?**

An ultrasound scan is performed to check on the baby’s age and to choose a site for amniocentesis. Sometimes, if the pregnancy is not as far advanced as expected (and this bears no significance as to whether the fetus is normal or not), you will be asked to return at another time. Under ultrasound guidance the amniocentesis needle is inserted through the skin into the pregnancy sac. A small amount of liquor is removed. This is not painful but some discomfort following the procedure is not unusual.

**What are the risks?**

Current knowledge is that ultrasound scanning is harmless to both mother and baby. Approximately 1 in 200 of women who have an amniocentesis will miscarry because of the procedure but because spontaneous miscarriage is not uncommon at this stage of pregnancy, an absolute figure is difficult to assess. If miscarriage does occur, it normally will happen within a week or two.

**What should you do after the test?**

A quiet day is all we suggest. If there is vaginal blood or fluid loss, you should report it to your referring doctor right away and rest in bed until the problem settles. Fluid loss is not too unusual and is not necessarily a sign of miscarriage.

**When are the results known?**

The chromosome studies take two to three weeks or sometimes a little longer. Very occasionally the amniotic fluid cells fail to grow and a chromosome result is not possible. If this happens, we would usually notify you about two weeks after the initial test, when it becomes obvious that growth is not occurring and we would normally offer to repeat the test. Cell culture failure has no relationship to chromosomal abnormalities. The result will include the baby’s gender. If you do not want to know the sex of your baby, it is important to tell the clinic staff. We will contact you as soon as the results are available.

**Consent Form for this Procedure**

You will be asked to sign a consent form for this procedure stating that you have read this information and understand it. If you do not understand anything, please discuss this further with the medical staff at the time of your appointment. Please refrain from asking administrative staff for medical information— it can often lead to more confusion.
Fact Sheet: Chorionic Villus Sampling (CVS)

What are chorionic villi?

Chorionic villi are part of the developing placenta and, as such, are fetal cells. By obtaining some of these cells early in pregnancy, it is possible to assess the chromosomal make up of the fetus and, on occasions, to identify whether particular infants are likely to carry abnormal genes.

The advantage of this test over amniocentesis is that it can be done earlier and, consequently, results can be obtained earlier. The test can usually be done between 10–12 weeks. If the test is done to exclude genetic syndromes like cystic fibrosis it is done earlier than when excluding chromosomal abnormalities, which is often timed to coincide with the nuchal translucency scan closer to 12 weeks. It has been performed worldwide since 1983.

There are two main techniques of taking the sample:
- sampling via the cervix
- sampling via the maternal abdomen

Abdominal sampling is used in most hospitals, but occasionally sampling via the cervix is the preferred approach.

Abdominal Chorionic Villus Sampling

This is a very similar procedure to amniocentesis, except that the amniotic sac is not entered. Local anaesthetic is inserted into the skin of the abdominal wall. Under ultrasound control, the developing placenta is identified and a needle is inserted into the wall of the uterus. The same needle is then inserted into the placenta. When the needle is in the placenta, a syringe is attached and a sample of cells is removed by suction.

The Risks

The procedure is associated with a risk of miscarriage of approximately 1/2–1% on top of the usual risk of miscarriage in any pregnancy. Although this is usually a simple test, some women find it uncomfortable and very occasionally, painful. Sometimes more than one attempt may need to be made before suitable tissue is obtained. Occasionally, the procedure is unsuccessful. If this occurs, a further attempt might be made a week or so later or amniocentesis might be necessary.

A few years ago evidence showed that, if CVS is done prior to 9 1/2 weeks, some abnormalities in fetal limb development might rarely occur. Because of this, if there is any doubt about gestation, then the procedure may be deferred until you are definitely more than ten weeks gestation.
Is my partner welcome?

Partners and support persons are very welcome. It is very useful for them to be present at the discussion prior to the procedure. They will also have an opportunity to see the ultrasound scan performed prior to the procedure. If possible please do not bring children as they may become bored and disruptive.

How It Feels

During the transabdominal procedure, you will feel a short, sharp sting when the local anaesthetic is injected to numb your skin. However, there is usually no pain however there can be some discomfort especially if access is not straightforward. You may feel some cramping when the needle is inside your uterus. It is normal to experience mild cramping and some light vaginal spotting for the first day or two following the procedure. Notify your doctor immediately if you develop:

- moderate or severe abdominal pain or cramping
- increasing vaginal bleeding (more than spotting)
- chills or a fever

Results

Results take two to three weeks for chromosome analysis. Once we receive the results we will ring you with the results and we will also write to your doctor to inform him/her of the results. Please note that we will know the sex of your baby from the results so let us know whether you want to know the sex when we contact you. The chances of a confusing result, due to contamination with maternal cells, is slightly higher than with amniocentesis and a further procedure might be required to check the diagnosis in 1% to 2% of cases. Rarely, the cell culture technique fails and no result can be obtained. The procedure can be repeated if this occurs.

Request Form for this Procedure

You will be asked to sign a consent form for this procedure stating that you have read this information and understand it. If you do not understand anything, please discuss this further with the medical staff at the time of your appointment. Please refrain from trying to obtain medical information from administrative staff — it can often lead to more confusion.
Fact Sheet: The use of anti-D in Pregnancy

What are Blood Groups?

All humans have special proteins on the surface of their red blood cells. These proteins (which are called antigens) will cause a specific response if injected into a person who does not possess them.

This response is the production of antibodies which are capable of breaking up the red cells; a process called haemolysis. We say that two people belong to the same Blood Group if they possess the same antigens.

Thus
- people who have the A antigen but not the B antigen belong to blood group A
- people who only have the B antigen belong to group B
- people who have both antigens are group AB and
- people who have neither are group O.

A special D antigen is also called the Rhesus (or Rh) factor. Everyone is either positive or negative for this factor.

Why are Blood Groups important?
If a person (referred to as a recipient) needs to have a blood transfusion then it is important not to give donated blood, which contains antigens that are not present in the recipient. If this should happen, the donated red cells will be broken up (haemolysed) and this reaction can be severe and often fatal. This is why donated blood is cross-matched with the recipient before a transfusion is given.

What is so special about Pregnancy?
Pregnancy is a unique situation because blood from the baby can enter the mother’s circulation. If a woman is carrying a baby who has a different blood group to hers, then any fetal blood that enters her circulation can cause her to make antibodies against the baby’s red cells. She is than said to be sensitised. If those antibodies cross back over into the baby then they can cause the baby’s red cells to break up and this can make the baby very sick. If the reaction is severe then the baby can die of heart failure.

The most common problem is the D antigen. If blood from an Rh(D) positive baby gets into the blood stream of its Rh(D) negative mother, then the mother can make anti-D antibodies which may have serious consequences for the baby.

What can we do to prevent this?
In the vast majority of cases, blood from the baby only reaches the mother’s circulation during childbirth. This does not affect the existing baby because it has already been born. However it can cause problems with the next baby.
In order to prevent an Rh negative mother from making antibodies to the blood of her Rh positive baby we administer anti-D immunoglobulin to the mother. This has the effect of removing the baby’s D antigens and preventing the mother from being exposed to them.

**When is anti-D administered?**

(1) Because 1.5% of Rh negative women become sensitized during pregnancy (even in the absence of bleeding), a preventative dose of anti-D is recommended at 28 weeks and again at 34 weeks of pregnancy.

(2) If an Rh negative pregnant woman has an injury, or any vaginal bleeding or she has a procedure (such as an amniocentesis) a dose of anti-D is usually administered at that time.

(3) When an Rh negative woman gives birth a sample of the baby’s blood is taken from the cord and the Blood Group is determined. If the baby is Rh positive, the mother is given a dose of anti-D.

If the baby is Rh negative, nothing needs to be done.

*Anti D in pregnancy is generally scheduled for administration at Gold Coast Hospital at 28 weeks and during the routine 36 week visit. Some GPs currently administer this to their patients and all are encouraged to do so.*
Fact Sheet: Group B Streptococcus in Pregnancy

What is GBS?

Group B Streptococcus bacteria are found in the genital tract of some women. These women are said to be ‘colonized’ with GBS bacteria. Around 10 to 30% of women in Australia are affected. Normally the bacteria are harmless and these women do not experience any symptoms. They do not need to be treated during pregnancy and GBS is not classed as a sexually transmitted infection. However when pregnant, up to 70% of women who have GBS will pass the bacteria on to their baby during the birth process. For this reason all pregnant women who carry GBS are given antibiotics in labour.

Will GBS affect the baby?

Whilst the bacteria do not affect most babies, about 4 per 1000 babies will become ill with GBS infection. This usually happens within the first 7 days of life. The illness can produce mild to severe problems including infection of the blood and pneumonia. GBS infection can also develop later up to the age of 3 months — this is termed late onset GBS. The most serious problem in late onset GBS infection is meningitis but late onset disease is very rare.

Do I need to be screened?

You only need to be screened for GBS if you have risk factors for having it, or for other obstetric reasons - all women do not need to be routinely screened for GBS. If you do get tested for GBS, this will be done via a swab of the lower part of the vagina and area around the anus. If you are found to have a positive result, this will be recorded in your handheld pregnancy record (orange book).

What if I am GBS positive or have risk factors for GBS?

This does not mean that your baby will get sick, it means that we need to give you antibiotics in labour to protect your baby and then monitor your baby more closely after delivery. If you have a positive result you will be offered antibiotics (through an intravenous drip) when you are in labour. Antibiotics will decrease the chances of your baby becoming ill. The antibiotic normally used in this hospital is Benzylpenicillin, but if you are allergic to Penicillin an alternative can be given. In some situations, antibiotics will be given to women who are at a high risk of passing GBS on to their babies, even if their swab is negative.

These situations are:

- If labour starts before 37 weeks. (Pre-term babies are at a higher risk)
- If the membranes have been ruptured for longer than 18 hours
- If a woman has a temperature higher than 38 degrees in labour (or in the first 24 hours after birth)
- If a woman has ever tested positive for GBS in the current pregnancy
- If a previous baby has been affected by GBS regardless of the result of any swab collected during the current pregnancy.

If you are found to have GBS earlier in your pregnancy, we will not offer you antibiotic treatment at that time. This is because we cannot guarantee that GBS will not grow back before you go into labour. You will only be treated if the GBS is found in your urine. Note that if you go on to have a caesarean section (either emergency or elective) you will not require antibiotics for GBS. However you may need antibiotics for other reasons.

**Treatment for baby**

All newborn babies whose mothers are GBS positive are observed closely for signs of illness, particularly in the first 24 hours. Signs may be unstable temperature, drowsiness and poor feeding. If your baby shows signs of illness, he/she will be tested for GBS infection, may be treated with antibiotics and be under the care of a neonatologist.

| If you are GBS positive, this does not mean that your baby will definitely become ill! |
Fact Sheet: What to Bring to Hospital

To make your stay in hospital more comfortable, this basic list suggests what to pack. You may wish to add more items. The hospital is well heated so bring lightweight clothing only.

Mother Pack
- Casual day clothes, nightwear, a dressing gown and slippers or footwear
- Maternity bras and comfortable underwear
- Four packets of maternity sanitary napkins
- Toiletries (including soap) and tissues
- Plastic bag for your washing or the “extras” you acquire while in hospital
- Two pens
- Phone cards for bedside phones are available from the auxiliary shop in the hospital
- Your Medicare card and any Health Fund cards

For Your Labour
- Your Maternity Record Booklet
- We encourage you to wear comfortable clothes to labour in
- Bring anything with which you feel will be of use e.g., CDs, magazines, camera, favourite pillow, barley sugar, drinks
- Please bring all food/drink required for your partner/support person
- Wheat pack (hot pack) Please discuss with your midwife prior to use in labour
- Refillable water bottle

Baby Pack
- The hospital provides essential baby items, however you are welcome to bring your own baby clothes with you
- Select a “going home” outfit (including nappies and pins/nappy clip) that can be brought into the hospital before your discharge
- The soap/bath solution you plan to use for the baby
- Make sure you have bought/hired and correctly fitted in your car an infant restraint before coming to the hospital.

If you need to hire or have your capsule checked contact:

Kidsafe  www.kidsafeqld.com.au

Queensland Ambulance Service  www.ambulance.qld.gov.au
Fact Sheet: Contraception Following the Birth of Your Baby

Choosing to use a form of contraception following the birth of a baby will be a decision based on many personal considerations. It is important that you spend time talking to your GP about your decision as some forms of contraception may not be suitable for you, due to medical reasons. This sheet is intended to give you some information to consider and you should write down your questions to discuss with your GP when you next visit them.

To make a decision you will need to take into consideration aspects of your history such as what form of contraception you are comfortable with, whether you have had side-effects before, whether you want to have another baby, when you want to have another baby, whether you are breastfeeding and how long you intend to do so. These are just examples of the things you will need to think about.

If you are breastfeeding:

Breastfeeding alone will provide sufficient contraception only if:

- If your baby is less than 16 weeks old
- You are fully breastfeeding
- Your baby does not sleep longer than about 6 hours
- You have not resumed periods

If one or more of these do not apply anymore and you do not want to become pregnant again soon, it is recommended that you add another form of contraception.

Condoms: Condoms are very effective when used, have very few side effects and only have to be used at times of intercourse. The disadvantage is that sometimes people forget to use them especially if they have previously used a hormonal form of contraception and you need to make sure there is a supply. They are very good if you have previously relied on them for contraception and/or wish to only use contraception for a short period of time.

Diaphragms/“caps”: If you have previously used this as your form of contraception you will need to have a new one fitted as the cervix, or the neck of the womb, which is covered by the diaphragm, may well have changed shape or size since the birth of your baby. Your GP or Family Planning Queensland will be able to help.

“The Pill” or the “mini-pill”: If you are breastfeeding, the pill you should take is the ‘mini-pill’ or progesterone only pill. This is different to the normal pill in that it doesn’t contain any oestrogen. While breastfeeding you shouldn’t take any oestrogen as it will be passed through the breast milk to your baby. It also affects breast milk production. If you are breastfeeding, the minipill is just as effective in terms of failure rates, however, you do need to remember to take it at the same time every day. It works by changing the mucus produced by the opening of the womb so that sperm cannot pass through. It also works by stopping the lining of the uterus developing. Some women will get irregular spotting when taking the minipill. It is safe to use when breastfeeding.
**Implanon:** This is a hormone rod that is placed in the arm. It contains the hormone similar to the minipill but is slightly different and works by stopping ovulation. It has a very low failure rate, and will last for up to 3 years. It has to be inserted by your GP, family planning or a specialist gynaecologist. A possible side-effect is irregular bleeding, but it is a good option if you find it difficult to remember to take pills on a regular basis. It is safe to use when breastfeeding.

**Mirena:** This is another form of progesterone only contraception. It works in the same way as the minipill. It is an implant that is placed into the womb. It can last up to 5 years but can be removed at any time. Most women who have had a vaginal birth can have it placed by doctors trained in the insertion in their rooms. It is very easy to remove. It too has the disadvantage of irregular bleeding but most women have very little bleeding at all, about 2 days of spotting per month. It is also a very safe form of contraception with about 3/1000 women failure rate (this is the same as a vasectomy or a tubal ligation) and is completely reversible.

**Temperature charts, rhythm method, billings methods:** These methods are much more difficult to use when you are breastfeeding. Breastfeeding produces different hormones, which affect the changes you are used to seeing in your body, such as temperature rise and mucus production.

**If you are not breastfeeding:** If you have chosen not to breastfeed then it is possible to ovulate within 4 weeks of birth or after stopping breastfeeding. In addition to the options described above you can also use the normal pill or the combined oral contraceptive pill. This is a little more protective against pregnancy than the minipill if you are breastfeeding. You still have to remember to take it every day at the same time.

**Permanent contraception**

In addition to the options described above there are available permanent, non-reversible options available. There is an option for your partner, called a vasectomy, which is available by referral through your GP. The options for you (e.g. tubal ligation) will also require referral to a gynaecologist who can operate at The Gold Coast Hospital. Prior to choosing one of these options, both you and your partner will need to be absolutely sure that you don’t ever want to have another baby. These methods must be considered permanent and irreversible. If you change your mind the reversal is not covered by Medicare and may not succeed.

**Tubal ligation:** This operation requires a general anaesthetic and keyhole surgery to place clips on the tubes that would normally allow the egg to travel to be fertilised. It has a failure rate of about 3/1000.
Essure Tubal occlusion: This operation can be done under local anaesthetic in an operating theatre but also with general anaesthetic. It is done without cuts or incisions and places coils within the tubes, which then grow into the coils to occlude them. It does take about 3 months to have its complete effect.

There are many choices for you and your partner and every person will need to consider what is best for them. This is only a guide and your GP will be able to discuss each method in more detail and with your individual circumstances in mind.

For more information visit Family Planning Queensland website
15. FORMS

This referral template has been installed in the clinical software of most Gold Coast GPs and is available for download for the GPGC website.

REQUEST FOR CONSULTATION

GOLD COAST HOSPITAL

ANTENATAL CLINIC

Dr Anne Sneddon  Dr Derryck Charters  Dr Richard Loong  Dr Tina Fleming
Dr Tania Widmer  Dr Donald Angstetra  Dr Ramesh Vasant  Dr Vanitha Math

<table>
<thead>
<tr>
<th>SEND TO:</th>
<th>FROM: Doctor Name</th>
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<tbody>
<tr>
<td>Dr Anne Sneddon (Director of Obstetrics and Gynaecology)</td>
<td>Practice Name</td>
</tr>
<tr>
<td>GC Hospital Bookings &amp; Referrals Centre</td>
<td>Practice Address</td>
</tr>
<tr>
<td>Fax: 07 56871597 OR</td>
<td>Phone</td>
</tr>
<tr>
<td>Post: Coast University Hospital, 1</td>
<td>Fax:</td>
</tr>
<tr>
<td>Hospital Bldve Parklands</td>
<td>Email:</td>
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<tr>
<td>4216 OR</td>
<td>Provider Number:</td>
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Secure transmission service via Medical Objects, Healthlink or Argus
Signature

NOTE: Patients should only be referred after twelve weeks gestation with a complete set of antenatal bloods and 12 week nuchal translucency scan (unless patient declines the latter)

Date:

Dear Dr Sneddon

RE:

DOB:

Gender:

Medicare Number*: *[Medicare ineligible patients will incur an appointment fee]

Address:

Home Ph:

Mobile Ph:

Alternative Contact Name:

Alt. Contact’s Phone:

[Alternative contact may be used to contact the patient if they cannot be reached via the contact details given]

Interpreter Required Please specify Language:
Reason for Referral:

[Please ensure this information is supplied]

Include as much relevant information as possible about your patient's condition to optimise their chances of being triaged correctly eg diagnosis, duration, severity and impact.

Please indicate the type of care required for this patient.

- Type of Pregnancy Care
- Preferred Outreach Venue

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<th>Relevant Medical and Obstetric History:</th>
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</table>

Relevant Surgical History

Relevant Psychological History:

Allergies:

Current Medications:

PLEASE ENSURE APPROPRIATE PRE-REQUISITE TESTS HAVE BEEN PERFORMED AND ARE ATTACHED. For ALL subsequent tests please cc Antenatal Clinic Gold Coast Hospital.

Tests to be performed on referral
- FBC,
- Blood group,
- antibody screen.
- Rubella,
- hepatitis B and C,
- HIV and syphilis serology

12 weeks (unless woman declines)
- Nuchal translucency scan

Results:
The Genetic Health Queensland Referral Template is available on the GPGC website

REQUEST FOR CONSULTATION
GOLD COAST HOSPITAL
GENETIC HEALTH QUEENSLAND

Dr Julie McGaughran  Dr Michael Gattas  Dr Rachel Susman  Dr Michael Gabbett
Dr John MacMillan  Dr Andreas Zanki

SEND TO:  FROM: Name
Dr Julie McGaughran (Director)  Practice Name
Genetic Health Queensland  Practice Address
Fax: 3636 1987 OR  Phone:
Post: Building C28, Level 4, Back Road,  Fax:
Herston Hospital Complex,
Herston QLD 4029  Email:

OR
Secure Transmission Service via Medical Objects, Healthlink or Argus

to Gold Coast Booking and Referral Centre

IF URGENT YOU CAN PHONE 07 3636 1686 to discuss with the on-call registrar

APPOINTMENTS ARE AT Gold Coast Hospital

THIS REFERRAL IS: URGENT or NON-URGENT

Date:

Dear Dr McGaughran

RE:

Date of Birth:

Gender:

Medicare Number*: *[Medicare ineligible patients will incur an appointment fee]

Address:

Home Ph:
Mobile Ph:

Alt. Contact's Phone/Parent:

[Alternative contact may be used to contact the patient if they cannot be reached via the contact details given]

Interpreter Required: - Please specify Language:

**Reason for Referral:** [Please ensure this information is supplied]

Include as much relevant information as possible about your patient's situation to optimise their chances of being triaged correctly.

Relevant Medical History:

Allergies:

Current Medications:

Results:

<<Summary:Investigation Results (Selected)>>
Edinburgh Postnatal Depression Scale (EPDS)

Please truthfully answer the questions below, by underlining the statement that most applies to you.

In the past 7 days:

1. I have been able to laugh and see the funny side of things
   - 0 As much as I always could
   - 1 Not quite so much now
   - 2 Definitely not so much now
   - 3 Not at all

2. I have looked forward with enjoyment to things
   - 0 As much as I ever did
   - 1 Rather less than I used to
   - 2 Definitely less than I used to
   - 3 Hardly at all

3. I have blamed myself unnecessarily when things went wrong
   - 3 Yes, most of the time
   - 2 Yes, some of the time
   - 1 Not very often
   - 0 No, never

4. I have been anxious or worried for no good reason
   - 0 No, not at all
   - 1 Hardly ever
   - 2 Yes, sometimes
   - 3 Yes, very often

5. I have felt scared or panic for no very good reason
   - 3 Yes, quite a lot
   - 2 Yes, sometimes
   - 1 No, not much
   - 0 No, not at all

6. Things have been getting on top of me
   - 3 Yes, most of the time I haven’t been able to cope at all
   - 2 Yes, sometimes I haven’t been coping as well as usual
   - 1 No, most of the time I have coped quite well
   - 0 No, I have been coping as well as ever

7. I have been so unhappy I have had difficulty sleeping
   - 3 Yes, most of the time
   - 2 Yes, sometimes
   - 1 Not very often
   - 0 No, not at all

8. I have felt sad or miserable
   - 3 Yes, most of the time
   - 2 Yes, quite often
   - 1 Not very often
   - 0 No, not at all

9. I have been so unhappy that I have been crying
   - 3 Yes, most of the time
   - 2 Yes, quite often
   - 1 Only occasionally
   - 0 No, never

10. The thought of harming myself has occurred to me
    - 3 Yes, quite often
    - 2 Sometimes
    - 1 Hardly ever
    - 0 Never