GUIDELINES FOR
GP SHARED MATERNITY CARE

BENDIGO HEALTH

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
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Disclaimer

Bendigo Health (BH) has taken all reasonable care in the preparation of these guidelines for their intended use, which is to facilitate the effective and efficient clinical management of pregnant women, where their management and care is shared between their GP and other health service providers.

Each health service provider involved in shared maternity care of a patient must individually exercise professional judgement at all times in selecting the most appropriate care for a pregnant woman and subsequent management of her pregnancy. These guidelines have been developed to assist these health service providers in the discharge of that duty.

BH has used all reasonable endeavours to ensure that the content of these guidelines was correct at the time they were produced in 2007 and at review in 2013 and again in 2017; however, BH does not warrant that the information contained in the guidelines is in every respect accurate, complete or appropriate for every woman and her pregnancy. The information contained in these guidelines is not intended by BH to represent medical or general health advice.

Acknowledgements

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Revision of these guidelines in 2016 was directed by Christine Keck, Acting Senior Manager Women’s and Children’s Services, Bendigo Health.
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ABBREVIATIONS AND ACRONYMS

- BH – Bendigo Health
- ß-hCG – Beta human chorionic gonadotropin
- BMI – Body mass index
- BP – Blood pressure
- CAT – Crisis Assessment and Treatment
- cm – Centimetre
- CTG – Cardiotocograph
- CVS – Chorionic villus sampling
- DFM – Decreased fetal movement
- DNA – Deoxyribonucleic acid
- dTpa – Diphtheria-tetanus-pertussis acellular (reduced antigen content formulation)
- ECST – Early combined screening test
- EDC – Estimated day of confinement
- FBE – Full blood examination
- FISH – Fluorescent in situ hybridisation
- free ß-hCG – Free beta human chorionic gonadotropin
- g – Grams
- GBS – Group B streptococcus
- GTT – Glucose tolerance test
- GP – General Practitioner
- Hb – Haemoglobin
- HCV – Hepatitis C virus
- HIV – Human immunodeficiency virus
- kg – Kilogram
- LFTs - Liver function tests
- LNMP – Last normal menstrual period
- LUSCS – Lower uterine segment caesarean section
- MAP – Maternity admission appointment
- M&C – Microscopy and culture

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• MBS – Medicare Benefits Schedule
• mcg/day – Micrograms per day
• MCV/MCH – Mean cell volume/mean cell haemoglobin
• MSST – Maternal serum screening test
• mm – Millimetres
• mmHg – Millimetres of mercury
• MMR – Measles, mumps and rubella
• MSU – Midstream urine sample
• M&C&S – Micro and culture and sensitivities
• mU/L – Milliunits per litre
• MO – Medical Officer
• NIPT – Non-invasive prenatal testing
• PKU – Phenylketonuria
• RACGP – The Royal Australian College of General Practitioners
• RANZCOG – The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
• SMCA – Shared Maternity Care Affiliate
• SIDS – Sudden Infant Death Syndrome
• TOP - Termination of pregnancy
• TSH – Thyroid stimulating hormone
• US – Ultrasound
• VBAC – Vaginal birth after caesarean
• VCGS – Victorian Clinical Genetics Services
• VIHSP – Victorian Infant Hearing Screening Program
• VMR – Victorian Maternity Record
• WHC – Women’s Health Clinic
PREFACE

These guidelines have been developed to assist and support accredited GPs who are involved in SMC at BH. The aim of SMC is to provide community based, holistic, safe and culturally appropriate model of care for low risk women throughout their pregnancy. The woman’s labour, birth and immediate postnatal care are managed by the hospital.

BH SMC model is provided by a collaborative group of health professionals including GPs, BH obstetric MOs, BH midwives and BH WHC staff. For SMC to be successful, care providers, both in the community and hospital based, should take a team approach with shared responsibility for all aspects of the woman’s care, including timely and appropriate communication of results and abnormal findings. In some cases the management of an abnormal result will include the cessation of SMC. The GP involved will be notified in this event.
MATERNITY CARE AT BENDIGO HEALTH

Referring women to BH for pregnancy care

To refer a woman to BH for maternity care, the GP should send a referral as soon as possible after an intrauterine pregnancy is confirmed. To ensure all women can access the level of maternity care they require in a timely manner and be contacted about their appointments, GPs should provide as much relevant information as possible as per pregnancy referral template available to be downloaded from Bendigo Health website at http://www.bendigohealth.org.au/World_Class_Healthcare_GP_Liason.asp.

Referrals should be comprehensive and contain:

- Name
- Address
- Date of birth
- Phone number (preferably mobile)
- Country of birth
- Aboriginal or Torres Strait Islander status
- Interpreter and language requirements
- Special needs (e.g. mobility) or additional support requirements
- GP details (practice address and provider number).

Mandatory clinical content includes:

- Estimated day of confinement (EDC or due date)
- Last normal menstrual period (LNMP)
- Relevant history, symptoms, signs, investigation results, medication and management and any reasons that identify the patient as high risk or in need of early hospital assessment.

It is not necessary for a woman to choose a model of maternity care prior to her first hospital visit, although it is helpful if she has discussed her options (including shared maternity care) with her GP.

Referral contact details

Women’s Clinics, Bendigo Health
PO Box 126
Bendigo, 3552
Phone: 5454 7288
Fax: 5454 7286

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
Childbirth education and hospital tours

Bendigo Health has a team of dedicated Midwives, Lactation Consultants, and Physiotherapists who are willing to support women in making the transition to parenthood by sharing their knowledge and expertise. As places are limited, it is generally restricted to primigravida women. Women will be offered childbirth education classes when booking into the hospital.

Women are encouraged to organise childbirth education early in pregnancy. A small cost is involved for those able to afford it. When booking a birthing class, the physiotherapy and breastfeeding classes can also be attended at no extra cost. A free infant massage class is offered to all families after their baby is born.

Women who do not attend childbirth education are welcome to attend a hospital tour to familiarise themselves with the facilities, including where to present when in labour, birth suites, postnatal ward and Special Care Baby Unit. There is no cost or booking required for hospital tours, which take place each Saturday at 2:30 pm. Women should be informed to meet at the lift foyer on level 3 10 minutes prior to the commencement of the tour.

See Appendix 2: Bendigo Health Childbirth and Parenting Education Referral Form
SHARE MATERNITY CARE AFFILIATE (SMCA)

SMCA is a model of care in which the majority of antenatal visits take place in the community with a hospital-accredited GP. Visits also take place at key times at the hospital. The provision of care and support to a woman while she is in labour is undertaken by the hospital. It is not the role of a SMCA to provide care and support once the woman is in labour, during the baby’s birth or in the immediate postnatal period while she is in hospital. This is not covered under the accreditation, roles or responsibilities of a shared maternity care provider. Therefore, the community-based SMCA and hospital-based doctors and midwives act as a team in the provision of a woman’s care.

It is important that both hospital and community providers:

- Are supportive of the shared maternity care model
- Are respectful and supportive in their approach to a woman’s decision to undertake shared care
- Do not attempt to divert a woman into another model of care unless this is medically indicated.

Women who are not strictly low risk may be eligible to undertake a modified form of shared maternity care (called modified shared maternity care). In this case, an individualised care plan will be documented in the Victorian Maternity Record (VMR) by the hospital doctor. The care plan provides information on additional review, care and investigations that are required.

Responsibilities in the provision of shared maternity care

For shared maternity care to work, a team approach between the community and hospital providers is required. Responsibility for a woman’s care is shared, including ordering investigations and the communication and management of investigations, results and any abnormal findings. These should be documented in the Victorian Maternity Record (VMR).

The following obligations form the basis of responsibilities and communication between the SMCA and hospital staff.
It is the responsibility of the hospital to:

− Notify the referring doctor if the woman does not attend her first hospital appointment
− Establish suitability for shared maternity care
− Ensure the woman has a VMR
− Ensure that the woman receives information about her required schedule of visits and tests (for both hospital and the SMCA)
− Ensure that the anticipated hospital appointments are organised for 36/40
− Notify the woman’s SMCA if shared maternity care ceases.

Clinical governance at the hospital includes:

− A list of accredited SMCA’s available on the hospital website
− A robust system for accreditation and reaccreditation of SMCA’s
− Strong clinical governance for shared maternity care
− Referral guidelines and support for SMCA’s.

It is the responsibility of the SMCA to:

− Notify WHC if a woman does not attend her first SMCA visit
− Contact the woman if she does not attend her first scheduled SMCA appointment (if she is known to the practice)
− Notify WHC if a woman has a poor attendance record for her antenatal visits
− Ensure WHC has up-to-date details for the SMCA
− Abide by these guidelines, including when to refer to hospital
− Comply with accreditation/reaccreditation requirements.

It is the responsibility of both the hospital staff and the SMCA to:

− Record pregnancy assessment test results, each visit, findings and management in the VMR
− Review investigations they have ordered in a timely way
− Follow-up abnormal investigations and findings.

It is the responsibility of the woman to:

− Book appointments with the SMCA and the hospital
− Attend her appointments
− Bring her VMR to all appointments.
Accreditation and re-accreditation of SMCA

To maintain accreditation as SMCA’s all affiliates are invited to apply for reaccreditation every 3 years. This falls in line with the Royal Australian College of General Practitioners (RACGP) triennium.

Reaccreditation criteria differ from initial accreditation criteria and for GPs for the 2017–2019 triennium consists of:

− Unrestricted medical registration
− Medical indemnity
− Continuing professional development activities relevant to pre-pregnancy, pregnancy and postpartum care (equivalent to 10 RACGP Quality Improvement and Continuing Professional Development category 2 points – assessed by a hospital medical practitioner) or attendance at an annual shared maternity care workshop held by the Collaborative in the previous triennium
− For GPs first accredited after 1 January 2014, accreditation of their practice sites
− Agreement to undertakings.

BH has an application form for GPs who wish to provide SMC, which can be accessed via BH website. This includes:

− Shared Maternity Care Affiliate Credentialing - NEW APPLICATION
− Shared Maternity Care Affiliate Credentialing - RE-APPLICATION

Support for GPs

A. Victorian Maternity Record (VMR) patient held pregnancy record

The VMR is the patient-held pregnancy record used at BH. If a woman has not had a VMR provided by her GP by the time she attends her first hospital visit, one will be given to her at the hospital.

Each woman enrolled in shared maternity care requires a VMR, and it is essential that this is completed at each visit by the SMCA and the hospital. The woman should be instructed to carry this with her at all times.

All providers need to document their care in the VMR (including any tests ordered and test results) as this is a key method of communication between the SMCA and the hospital. These need to be dated and signed.

The following should be recorded by all health care providers in the VMR:

− Date and gestation
− Blood pressure reading
− Measurement of fundal height in centimetres
− Fetal movements from 20 weeks
− Fetal auscultation with a Doppler from 20 weeks
− Checking fetal presentation from 30 weeks
− Checking oedema if present
− Consider a urine dipstick test for proteinuria
− Tests ordered and results
− Management
− Follow-up appointment

If required, GPs can print consultation notes from their clinical software and attach these to the record. If a woman attends a SMCA or hospital visit without her VMR, the SMCA or hospital should ensure that she leaves with written correspondence that she can attach to her pregnancy record.

In order to expedite the follow-up of results if required, it is useful if the SMCA includes in the VMR the contact details of community ultrasound and pathology providers utilised.

The VMR can be ordered online through the Department of Health and Human Services website. Also see: https://www2.health.vic.gov.au/hospitals-and-health-services/patient-care/perinatal-reproductive/maternity-newborn-services/vic-maternity-record-order-form
Encourage all women to complete the first pages of ‘personal details’ to engage them to use the VMR.

**B. BH Midwife.**

The assessment midwife at BH is a key person for GPs and women to contact for non-urgent enquiries from Monday – Friday 0900-1700:

Phone: 5454 7291 or 5454 7289

Calls outside of these hours should be directed to BH Birth Suite: 5454 8582 or BH registrar 5454 6219

**C. BH Registrar**

The obstetric registrar can be contacted on 5454 6219. If the registrar is unable to take the phone call and the matter is urgent the GP should phone 5454 6000 and ask to be put through to the consultant obstetrician on duty. For non-urgent queries the GP can phone the assessment midwife who will arrange for the registrar to return the call within an appropriate timeframe.

GPs should be aware that after hours obstetric cover in the hospital may be at either resident or registrar level, with a consultant on-call.

**D. Women’s Clinics**

Women’s Clinics is the outpatient department for Obstetric & Gynaecological services at BH providing hospital based midwifery, gynaecology and colposcopy clinics. It functions as the first point of contact for women. A written referral into the service is required.

Phone 54547288.

**Suitability for shared maternity care**

At BH shared maternity care is an option for all women who have been assessed by the hospital as *healthy and with a normal pregnancy and a BMI <35.*

It is the hospital’s responsibility to establish a woman’s suitability for shared maternity care. However, it is valuable if shared maternity care has been discussed prior to referral and a woman’s preference indicated on the referral to the hospital.
Exclusion criteria for routine shared maternity care

**Note:** Underlined / Italic conditions: Women presenting with these conditions in the table below require Obstetric Consultation. Once a management plan is made, if deemed appropriate by Obstetric Team, care can be transferred back to the Midwifery Care Clinic/GP for ongoing care.

Care can be transferred between high risk and low risk clinics as indications for transfer of care arise and / or resolve.

<table>
<thead>
<tr>
<th>Anaesthetic Difficulties</th>
<th>Autoimmune disease</th>
<th>BMI / Maternal weight</th>
<th>Coagulation disorders</th>
<th>Genetic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular disease</td>
<td>Endocrine</td>
<td>BMI &lt;18 and &gt;35</td>
<td>Decline blood products</td>
<td>Any condition</td>
</tr>
<tr>
<td>- Arrhythmia/palpitations; murmurs: recurrent, persistent or associated with other symptoms</td>
<td>- Addison’s Disease, Cushing Disease or other endocrine disorder requiring treatment</td>
<td></td>
<td>- Haemoglobinoopathies</td>
<td></td>
</tr>
<tr>
<td>- Cardiac valve disease</td>
<td>- Diabetes: Type 1, Type 2, GDM</td>
<td></td>
<td>- Haemolytic anaemia</td>
<td></td>
</tr>
<tr>
<td>- Cardiac valve replacement</td>
<td>- Hyperthyroidism</td>
<td></td>
<td>- Other antibodies detected</td>
<td></td>
</tr>
<tr>
<td>- Cardiomyopathy</td>
<td>- <strong>Thyroid disease - New diagnosis or hypothyroidism</strong></td>
<td></td>
<td>- Rhesus antibodies</td>
<td></td>
</tr>
<tr>
<td>- Congenital cardiac disease</td>
<td></td>
<td></td>
<td>- Thalassaemia</td>
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<tr>
<td>- Hypertension</td>
<td></td>
<td></td>
<td>- Thrombophilia including antiphospholipid syndrome</td>
<td></td>
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<tr>
<td>- Ischaemic heart disease</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>- Pulmonary hypertension</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

| Drug dependence         | Gastro-intestinal | | | |
| - Anaemia at booking Hb < 90g/L | - Hepatitis B with positive serology | | | |
| - NAIT                    | - Hepatitis C | | | |
| - ITP                     | - Inflammatory bowel disease includes ulcerative colitis and Chrohn’s disease | | | |
|                           | - Previous major abdominal/pelvic trauma | | | |

<table>
<thead>
<tr>
<th>Haematological</th>
<th>Organ transplants</th>
<th>Perinatal Mental Health</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Anaemia at booking Hb &lt; 90g/L</td>
<td></td>
<td>- Puerperal Psychosis</td>
</tr>
<tr>
<td>- NAIT</td>
<td></td>
<td>- History severe PND</td>
</tr>
<tr>
<td>- ITP</td>
<td></td>
<td>- Bipolar</td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th>Infectious diseases</th>
<th>Neurological</th>
<th>Renal function disorders</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Cytomegalovirus</td>
<td>- AV malformations</td>
<td>- Abnormal renal function</td>
</tr>
<tr>
<td>- HIV infection</td>
<td>- Epilepsy with medication</td>
<td>- Previous urinary tract surgery</td>
</tr>
<tr>
<td>- Parvo virus infection</td>
<td>- Multiple sclerosis</td>
<td>- Recurrent urinary tract infections</td>
</tr>
<tr>
<td>- Rubella</td>
<td>- Muscular dystrophy or myotonic dystrophy</td>
<td>- Abnormal renal function</td>
</tr>
<tr>
<td>- Syphilis</td>
<td>- Myasthenia gravis</td>
<td>- Continence issues</td>
</tr>
<tr>
<td>- Toxoplasmosis</td>
<td>- Spinal cord lesion</td>
<td></td>
</tr>
<tr>
<td>- Tuberculosis</td>
<td>(paraplegia or quadriplegia)</td>
<td></td>
</tr>
<tr>
<td>- Varicella/Zoster</td>
<td>- Subarachnoid haemorrhage, aneurysms.</td>
<td></td>
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<tr>
<td>- Genital Herpes</td>
<td>- Previous CVA</td>
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</tr>
<tr>
<td>- Other infectious disease</td>
<td>- Spinal surgery</td>
<td></td>
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<td></td>
<td>- Brain surgery/brain lesions</td>
<td></td>
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<tr>
<td>Respiratory disease</td>
<td>Skeletal problems</td>
<td>System / connective tissue diseases</td>
</tr>
<tr>
<td>- Asthma requiring oral steroids and</td>
<td>- History of developmental skeletal</td>
<td>- Anti-phosholipid syndrome</td>
</tr>
<tr>
<td>adult hospital admission</td>
<td>disorders</td>
<td>- Marfan syndrome, Raynaud’s disease</td>
</tr>
<tr>
<td>- Severe lung function disorder</td>
<td>- Osteogenesis Imperfecta</td>
<td>- Periarteritis nodosa</td>
</tr>
<tr>
<td>- Sarcoïdosis</td>
<td>- Scoliosis</td>
<td>- Scleroderma</td>
</tr>
<tr>
<td>- Smoking &gt;10/day</td>
<td>- Spinal surgery</td>
<td>- Rheumatoid Arthritis</td>
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<tr>
<td></td>
<td></td>
<td>- Systemic Lupus Erythematosus (SLE)</td>
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<td></td>
<td></td>
<td>- Other connective tissue conditions</td>
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<tr>
<td>Pre-existing gynaecological disorders</td>
<td>Previous maternity history</td>
<td></td>
</tr>
<tr>
<td>- Cervical abnormalities</td>
<td>- Age &gt;40 years</td>
<td></td>
</tr>
<tr>
<td>- Abnormal pap smear results requiring</td>
<td>- ABO incompatibility</td>
<td></td>
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<tr>
<td>follow up in pregnancy</td>
<td>- Active blood incompatibility(Rh, Kell,</td>
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<td>Duffy, Kidd)</td>
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<td>- Cervical surgery including cone</td>
<td>- Auto-immune thrombocytopenia</td>
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<td>biopsy, laser excision or LLETZ biopsy</td>
<td>- Cervical weakness and or cervical suture</td>
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<td>- Fibroids</td>
<td>- Cholestasis</td>
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<td>- Abdominal/Pelvic deformities (trauma,</td>
<td>- Congenital and/or hereditary disorder of</td>
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<td>symphysis rupture)</td>
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<td>- Pelvic floor reconstruction</td>
<td>- Eclampsia</td>
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<td>- Colposuspension following prolapsed,</td>
<td>- Gestational hypertension – previous or</td>
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<td>fistula and/or previous rupture.</td>
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<td>- IVF pregnancy</td>
<td>- Hypertension – previous or current</td>
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<tr>
<td>- Uterine abnormalities</td>
<td>- Grand-multipara ≥ 5</td>
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<td>- Myomectomy</td>
<td>- IUGR &lt;10 percentile</td>
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<td>- Bicornuate uterus, unicorunate uterus</td>
<td>- Macrosomia &gt;4.5kg – previous or current</td>
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<td>- Vaginal septum</td>
<td>- Multiple pregnancyPerinatal death</td>
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<td>- Non-cephalic presentation &gt;34 weeks</td>
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</tbody>
</table>

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Women’s Clinics Fax – 5454 7286

Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
NOTE: All women should be informed that they must book a time with the pathology service to complete their GTT.

Any women with BMI>35 need an early OGTT with Booking antenatal bloods.

**Modified shared maternity care**

Some women may not be suitable for (routine) shared maternity care because they are not low risk, but may be assessed by the hospital doctor as appropriate for modified shared maternity care. In this situation, additional visits, surveillance and investigations may be required with the community and/or hospital provider. In these cases, an individual care plan will be developed by the hospital doctor and documented in the VMR. Some common schedules for modified shared maternity care are outlined below, including responsibilities of the SMCA and hospital.

**Advanced maternal age**

A woman with a maternal age ≥42 years at time of booking requires increased surveillance and additional tests due to an increased risk of age-related fetal abnormalities, gestational diabetes, pregnancy-induced hypertension, growth restriction and late fetal death in utero.

In this case, in addition to the routine requirements:
- An early glucose tolerance test (GTT) should be performed with initial tests (in addition to a 26–28 week GTT) (SMCA responsibility)
- Diagnostic testing for Down syndrome should be discussed (SMCA responsibility)
- More frequent visits are required; e.g. four-weekly until 28 weeks, two-weekly until 36 weeks, weekly until 40 weeks (SMCA responsibility, with hospital providing the recommended schedule)
- A urine dipstick test for proteinuria is required at each visit from 28 weeks (SMCA and hospital responsibility)
- A growth and wellbeing ultrasound may be undertaken at 32–34 weeks (hospital responsibility)
- The 39 week visit is a hospital visit rather than SMCA visit (hospital responsibility)
- Induction of labour at about 40 weeks is considered (hospital responsibility).

Pre-pregnancy BMI >35

A woman with a maternal pre-pregnancy BMI ≥35 requires increased surveillance and additional tests due to an increased risk of folate deficiency, gestational diabetes, pregnancy-induced hypertension, intrauterine growth restriction (IUGR), malpresentation, caesarean section and stillbirth.

In this case, in addition to the routine requirements:
- Recommend high dose folate (5mg/day) from preconception until 12 weeks
- An early glucose tolerance test (GTT) should be performed with initial tests (in addition to a 26–28 week GTT) (SMCA responsibility)
- An anaesthetic review at 34 weeks and dietician review at booking in is undertaken (hospital responsibility)
- More frequent visits are required; e.g. four-weekly until 28 weeks, two-weekly until 36 weeks, weekly until 40 weeks (SMCA responsibility, with hospital providing the recommended schedule)
- A urine dipstick test for proteinuria is performed at each visit from 28 weeks (SMCA and hospital responsibility)
- Serial growth and wellbeing ultrasound is organised at 28 and 34 weeks (hospital responsibility).

Cessation of shared care

In the course of pregnancy, a woman may develop issues that mean she is no longer low risk and therefore requires a change in the model of maternity care and the cessation of shared maternity care.

In some cases, modified shared maternity care may still be appropriate, but this decision will be made and documented after assessment by the hospital doctor.
Shared maternity care is ceased in the following cases:

- Fetal abnormalities
- Gestational diabetes
- Placental problems such as placenta praevia, vasa praevia and placenta accreta
- Antepartum haemorrhage
- Cholestasis
- Fetal growth restriction
- Gestational hypertension or evidence of pre-eclampsia
- The development of exclusion criteria (see above)
- A woman requests cessation.

If these are noted by SMCA’s, appropriate and timely referral to a hospital must be undertaken. It is the hospital’s responsibility to notify SMCA’s of the cessation of shared maternity care or changes to modified shared maternity care and the reasons.
Resources on shared maternity care and referral templates

**Victorian Medical Record:**
Department of Health and Human Services
Includes links on how to order VMR online

**Maternity Services and Models of Care:**
Department of Health and Human Services, Victoria

**Better Health Channel:**

**Shared Maternity Care with Bendigo Health:**

**Maternity Referral Template:**
PRE-PREGNANCY CONSULTATION

Many of the most important maternity interventions that result in improved health outcomes are best initiated prior to conception. These include lifestyle interventions, immunisation, smoking and alcohol cessation, folate and iodine supplementation, and screening of prospective parents for inherited disorders such as cystic fibrosis, haemoglobinopathies and fragile X syndrome (among others).

GPs are in a unique position to see a woman prior to pregnancy and can provide opportunistic pre-pregnancy screening and advice. The aim of the pre-pregnancy consultation is to:

- Provide the optimum situation for conception and pregnancy to occur in order to ensure the health of mother and child
- Identify and manage potential problems for the fetus and mother, based on personal and family history
- Provide education about the health care system and options available
- Develop a rapport with the woman and her family.

Preventive activities before pregnancy

The following information is reproduced from the Guidelines for Preventive Activities in General Practice with permission from the Royal Australian College of General Practitioners.

Every woman aged 15–49 years should be considered for pre-conception care. Pre-conception care is a set of interventions that aim to identify and modify biomedical, behavioural and social risks to a woman’s health or pregnancy outcome through prevention and management. This should include smoking cessation and advice to consider abstinence from alcohol (especially in the early stages of pregnancy), folic acid and iodine supplementation, review of immunisation status, medications and chronic medical conditions, especially glucose control in patients with diabetes.

There is evidence to demonstrate improved birth outcomes with pre-conception healthcare in women with diabetes, phenylketonuria and nutritional deficiency as well as benefit from the use of folate supplementation and a reduction in maternal anxiety. The information below lists all the potential interventions that have been recommended by expert groups in pre-conception care.

What does pre-conception care include?

Medical issues

Reproductive life plan

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Assist your patient in developing a reproductive life plan that includes whether they want to have children. If they do, discuss the number, spacing and timing of intended children.

Reproductive history

Ask if there have been any problems with previous pregnancies such as infant death, fetal loss, birth defects particularly neural tube defects (NTD), low birth weight, pre-term birth, or gestational diabetes. Are there any ongoing risks that could lead to a recurrence in a future pregnancy?

Medical history

Ask if there are any medical conditions that may affect future pregnancies. Are chronic conditions such as diabetes, thyroid disease, hypertension, epilepsy and thrombophilia well managed?

Medication use

Review all current medications, including over-the-counter medications, vitamins and supplements.

Genetic/family history

Assess risk of chromosomal or genetic disorders, (e.g. cystic fibrosis (CF), fragile X, Tay–Sachs disease, thalassaemia, sickle cell anaemia and spinal muscular atrophy), by collection of data on family history and ethnic background. Provide opportunity for carrier screening for these and other more common genetic conditions.

General physical assessment

Conduct a Pap test and breast examinations before pregnancy if indicated or due. Also assess body mass index (BMI), BP and ask about periodontal disease. Encourage weight management / weight loss for those with BMI outside normal range.

Substance use

Ask about tobacco, alcohol and illegal drug use.

Vaccinations

Vaccinations can prevent some infections that may be contracted during pregnancy. If previous vaccination history or infection is uncertain, testing should be undertaken to determine immunity to varicella and rubella. Women receiving live viral vaccines such as MMR and varicella should be advised against becoming pregnant within 28 days of vaccination.
Recommended vaccinations are:

- MMR
- Varicella (in those without a clear history of chickenpox or who are nonimmune on testing)
- Influenza (recommended during pregnancy to protect against infection if in second or third trimester during influenza season)
- Diphtheria, tetanus, pertussis (DTpa) (to protect newborn from pertussis).

*Family planning*

Based on the patient’s reproductive life plan (see above), discuss fertility awareness and how fertility reduces with age, chance of conception, and risk of infertility and fetal abnormality. For patients not planning to become pregnant, discuss effective contraception and emergency contraceptive options.

*Folic acid supplementation*

Women should take a 0.4–0.5 mg supplement of folic acid per day for at least 1 month prior to pregnancy, and for the first 3 months after conception. In women at high risk (i.e. those with a reproductive or family history of NTD, women who have had a previous pregnancy affected by NTD, women on anti-epileptics, and women who have diabetes) the dose should be increased to 5 mg per day.

*Healthy weight, nutrition and exercise*

Discuss weight management and caution against being overweight or underweight. Recommend regular moderate-intensity exercise and assess risk of nutritional deficiencies (e.g. vegan diet, lactose intolerant, calcium or iron and vitamin D deficiency due to lack of sun exposure).

*Psychosocial health*

Provide support and identify coping strategies to improve your patient’s emotional health and wellbeing. Smoking, alcohol and illegal drug cessation (as indicated)

Smoking, illegal drug use and excessive alcohol consumption during pregnancy can have serious consequences for an unborn child and should be stopped prior to conception.

*Healthy environments*

Repeated exposure to hazardous toxins in the household and workplace environment can increase the risk of miscarriage and birth defects. Discuss the avoidance of TORCH
infections: Toxoplasmosis, Other – such as syphilis, varicella, mumps, parvovirus and human immunodeficiency virus (HIV) – Rubella, Cytomegalovirus, Herpes simplex.

− Toxoplasmosis: avoid cat litter, garden soil, raw/undercooked meat and unpasteurised milk products, and wash all fruit and vegetables
− Cytomegalovirus, parvovirus B19 (fifth disease): discuss importance of frequent hand washing, and child and healthcare workers further reducing risk by using gloves when changing nappies.
− Fish: limit fish containing high levels of mercury.

Pre-pregnancy consultation checklist

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<thead>
<tr>
<th>Pre-pregnancy consultation checklist</th>
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<tbody>
<tr>
<td>Medical history</td>
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<td>Reproductive and obstetric history</td>
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<td>Genetic/family history</td>
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<td>Mental health</td>
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<td>Psychosocial history</td>
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<td>Medicine use</td>
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<td>Smoking and alcohol use and cessation</td>
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<td>Substance use and cessation</td>
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<td>Vaccinations</td>
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<td>Folic acid and iodine supplementation</td>
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<td>Healthy weight/nutrition/exercise</td>
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<tr>
<td>Health environment (toxoplasmosis, cytomegalovirus, parvovirus, listeria, fish)</td>
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<tr>
<td>Oral health</td>
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<td>A general physical assessment</td>
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**Investigations**

- Determining immunity (e.g. rubella, varicella if immunity status unknown)
- Screening for anaemia and thalassaemia (e.g. FBE and ferritin).
- Testing for infectious diseases (e.g. HIV, chlamydia, Hepatitis B, Hepatitis C)
- Carrier screening for cystic fibrosis, fragile X syndrome and spinal muscular atrophy *if high-risk population*.
## Resources on pre-pregnancy care

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation web address</th>
<th>Health professional information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Preparing for pregnancy</strong></td>
<td><strong>RACGP</strong></td>
<td>Health professional information: RACGP guidelines for preventative activities in general practice</td>
</tr>
<tr>
<td></td>
<td><strong>RANZCOG</strong></td>
<td>Health professional information: Pre-pregnancy counselling and antenatal screening tests</td>
</tr>
<tr>
<td><strong>Medicines in pregnancy and breastfeeding</strong></td>
<td><strong>Therapeutic Goods Administration</strong></td>
<td>Health professional information: Comprehensive guide with multiple resources including Australian categorisation of risk of drug use in pregnancy and links to state based obstetric drug administration services</td>
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<td><a href="http://www.tga.gov.au/hp/medicinespregnancy.htm#.VDczumeSzHU">www.tga.gov.au/hp/medicinespregnancy.htm#.VDczumeSzHU</a></td>
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<tr>
<td><strong>General</strong></td>
<td><strong>RANZCOG</strong></td>
<td>Clinical guideline: Vitamin and Mineral Supplementation and Pregnancy (2015)</td>
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<td><a href="http://www.ranzcog.edu.au/collegestatements-guidelines.html#obstetrics">www.ranzcog.edu.au/collegestatements-guidelines.html#obstetrics</a></td>
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<td></td>
<td><strong>National Health and Medical Research Council</strong></td>
<td>Health professional information: Iodine supplementation for pregnant and breastfeeding women</td>
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<td><strong>Food Standards Australia New Zealand</strong></td>
<td>Consumer information: Iodine and pregnancy Better Health Channel</td>
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<td><strong>Better Health Channel</strong></td>
<td>Consumer information: Iodine including recommended daily intake during pregnancy</td>
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<td><strong>Iodine</strong></td>
<td><strong>Better Health Channel</strong></td>
<td>Consumer information: Folate for pregnant women</td>
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<tr>
<td></td>
<td><strong>Food Standards Australia New Zealand</strong></td>
<td>Consumer information: Folate and folic acid for pregnant women</td>
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<td>Topic</td>
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<td>Information Note</td>
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<tr>
<td>Drugs</td>
<td>Organizations/Websites</td>
<td>Health professional information</td>
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<tr>
<td>Alcohol</td>
<td><strong>Royal Women’s Hospital: Women’s Alcohol and Drug Service (WADS)</strong>&lt;br&gt;<a href="https://www.thewomens.org.au/health-professionals/maternity/womens-alcohol-and-drug-service/">https://www.thewomens.org.au/health-professionals/maternity/womens-alcohol-and-drug-service/</a></td>
<td>Health professional information: Providing medical care, counselling and support to women with complex substance use, dependence and assessment and care of infants exposed to drugs and alcohol during pregnancy</td>
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<tr>
<td>Other drugs</td>
<td><strong>Mater Mother’s Hospital</strong>&lt;br&gt;brouchures.mater.org.au/Home/Brochures/Mater-Mothers-Hospital/Amphetamine-use-duringpregnancy-and-breastfeeding</td>
<td>Consumer information: Amphetamine use during pregnancy and breastfeeding</td>
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<tr>
<td>Other drugs</td>
<td><strong>Royal Women’s Hospital: Women’s Alcohol and Drug Service (WADS)</strong>&lt;br&gt;<a href="https://www.thewomens.org.au/health-professionals/maternity/womens-alcohol-and-drug-service/">https://www.thewomens.org.au/health-professionals/maternity/womens-alcohol-and-drug-service/</a></td>
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<td>Other drugs</td>
<td><strong>RACGP</strong>&lt;br&gt;www.racgp.org.au/afp/2013/october/opioid-dependence-inpregnancy/</td>
<td>Health professional information: A general practice perspective for managing opioid dependence</td>
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<tr>
<td>Other drugs</td>
<td>American Congress of Obstetricians and Gynaecologists</td>
<td>Health professional information: Marijuana use during pregnancy and lactation</td>
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<td>Cannabis</td>
<td><a href="http://www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Marijuana-Use-During-Pregnancyand-Lactation">www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Marijuana-Use-During-Pregnancyand-Lactation</a></td>
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<tr>
<th>Oral health</th>
<th>Department of Health, Australia</th>
<th>Health professional information: Oral health in antenatal care</th>
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<tr>
<th>Dental Health Services, Victoria</th>
<th>Consumer information: Oral health and pregnancy. Includes how to make a public dental appointment</th>
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<tr>
<th>Better Health Channel</th>
<th>Consumer information: Dental health and pregnancy</th>
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CONFIRMATION OF PREGNANCY

A woman may present to her GP at any stage to confirm she is pregnant. It is best if this is done early in order to facilitate preventive health interventions and offer appropriate counselling for prenatal screening.

In addition to the objectives of the pre-pregnancy consultation, the aims of the early pregnancy consultation are to:

- Confirm pregnancy and woman’s decision
- Organise antenatal investigations
- Discuss genetic testing (including Down syndrome tests) and arrange if appropriate
- Arrange a 19–22 week ultrasound with a community provider. Note radiology provider on BH referral.
- Refer to the hospital upon confirmation of pregnancy (do not wait for test results). Note pathology provider the woman will use on the BH referral.
- Make other referrals as appropriate (e.g. for genetic counselling, mental health team).

The Victorian Maternity Record may be started at this stage.

Early pregnancy investigations

In a general practice setting, an early pregnancy consultation usually occurs at 4–10 weeks gestation. Discussion should include LNMP/EDC; age; medical, reproductive, obstetric and family history (including inheritable conditions); BMI; cervical procedures; mental health; nutrition; smoking, substance and alcohol use; medicine use and social issues.

A comprehensive referral to the hospital should occur as soon as possible to ensure appropriate and timely triage and access to services. A copy of the investigation results should be given to the woman to bring to her first hospital visit or fax to 5454 7286.

Recommended initial investigations include

| blood group and antibody screen | hepatitis B screening for carrier status | rubella antibodies |
| FBE (including mean cell volume/mean cell haemoglobin (MCV/MCH)) | hepatitis C serology | syphilis serology |
| ferritin | HIV serology | Midstream urine (MSU) for GBS, MC&S (microscopy, culture & sensitivity) |
| Vitamin D level |

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Investigations to consider in those with risk factors include

<table>
<thead>
<tr>
<th>dating ultrasound</th>
<th>chlamydia (urine sample or cervical swab)</th>
<th>glucose tolerance test (GTT) or other screen for diabetes</th>
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<tbody>
<tr>
<td>haemoglobin electrophoresis (routine at WH unless a previous test result is available) / DNA analysis for alpha thalassaemia</td>
<td>varicella antibodies</td>
<td>Pap test</td>
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<td>thyroid stimulating hormone (TSH)</td>
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Recommended investigations for fetal abnormalities include:
- a test for Down syndrome – all women, regardless of age, should be offered this, including:
  - combined first trimester screening (10 week serum screen + 12 week ultrasound) – not available at the hospital, OR
  - non-invasive prenatal testing (NIPT) – not available at the hospital, OR
  - second trimester maternal serum screening – available at the hospital
  - diagnostic testing (CVS or amniocentesis) for pregnancies at high risk of aneuploidy
  - 19 to 22 week fetal morphology ultrasound (only available in the hospital in limited circumstances).

Investigations for other inheritable genetic conditions

Tests for other inheritable genetic conditions are ideally done before pregnancy or, otherwise, in early pregnancy.

Investigations to consider for fetal abnormalities include:

Carrier screening

Some population groups should be offered testing for genetic carrier status, including:

- Population groups at higher risk of cystic fibrosis, fragile X or spinal muscular atrophy (for cystic fibrosis this includes either partner from Northern European or Ashkenazi Jewish backgrounds)
- Population groups at higher risk of other genetic diseases where carrier screening is available (e.g. Tay–Sachs disease, thalassaemia, sickle cell anaemia).
- Reproductive genetic carrier screening is also available for couples with no personal or family history of genetic disease, with a number of tests available for varied conditions included. This is at cost to the patient.
Diagnostic testing

In cases of a personal or family history of either partner, other testing may be required. These may include blood tests on either parent or investigations on the fetus (CVS/amniocentesis). In these cases Genetics Services at the hospitals can provide advice to GPs and women, and counselling and testing for women if required. To ensure the provision of timely advice, directly contact the Genetics Services at the hospital the woman has been referred to.

It is the primary responsibility of the provider ordering a test or noting an abnormal finding to ensure appropriate follow-up, communication and management. However, all providers should check that follow-up of any abnormal investigation or finding has occurred.
ANTENATAL VISITS

Shared maternity care schedule of visits: Summary

The following table provides a summary of the minimum routine antenatal visits for shared maternity care. It includes a description of what to consider at each visit.

Although there is considerable alignment between the hospitals, the recommended antenatal schedule and routine investigations vary slightly.

Shared Care providers should use their clinical judgement in determining reviews.

<table>
<thead>
<tr>
<th>Antenatal Care Schedule- (Routine Low Risk)</th>
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<tbody>
<tr>
<td><strong>Antenatal Care Schedule – GP Shared Care Pathway</strong></td>
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<tr>
<td>Women who are deemed to be low risk and will follow the GP shared care Pathway includes all women not excluded by <a href="#">Exclusion Criteria for Routine Shared Maternity Care</a>.</td>
</tr>
</tbody>
</table>

**Standard antenatal check at each visit:**

1. **Review history**
   - Health and well-being – discuss weight gain as per [Pregnancy Weight Matters](#) brochure
   - Ask FV questions if presenting without another adult
   - Review alerts and ensure allergies and alerts including any family violence issues are added on Digital Medical Record (DMR)
   - Results of investigations ordered at last visit
   - Smoking behaviour enquiry and cessation advice and offer healthy lifestyle referral if indicated

2. **Perform Examination**
   - BP
   - FHR
   - S-F height, determine lie and presentation
   - Consider need for FWT

3. **Discuss investigation results**
   - Review results of investigations ordered at last visit
   - Arrange any further investigations as indicated
   - Document investigation results in BOS under investigations

4. **Provide education and information**
   - According to clinical situation and as directed by the woman

6. **Arrange ongoing care**
   - Determine/offer next antenatal appointment

5. **Document in BOS**
   - Complete all relevant fields in BOS
   - Document findings in the patients hand held record (VMR) or print out antenatal events page and replace patients previous copy with updated version

17 weeks Hospital booking in (midwife)

<table>
<thead>
<tr>
<th>Standard antenatal check PLUS:</th>
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<tbody>
<tr>
<td><strong>1. Midwife will review GP referral and take comprehensive history</strong></td>
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<tr>
<td>- EDD calculated according to BH <a href="#">Estimated Due Date Of Confinement</a> protocol</td>
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### Antenatal Care Schedule - (Routine Low Risk)

**booking in)**

- Check screening tests for completeness (Offer any that may have been omitted. See point 3)
- Ensure copy of results is in the digital medical record (DMR)

### In addition to Standard Antenatal Check

**2. Perform examination**

- Maternal weight and height, plot measurements together with the woman on the pregnancy weight matters brochure
- BMI (weight \([\text{kg}]\)/height\([\text{m}]^2\))

### 3. Discuss and offer investigations (utilise the relevant printed information)

<table>
<thead>
<tr>
<th>Blood group and antibody screen</th>
<th>Vitamin D screening (if indicated)</th>
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<tbody>
<tr>
<td>FBE</td>
<td>Diabetes screening:</td>
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<tr>
<td>Ferritin (optional)</td>
<td>• BMI ≥35 order GTT pre -20</td>
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<td>weeks or asap</td>
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</table>

### Screening for infections in pregnancy

- Rubella
- Syphilis/TPHA
- Hepatitis B
- Hepatitis C (must be ordered by GP or BH staff specialist)
- HIV
- Mid-stream urine for GBS, MC+S (microscopy, culture and sensitivity)
- Chlamydia 15-29 years of age OR a recent change in sexual partner

### Ultrasound

- 19-21 week morphology ultrasound (gestational age, fetal number, placental position, and fetal morphology)

### Down Syndrome screening:

- Combined first trimester screening (10 week serum screen + 12 week ultrasound) OR
- Mid-trimester (15 week serum screen)
- First trimester screening must need to be organised through the woman’s local GP.

### 4. Provide Information

- AN booklet
- Other information specific to her needs
- Child Birth Education Classes
- ‘Your baby’s movements’ handout
- Obtain consent to share information from other healthcare providers (as appropriate).
- Lifestyle considerations:
  - Nutrition/diet/healthy weight gain (according to initial BMI) ‘weight matters’ handout
  - Pregnancy multivitamin including folic acid and iodine
## Antenatal Care Schedule - (Routine Low Risk)

<table>
<thead>
<tr>
<th>17 weeks Initial hospital visit (MIDWIFE BOOKING IN)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>In addition to Standard Antenatal Check</td>
<td>supplementation</td>
</tr>
<tr>
<td></td>
<td>• Smoking behaviour/cessation Tick on appt slip 'smoker' to be added to IPM</td>
</tr>
<tr>
<td></td>
<td>• Oral and dental health</td>
</tr>
<tr>
<td></td>
<td>• Recreational drug use and alcohol consumption</td>
</tr>
<tr>
<td></td>
<td>- Psychosocial assessment. Perform the Edinburgh Postpartum Depression Score (EPDS) - only if speaks English</td>
</tr>
<tr>
<td></td>
<td>- Offer Maternity Support, where appropriate. Consider Complex Care Referral. Ask family violence screening questions if patient not presenting without other adult</td>
</tr>
</tbody>
</table>

### 5. Confirm booking
- Complete all relevant fields in BOS. Have woman sign BOS summary.
- Print the woman's booking in summary from BOS and provide a copy in the Digital Medical Record and the VMR. Explain VMR and encourage its use.

### 6. Arrange ongoing care
- Determine/offer appropriate model of care and document on BOS
- High risk women book for medical review in 2 weeks (don’t wait for the 19-20 week visit)

### 7. Staff Specialist Review
- Patient file presented at review meeting with Obstetric Staff Specialist after Booking In appointment and model of care confirmed
- Confirm EDD and Sign BOS Antenatal Booking Summary
- Complete letter to GP (referral acceptance)

### 19-20 weeks GP Checks/tasks in addition to routine antenatal visit

| Discuss and offer additional investigations if indicated |
|---|---|
| FBE | Antibody screen |
| Review 19-21 week morphology ultrasound | GTT give pathology slip and patient handout (patient to complete test at 28 weeks). Inform patient that OGTT appointment needs to be booked by phoning pathology on 54548969 |
| Rhesus D negative • Book 28 week BH assessment clinic appointment | Haemaglobinopathy/thalassaemia screen as indicated |

### Note: Advise the woman to have these tests done a few days prior to the next appointment to ensure results are available for this appointment

### 26 weeks or 28 weeks if having Anti-D GP

| Standard antenatal check PLUS: |
|---|---|
| • Ensure GTT booked/pathology slip given for woman to complete at 28 weeks |
| • Order FBE and antibodies for woman to complete at 28 weeks. Give pathology slip |
| • Check Child Birth Education Classes have been booked |
| • Anti-D prophylaxis (if Rhesus D negative) – attend 28 week BH antenatal assessment clinic appointment (see below) |
| • Discuss limiting sugars and fats for last trimester and getting regular exercise. |
| Antenatal Care Schedule-  
(Routine Low Risk) |
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>30 weeks</strong> GP</td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>34 weeks</strong> GP</td>
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<tr>
<td></td>
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<td></td>
</tr>
<tr>
<td><strong>34 week BH Assessment Clinic Appointment (if Rhesus D Negative)</strong></td>
</tr>
<tr>
<td><strong>36 weeks</strong> Obstetrician at BH</td>
</tr>
<tr>
<td></td>
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<td></td>
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<tr>
<td><strong>38 weeks</strong> GP</td>
</tr>
<tr>
<td></td>
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<tr>
<td></td>
</tr>
<tr>
<td><strong>40 weeks</strong> Medical review in ANC</td>
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<tr>
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</tr>
<tr>
<td><strong>41 weeks</strong></td>
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</tr>
</tbody>
</table>

Women’s Clinics Phone – 5454 7288  
Women’s Clinics Fax – 5454 7286  
Assessment Midwife – 5454 7291  
Obstetric Registrar – 5454 6291  
Birth Suite – 5454 8582
Antenatal Care Schedule - (Routine Low Risk)

<table>
<thead>
<tr>
<th>Medical review in ANC</th>
<th>Prolonged pregnancy management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VE to assess ‘Bishop score’ and consider ‘stretch and sweep’</td>
</tr>
<tr>
<td></td>
<td>CTG second daily from 41 weeks</td>
</tr>
<tr>
<td></td>
<td>AFI twice weekly from 41 weeks (e.g. Mon &amp; Thurs, Tues &amp; Fri or Wed &amp; Sat)</td>
</tr>
<tr>
<td></td>
<td>Provide ‘Induction of labour’ information sheet. Complete consent, place sticker in medical record and discuss with Maternity Ward in-charge midwife with IOL book completed</td>
</tr>
</tbody>
</table>

Standard antenatal consultation and examination

First-trimester visits are primarily to assess maternal and fetal wellbeing. They particularly focus on assessing the risk of complication, but also confirm the EDC, take a comprehensive history and discuss risk behaviours to establish care options.

Second-trimester visits are primarily scheduled to monitor fetal growth, maternal wellbeing and signs of pre-eclampsia.

Third-trimester visits are primarily to monitor fetal growth, maternal wellbeing and signs of pre-eclampsia, and to assess and prepare women for admission, labour, birth and going home.

A standard antenatal consultation and examination is performed at each SMCA and hospital appointment.

SMCA consultation discussion points

Health care providers (both hospital and SMCA) should check that, in addition to maternal concerns, the following information has been discussed with the woman during her pregnancy.

Throughout pregnancy:

- Diet & exercise
- Smoking/alcohol and drug use and cessation if relevant
- Mental health and wellbeing
- Relationships and support networks
- Intimate partner violence
- Breastfeeding
- Pelvic Floor Exercise (resources available on the Continence Foundation Australia website).

Women’s Clinics Phone – 5454 7288  
Women’s Clinics Fax – 5454 7286

Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
Early pregnancy:

- Models of care
- Folate and iodine supplementation
- Medicines (prescription, over-the-counter, vitamins and vitamin A derivatives)
- Influenza vaccination (including partners/caregivers/grandparents)
- Listeria and toxoplasmosis prevention
- Diet, nutrition and weight gain
- Common discomforts in pregnancy
- Anti-D if relevant
- Exercise, work, travel, sex
- Oral health care – 5454 7994
- Expectations for pregnancy/birth.

Later in pregnancy:

- Symptoms/signs of premature labour (discussed at hospital visit)
- Labour and birth, including expectations (discussed at hospital visit)
- Vaginal birth after caesarean (discussed at hospital visit)
- Pertussis immunisation (recommended in each pregnancy, ideally at 28–32 weeks. Also partners/caregivers if > 10 years since immunisation)
- Baby products and safety.

In the final weeks:

- Newborn care
- Baby injections Hepatitis B vaccine and/or Konakion)
- Postpartum maternal immunisations – pertussis and/or MMR if indicated
- Postnatal GP check for mother and baby at 6 weeks
- Community maternal and child health services

Weight gain in pregnancy

Health care providers should discuss weight gain throughout the pregnancy with women. Health care providers should discuss and encourage exercise throughout pregnancy.

Appendix 1: Weight Matters brochure

Expectant mothers and their care providers need to balance the benefits of pregnancy weight gain for the fetus with the risks of too much or too little increase, which can result in consequences for both mothers and children. For mothers, the ramifications of excess weight gain include increased chances of retaining extra kilos after birth, wound
infections, postpartum haemorrhage or needing a Caesarean section; for children the risks include being born preterm or larger than normal with extra fat. Each of these consequences increases the chances for subsequent health problems – such as heart disease and diabetes in the case of extra weight, and impaired development in the case of premature birth. At the same time, adding too few kilos during pregnancy increases risks for stunted fetal growth and preterm delivery.

… To minimize the risks, women should aim to conceive while at a normal BMI and gain weight within the guidelines of the [Weight Matters Brochure](#).

… Helping women achieve these goals will require health care providers to increase the counselling they give their patients on weight, diet, and exercise.

Prenatal care providers and expectant mothers should work together to set pregnancy weight gain goals based on the guidelines and other factors relevant to each patient’s individual needs.

### Expected weight increase per trimester of pregnancy

<table>
<thead>
<tr>
<th></th>
<th>Underweight</th>
<th>Healthy/ Normal weight range</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BMI</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>First Trimester</td>
<td>1 – 3 kg</td>
<td>1 – 3 kg</td>
<td>0 – 1 kg</td>
<td>0 – 1 kg</td>
</tr>
<tr>
<td>Second Trimester</td>
<td>5 – 7 kg</td>
<td>5 – 6 kg</td>
<td>3 – 5 kg</td>
<td>2 – 4 kg</td>
</tr>
<tr>
<td>Third Trimester</td>
<td>6 – 8 kg</td>
<td>5 – 6 kg</td>
<td>4 – 5 kg</td>
<td>3 – 4 kg</td>
</tr>
<tr>
<td>Total in Pregnancy</td>
<td>12 – 18 kg</td>
<td>11 – 16 kg</td>
<td>7 – 11 kg</td>
<td>5 – 9 kg</td>
</tr>
<tr>
<td>Twin Pregnancy</td>
<td>16 – 24 kg</td>
<td>14 – 22 kg</td>
<td>11 – 19 kg</td>
<td></td>
</tr>
</tbody>
</table>

Institute of Medicine Guidelines 2009

Women who are assessed as eligible by the hospital and choose shared maternity care are then registered for shared maternity care. This involves:

- The woman receiving a schedule of visits and tests
- Ensuring the woman has been provided with a VMR
- Ensuring that hospital appointments are made
- A letter of registration, which is sent to the SMCA to inform the SMCA of the woman’s enrolment into shared care (within 72 hours).
- The woman needs to make her own appointments with the SMCA.

If the woman does not attend her first SMCA visit, the SMCA must notify WHC.
ANTENATAL INVESTIGATIONS

This section provides information on routine investigations and commonly considered antenatal investigations. Antenatal investigations and some prenatal investigations (for fetal abnormalities) can be performed either in the community or at the hospital. Considering the time-sensitive nature of some investigations, and the timely intervention for some conditions, it is preferable that investigations are performed by a woman’s GP prior to her first hospital visit.

If a test is performed in the community, a copy of the results (if available) should be included in the VMR and given to the woman to bring to her hospital visits. It is the primary responsibility of the provider ordering a test or noting any abnormal finding to ensure appropriate follow up, communication and management. However, all providers should check that follow up of any abnormal investigation has occurred.

Initial routine investigations

Recommended initial investigations include:

- blood group
- antibody screen
- FBE (including MCV/MCH)
- ferritin
- Hepatitis B screening for carrier status
- Hepatitis C serology
- Syphilis serology
- Rubella antibodies
- HIV serology
- Urinalysis/MSU MC&S & GBS

Investigations to consider include:

- Dating ultrasound
- Haemoglobin electrophoresis (routine at WH unless a previous test result is available) /DNA analysis for alpha thalassaemia
- Varicella antibodies
- Glucose tolerance test (GTT) or other screen for diabetes
- Chlamydia (urine sample or cervical swab)
- Vitamin D level
- Thyroid stimulating hormone (TSH)
- Pap test.
Routine Investigations

Blood Group

If a woman is Rhesus negative and has no Rh antibodies:

- Routine prophylactic anti-D is given at the hospital at 28 and 34 weeks
- Routine prophylactic anti-D is given postnatally at the hospital if the baby is
- Rhesus positive.
- In the event of a sensitising event, refer the woman to Bendigo Health emergency department for Rh D immunoglobulin (anti-D).

Antibody screen

An antibody screen is recommended for every woman in every pregnancy, even if Rhesus positive, as antibodies may develop over time.

FBE and ferritin

A general screen for anaemia, thrombocytopenia, iron deficiency and haemoglobinopathies (e.g. thalassaemia, sickle cell anaemia). A previous normal MCV excludes thalassaemia. If a low haemoglobin/MCV is found, tests and partner testing may be required for haemoglobinopathy. Refer later in this section for further information on haemoglobinopathies.

Hepatitis B screening for carrier status

All women should be offered a screening test for hepatitis B virus early in pregnancy because at-risk screening misses approximately half of hepatitis B carriers. A specialist consultation is generally undertaken at the hospital if a woman has abnormal liver function tests (LFTs), a high viral load or is newly diagnosed. Contact WHC to arrange a specialist consultation if required.

Hepatitis C serology

Hepatitis C serology is performed to determine hepatitis carrier status and is offered routinely at BH. Risk factors include injecting drug use, migration from countries with high rates of endemic hepatitis C virus (HCV), blood transfusion prior to 1990, incarceration, high-risk sexual activity, and HCV-positive sexual partners or household contact. A specialist consultation is generally undertaken at the hospital if a woman has abnormal LFTs, a high viral load or is newly diagnosed.

Syphilis serology

All women should be offered a screening test for syphilis early in pregnancy. Although unusual, it is easily treated. If left untreated, consequences can be devastating.
Rubella antibodies

Testing to check rubella immunity should be undertaken early in pregnancy. Rubella vaccination is a live vaccine, so it cannot be given in pregnancy. Women who are non-immune will be offered immunisation at the hospital post-delivery.

HIV serology

High-level evidence indicates that all women should be offered a screening test for HIV early in pregnancy.

Urinalysis/MSU M&C&S

When asymptomatic bacteriuria is detected it should be treated with a full course of an appropriate and safe antibiotic to improve outcomes with respect to pyelonephritis, preterm birth and low birth weight. A repeat MSU micro and culture should be performed after treatment.

Other initial investigations to consider

Dating ultrasound

A dating ultrasound is performed to establish estimated date of confinement. Optimal timing for most accurate dating is 7–13 weeks so that the crown rump length can be measured; with the most accurate dating being earlier, but when the crown rump length can be measured (as opposed to just a yolk sac measurement).

A dating ultrasound is indicated if:

- Elective lower uterine caesarean section planned and 12-week ultrasound not planned, or
- Dates are unclear.

Tests for haemoglobinopathies: Haemoglobin electrophoresis and DNA analysis

The aim of haemoglobinopathy testing is to identify couples at risk of having a fetus with a major haemoglobinopathy. This includes B thalassaemia major (both parents with B thalassaemia minor or with B/E haemoglobin), Barts hydrops (4 gene alpha haemoglobin deletion – parents have alpha thalassaemia minor with 2 gene deletion) and sickle cell disease (parents heterozygous S and Beta, D or C).
A haemoglobin electrophoresis should be ordered if any of the following apply:

- MCV< 80 or MCH<27 (with no previous normal levels)
- A family history of thalassaemia or haemoglobinopathy
- A partner has thalassaemia or haemoglobinopathy
- The woman or partner is from a high-risk ethnic background (e.g. Mediterranean, Middle East, Africa, Asia, India, Sri Lanka, Pakistan, Bangladesh, Pacific Islands, South America, New Zealand Maori).

Urgent partner screening is essential if a woman has an abnormal haemoglobin electrophoresis or a thalassaemia/haemoglobinopathy cannot be excluded; e.g. haemoglobin electrophoresis can yield a false negative for B thalassaemia if a woman is iron deficient. Therefore, if a woman has iron deficiency anaemia and thalassaemia cannot be excluded, partner screening is recommended.

Partner testing consists of a FBE, haemoglobin electrophoresis and ferritin. A request for blood to be kept for DNA analysis if later required is valuable.

If the partner testing is normal, no further investigation is required. If partner testing is also abnormal, contact the shared maternity care coordinator as soon as possible and provide results in order for appropriate referral to the correct hospital department. At this stage is it useful to request a DNA analysis on the woman and her partner’s blood specimen. To expedite analysis, mark as urgent and state the woman is pregnant.

Varicella antibodies

Determines varicella immunity if the woman has no known immunisation or has a clear history of varicella.

This is a live vaccine, so it should not be given in pregnancy. Non-immune women require immunisation post-delivery with their GP. Two doses are required. Refer to: www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4

Early glucose tolerance test or other screen for diabetes

If a woman has one high risk factor or two moderate risk factors for diabetes (see below), Australian Diabetes in Pregnancy Society (ADIPS) recommends a 75 g GTT with venous plasma samples taken at fasting, 1 hour and 2 hours. The test is performed at the first opportunity after conception. Where this is not feasible, a glycosylated haemoglobin (HbA1c), and fasting or random venous plasma glucose should be measured. No GTT is required if a woman is known to have diabetes.
Women with one moderate risk factor should initially be screened with HbA1c and either a random or a fasting glucose test in early pregnancy, followed by a pregnancy 75g GTT if clinically indicated.

If the result is normal, a GTT is still required at 26–28 weeks (also see later in this section).

**High Risk Factors for GDM**

- Previous GDM
- Previously elevated blood glucose level
- Maternal age ≥40 years
- 1st degree relative with diabetes (e.g. sibling or parent with DM)
- BMI >35 kg/m² (at conception).
- Previous macrosomia baby (birth weight > 4500gms or > 90th centile)
- Polycystic ovarian syndrome or metabolic syndrome
- Medications: corticosteroids, antipsychotics

**Moderate Risk Factors for GDM**

- Ethnicity with a high prevalence of diabetes: Asian, Indian subcontinent, Aboriginal, Torres Strait Islander, Pacific Islander, Maori, Middle Eastern, Non-white African
- BMI 25-35Kg/m² (at conception)

**Chlamydia**

Urine test conducted if the woman has symptoms of chlamydia infection, previous infection or if she is <29 years old.

**Vitamin D**

Vitamin D deficiency is thought to be common among pregnant women, although standards for defining vitamin D deficiency are not well established. Universal supplementation is not currently recommended for pregnant women.

Pregnant women should be tested for vitamin D deficiency early in pregnancy or ideally pre-pregnancy.

Risk factors for vitamin D deficiency in pregnant women include:

- Low levels of sun exposure on skin (especially veiled women, people working in an enclosed environment, taxi drivers and night-shift workers)
- Dark-skinned women
- Obese women: an inverse association exists between obesity and 25(OH) D levels that have been attributed to the storage of vitamin D in fat. The clinical significance of low serum 25(OH) D levels in this group of women is uncertain
• Malabsorption (gastrointestinal absorption problems) and other medical conditions
• Conditions that impair fat absorption are associated with inadequate vitamin D absorption from the gut (e.g. Crohn’s disease, celiac disease, cystic fibrosis)

The Medicare Benefits Schedule (MBS) places restrictions on criteria for Vitamin D testing, with one of the following risk criteria needs to be applicable and included on the pathology form:
• Malabsorption
• Deeply pigmented skin
• Chronic and severe lack of sun exposure for cultural, medical, occupational or residential reasons.

Management of vitamin D deficiency includes:
• Increasing safe sun exposure
• Increasing food intake of vitamin D
• Adequate calcium supplementation
• Vitamin D supplementation
• Considering other family members.

*Thyroid stimulating hormone (TSH)*

Screen for thyroid function with a TSH is indicated if the woman has a history of thyroid disease, autoimmune disease, non-physiological goitre or a strong family history of thyroid disease.

*Pap test*

If due, screening for cervical cancer can generally be undertaken during pregnancy to at least 28 weeks gestation. Do not use a cytobrush.

*CMV and toxoplasmosis serology*

These are not recommended for screening of immunity, as interventions for nonimmune women are not clear. If a practitioner decides to order these to check immunity in high risk women, please only order IgG, and not IgM (as the IgM levels have a high false positive rate).
Second trimester investigations

<table>
<thead>
<tr>
<th>Test</th>
<th>Timing</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTT</td>
<td>26–28 weeks</td>
<td>Ordered by the hospital</td>
</tr>
<tr>
<td>FBE</td>
<td>26–28 weeks</td>
<td>Ordered by the hospital</td>
</tr>
<tr>
<td>Antibody screen</td>
<td>26–28 weeks</td>
<td>Ordered by the hospital</td>
</tr>
</tbody>
</table>

The hospital is responsible for ordering the second trimester investigations. It is important the results are checked and acted upon appropriately by the SMCA, even though they were not ordered by them. The results should be entered into the VMR.

**Glucose Tolerance Test (GTT)**

A GTT of 75 g of glucose is routinely undertaken at 26–28 weeks to screen for gestational diabetes. The woman needs to book an appointment with the hospital pathology service or with a community provider to do the test. The test involves a 12-hour fast, after which fasting plasma glucose is measured then a 75-gram glucose drink taken, and then 1 and 2 hour plasma glucose measured.

The Australasian Diabetes in Pregnancy Society (ADIPS) criteria for diagnosing gestational diabetes is any of:

- Fasting ≥5.1 mmol
- 1 hour ≥10.0 mmol
- 2 hour ≥8.5 mmol

If a SMCA confirms a diagnosis of gestational diabetes they should contact WHC as soon as possible. The shared maternity care coordinator will:

- Make appropriate hospital appointments with the DIP (Diabetes in Pregnancy) clinic.
- Cease shared care (unless a modified arrangement is made between the SMCA and the hospital; if so, ensure this is documented in the VMR).

Management of gestational diabetes is a multidisciplinary task that involves regular monitoring of blood glucose levels, eating a healthy balanced diet, and undertaking regular physical activity and sometimes insulin use. It also requires increased surveillance, blood tests and ultrasounds and may necessitate earlier delivery.

**FBE and ferritin**

A general screen for anaemia, thrombocytopenia and iron deficiency


Antibody screen

An antibody screen is recommended for every woman in the second trimester, even if Rhesus positive, as antibodies may develop over time.

Third trimester investigations

<table>
<thead>
<tr>
<th>Test</th>
<th>Timing</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Screening for Group B streptococcus (GBS)</td>
<td>35–37 weeks</td>
<td>Given to the woman at 34 week appointment for women to take the swab themselves between 35-37 weeks</td>
</tr>
<tr>
<td>Consider: FBE and ferritin</td>
<td>34–37 week</td>
<td>Consider if previous low haemoglobin, low ferritin or clinical indication</td>
</tr>
</tbody>
</table>

Group B streptococcus

If the GBS swab result is positive or a urine test at any stage in pregnancy shows GBS colonisation, but there are no symptoms, antenatal treatment is not required and the hospital will administer intravenous antibiotic treatment (usually penicillin) at the onset of labour. Approximately 25 % of women test positive for group B streptococcus.

Antibiotics during labour decrease the risk of early onset group B streptococcal disease in the newborn from 1 in 200 to 1 in 4,000.

The SMCA should remind a woman with a positive GBS screen result to present to hospital with rupture of membranes and/or in early in labour as it is preferable that antibiotic treatment is administered at least 4 hours prior to the birth of the baby.

Women should be advised on how to collect the swab sample for GBS screening:

1. Remove swab from packaging. Insert swab 2cm into vagina, (front passage). Do not touch cotton end with fingers.
2. Insert the same swab 1cm into anus (back passage).
3. Remove cap from sterile tube.
4. Place swab into tube. Ensure cap fits firmly.
5. Make sure swab container is fully labelled with name, date of birth, date and time of collection. Place swab container into transport bag and return to pathology for testing.
## Resources on antenatal visits, investigations and findings

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation web address</th>
<th>Content summary</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>National Institute for Health and Clinical Excellence (UK) <a href="http://www.nice.org.uk/guidance/ng3">www.nice.org.uk/guidance/ng3</a></td>
<td>Clinical guideline: <em>Diabetes in pregnancy: management of diabetes and its complications from</em></td>
</tr>
<tr>
<td>Topic</td>
<td>Source</td>
<td>Description</td>
</tr>
<tr>
<td>-------</td>
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<tr>
<td>Diabetes in Pregnancy</td>
<td><a href="http://pathways.nice.org.uk/pathways/diabetes-in-pregnancy%20">Preconception to the postnatal period</a></td>
<td>Algorithms on diabetes in pregnancy with links to various aspects of care from gestational diabetes to postnatal diabetes care</td>
</tr>
<tr>
<td></td>
<td>Diabetes Australia <a href="http://www.diabetesvic.org.au">www.diabetesvic.org.au</a></td>
<td>Comprehensive guide for health professionals and consumers: Multiple resources on diabetes, including free booklet and DVD resources</td>
</tr>
<tr>
<td></td>
<td>Bendigo Health Guidelines PROMPT</td>
<td>Clinical guideline: Related to diabetes in pregnancy and labour</td>
</tr>
<tr>
<td></td>
<td>Under Routine Antenatal Care</td>
<td></td>
</tr>
<tr>
<td>Medical History</td>
<td>Department of Health and Human Services, Victoria</td>
<td>Health professionals information: Low vitamin D in Victoria including a section on 25-hydroxy vitamin D testing and treatment</td>
</tr>
<tr>
<td>----------------</td>
<td>--------------------------------------------------</td>
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<tr>
<td>Vitamin D</td>
<td>Department of Health and Human Services, Victoria</td>
<td>Health professionals information: Low vitamin D in Victoria including a section on 25-hydroxy vitamin D testing and treatment</td>
</tr>
<tr>
<td>Medical History</td>
<td>Asthma</td>
<td>Health professional information: Australian Asthma Handbook available for purchase and download</td>
</tr>
<tr>
<td></td>
<td>National Asthma Council Australia</td>
<td>Health professional information: Australian Asthma Handbook available for purchase and download</td>
</tr>
<tr>
<td></td>
<td>Better Health Channel</td>
<td>Consumer information: Managing asthma during pregnancy and breastfeeding</td>
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<tr>
<td></td>
<td>Epilepsy</td>
<td>Health professional and consumer information:</td>
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<tr>
<td></td>
<td>Epilepsy Foundation of Victoria</td>
<td>Health professional and consumer information:</td>
</tr>
<tr>
<td></td>
<td><a href="http://www.epinet.org.au/articles/ndis_-_epilepsy_resources">www.epinet.org.au/articles/ndis_-_epilepsy_resources</a></td>
<td>Health professional and consumer information:</td>
</tr>
<tr>
<td></td>
<td>Better Health Channel</td>
<td>Consumer information: Epilepsy and lifestyle</td>
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<tr>
<td>Topic</td>
<td>Source</td>
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<tr>
<td></td>
<td>Department of Health and Human Services, Victoria</td>
<td>Clinical guideline: Maternity and Newborn Clinical Network Obesity Guideline-August-2011</td>
</tr>
<tr>
<td>Female genital mutilation</td>
<td>The Women's</td>
<td>Health professional information: On services and supports available for women and de-infibulation</td>
</tr>
<tr>
<td>Common concerns in pregnancy</td>
<td>RACGP</td>
<td>Health professional information: Article Does it matter if I’m ‘just’ pregnant? (2010) outlining how medical problems should be managed differently during early pregnancy</td>
</tr>
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<td></td>
<td>Better Health Channel</td>
<td>Consumer information: Provided by the Victorian Government on:</td>
</tr>
<tr>
<td>Category</td>
<td>Resource Details</td>
<td>Description</td>
</tr>
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<tr>
<td>Travel</td>
<td>Travel during pregnancy&lt;br&gt;&lt;br&gt;&lt;a href=&quot;https://www.cdc.gov/travel/yellowbook/2016/advising-travelers-with-specific-needs/pregnanttravelers&quot; target=&quot;_blank&quot;&gt;Centers for Disease Control and Prevention&lt;/a&gt;</td>
<td>Health professional information: Travel during pregnancy</td>
</tr>
<tr>
<td>Incontinence</td>
<td>Continence Foundation of Australia&lt;br&gt;&lt;br&gt;&lt;a href=&quot;http://www.continence.org.au/pages/pregnancy.html&quot; target=&quot;_blank&quot;&gt;Continence Foundation of Australia&lt;/a&gt;</td>
<td>Consumer information: Includes a video link and resources specific to pregnancy related bladder and bowel continence issues</td>
</tr>
<tr>
<td>Neonatal conditions</td>
<td>Department of Health ehandbook&lt;br&gt;&lt;br&gt;&lt;a href=&quot;http://www.health.vic.gov.au/neonatalhandbook/&quot; target=&quot;_blank&quot;&gt;Department of Health ehandbook&lt;/a&gt;</td>
<td>Covers a range of neonatal conditions</td>
</tr>
</tbody>
</table>
RHESUS AND RH D IMMUNOGLOBULIN (ANTI-D)

All Rhesus (D) negative women who with no preformed anti-D antibodies are routinely offered:

**Anti-D at 28 weeks**

This is arranged by the hospital and administered at around 28-weeks in the assessment clinic. There is no antenatal check at this time; the woman is still required to see her SMCA for a check.

**Anti-D at 34 weeks**

This is arranged by the hospital and given in assessment clinic, usually when the woman is attending her 34 week obstetric appointment.

**Anti-D postnatally if baby is Rh (D) positive**

This is arranged by the hospital and occurs within 72 hours postnatally at the hospital.

**Anti-D for sensitising events**

- Unless a woman has already received anti-D for the particular sensitising event, SMCAs should send women to the hospital Emergency Department for anti-D as soon as possible after a sensitising event.

Sensitising events include:

- In the first trimester (<12 weeks) events such as:
  - Ectopic pregnancy
  - Miscarriage
  - Termination of pregnancy (medical or surgical)
  - An invasive prenatal diagnostic procedure (including chorionic villus sampling,
  - amniocentesis and cordocentesis)
  - A curettage
  - An abdominal trauma considered sufficient to cause fetomaternal haemorrhage.
- After the first trimester, in addition to the above, sensitising events include:
  - Obstetric haemorrhage – e.g. vaginal bleeding/antepartum haemorrhage
  - External cephalic version (whether successful or not)
  - Abdominal trauma.

Note: Rh D immunoglobulin is not required in the event of threatened miscarriage in the first trimester (prior to 12 weeks gestation).
For first trimester miscarriage with no instrumentation; there is conflicting evidence as to whether anti-D is indicated, with some services recommending anti-D and others not.

**Resources on prophylactic anti-D**

<table>
<thead>
<tr>
<th>Organisation web address</th>
<th>Content summary</th>
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<tbody>
<tr>
<td>RANZCOG</td>
<td>Clinical guideline: Guidelines for the prophylactic use of Rh (D) immunoglobulin (Anti-D) in obstetrics in Australia (2012)</td>
</tr>
<tr>
<td>Under Red cell Iso-immunisation and Rh(D) prophylaxis</td>
<td></td>
</tr>
<tr>
<td>BH Anti-D - RH (D) Immunoglobulin-VF</td>
<td>Clinical Protocol accessed via PROMPT</td>
</tr>
</tbody>
</table>
INFECTIOUS DISEASES IN PREGNANCY

The Australasian Society of Infectious Diseases Management of Perinatal Infections (2014) is a useful resource that covers the management of 14 common perinatal infections, including CMV, Herpes Simplex, Toxoplasma gondii, Parvovirus, Varicella and Streptococcus Group B www.asid.net.au/documents/item/368

Each hospital has access to physician advice regarding infectious diseases. An infectious disease may be detected prior or after a woman has attended her first hospital appointment.

- For urgent assessment of an infectious illness or exposure to an infectious disease, refer women to the Emergency Department or contact the On Call Registrar for advice. If referring to the Emergency Department, so appropriate arrangements can be made to minimise exposure to others, please call prior to sending the woman in. Email advice from infectious diseases on …
- If a non-urgent infectious disease appointment is required and the woman is registered for shared maternity care, contact WHC and note this in the VMR/referral.
- If a non-urgent infectious disease appointment is required and the woman has not yet been seen at the hospital, please send a comprehensive referral in via the normal referral pathways, clearly stating that the woman is pregnant and what the issues are.
  - Please be clear on the referral if the woman has already been referred for maternity care or if the referral is for both maternity care and infectious diseases referral.

Referral to an Infectious diseases physician at the hospital should occur with:

- Newly diagnosed hepatitis B or C
- Hepatitis B or C with abnormal liver function tests or high viral loads.

If this has not been arranged, SMCA should contact WHC to organise this.

Varicella exposure and infection

If a woman has been exposed to varicella during pregnancy and she is non-immune or of unknown immunity, or if a woman develops varicella in pregnancy, the SMCA should refer to the Emergency Department for specialist advice as soon as possible.

Women may be offered zoster immune globulin (VZIG) and antivirals, especially when delivery is imminent, infection is recent or the woman is systemically unwell. If a woman is thought to be potentially infectious, appropriate arrangements can be made to minimise exposure to others, please call the Emergency Department prior to sending the woman in.
Pregnant women who are not immune are at high risk of severe disease and complications. The Department of Human Services guidelines for the control of infectious diseases states:

**Varicella infection during the first trimester of pregnancy confers a small risk of miscarriage. Maternal infection before 20 weeks may rarely result in the fetal varicella zoster syndrome, with the highest risk (2%) occurring at 13–20 weeks.**

**Clinical manifestations include growth retardation, cutaneous scarring, limb hypoplasia and cortical atrophy of the brain.**

**Intrauterine infection can also result in herpes zoster in infancy. This occurs in less than 2% of infants. The highest risk is associated with infection in late pregnancy. In the third trimester, maternal varicella may precipitate the onset of premature labour.**

**Severe maternal varicella and pneumonia at any stage of pregnancy can cause fetal death.**

**Slapped cheek infection (parvovirus)**

Parvovirus B19 (slapped cheek) infection in the first 20 weeks of pregnancy can cause fetal anaemia with hydrops fetalis. Fetal death occurs in less than ten per cent of cases. Pregnant women who have been exposed to parvovirus infection in the first 20 weeks of pregnancy should be offered serological testing for parvovirus-specific IgG to determine their susceptibility. The diagnosis of parvovirus infection is usually made, serologically, by demonstration of IgG seroconversion and/or the presence of parvovirus IgM. IgM is usually detectable within 1–3 weeks of exposure and lasts for 2–3 months. Repeat testing in 10–14 days may be required.

Women who are diagnosed with parvovirus should be referred to the hospital promptly so that a tertiary ultrasound and obstetric review can be undertaken. This can be facilitated by WHC. If further management is required, including serial ultrasound, this will be arranged by the hospital and shared maternity care is usually ceased.

**Resources on infectious diseases**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation web address</th>
<th>Content summary</th>
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Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
| Medical Journal of Australia | Health professional information:  
| --- | --- |
| General infectious diseases in pregnancy | Better Health Channel | Consumer information:  
By the Victorian Government on a number of pregnancy related topics including: |
| Parvovirus | Department of Health, Australia | Health professional information:  
Parvovirus B19 infection and its significance in pregnancy |
MATERNAL VACCINATIONS

A range of immunity checks and vaccinations are recommended in or before pregnancy. Others are not routinely recommended, but may be considered in high-risk groups or situations and some are contraindicated in pregnancy.

Recommended vaccinations

Rubella (vaccination contraindicated if pregnant)

Rubella immunity should ideally be checked before each pregnancy unless there is known recent adequate immunity. Vaccination and a post-vaccination check should be undertaken pre-pregnancy, with pregnancy avoided for 28 days after vaccination.

Vaccination cannot be undertaken while pregnant because MMR is a live vaccine. If a woman is found to be low in immunity during pregnancy, this should be noted on her VMR, information provided to her on what to do if she is potentially exposed to rubella and she should be administered MMR vaccine in the hospital postpartum period.

Rubella containing vaccines can be given to breastfeeding women.

Varicella (vaccination contraindicated if pregnant)

Varicella immunity should ideally be checked pre-pregnancy if a woman has an uncertain clinical history of varicella infection or vaccination. Vaccination is with two doses, at least four weeks apart, with pregnancy avoided for 28 days after vaccination.

Vaccination cannot be undertaken while pregnant because varicella vaccine is a live vaccine. If a woman is found to be low in immunity during pregnancy, this should be noted on her VMR, information provided on her on what to do if she is potentially exposed to varicella and she should be administered varicella vaccine postpartum. This is undertaken by a woman’s GP (as the hospitals do not vaccinate for varicella postpartum). Varicella containing vaccines can be given to breastfeeding women.

Influenza (annual seasonal)

Influenza vaccination is recommended for pregnant women and is safe to administer during any stage of pregnancy or while breastfeeding.

Pertussis (whooping cough)

Pertussis vaccine is generally administered by the reduced antigen formulation of dTpa vaccine.
Pertussis vaccine is recommended to be given at 28–32 weeks of each pregnancy, even if a recent booster has been given. This 28–32 week window is recommended as it takes 2 weeks after vaccination to make antibody with active placental transfer occurring from 30 weeks gestation. However, if this 28–32 week “window” is missed, pertussis vaccine can be administered at any time during the third trimester up to delivery. Vaccination during pregnancy has the advantage of achieving more timely and high pertussis antibody responses in the mother and infant after birth, as compared with vaccination given postpartum or prior to conception, with studies suggesting a benefit to the fetus as long as vaccine is given more than two weeks prior to delivery.

Side effects appear to be minimal, but it may be beneficial for women receiving a booster to be alerted to the potential for local side effects. There is no recommended minimum time between immunisations but local injection site reactions may be higher in those vaccinated frequently. It is recommended as a single dose.

Adult household contacts and carers of babies (e.g. partners, grandparents) should ideally receive a dTpa vaccine at least two weeks before beginning close contact with the infant if ≥10 years have elapsed since a previous dose.

**Vaccinations not routinely recommended**

Consider if high risk. The following vaccinations are not routinely recommended, but may be considered in high-risk women or situations:

*Hepatitis B*

A check for hepatitis carrier status (Hep BSAg) is a routine first trimester test, however a check for hepatitis immunity (Hep BSAb) is not routine; hepatitis B is an inactivated viral vaccine: ‘Hepatitis B vaccine is not routinely recommended for pregnant or breastfeeding women. However, WHO states that neither pregnancy nor breastfeeding is a contraindication to the use of this vaccine’.

*Hepatitis A*

‘Hepatitis A vaccine is not routinely recommended for pregnant or breastfeeding women, but can be given where vaccination is considered necessary’.

*Typhoid Parental Vi polysaccharide*

‘Parental Vi polysaccharide vaccines are not routinely recommended for pregnant of breastfeeding women, but can be given where vaccination is considered necessary. (Note the oral live attenuated typhoid vaccine is contraindicated in pregnant women)’.
Pneumococcal vaccines

‘Not routinely recommended. Can be given to pregnant women at the highest increased risk of invasive pneumococcal disease’

Meningococcal vaccines (some)

‘Not routinely recommended. Can be given to pregnant women at increased risk of meningococcal disease’

H. influenza type b (Hib)

‘Not routinely recommended. Can be given to pregnant women at increased risk of Hib disease (e.g. with asplenia)’

Injectable polio

‘Not routinely recommended. Can be given to pregnant women at high risk of poliovirus exposure (e.g. travel to endemic countries)’

Rabies

‘Can be given to pregnant women for whom this vaccine would otherwise be recommended (e.g. post-exposure prophylaxis)’

Contraindicated vaccinations

- Measles, Mumps, Rubella (MMR)
- Varicella and zoster vaccines
- Oral (live) typhoid (IPV)
- Rotavirus
- BCG
- HPV
- Japanese encephalitis.

Resources on maternal vaccinations

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation web address</th>
<th>Content summary</th>
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<tbody>
<tr>
<td>Maternal vaccinations</td>
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</table>

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Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582

<table>
<thead>
<tr>
<th>Disease</th>
<th>Source</th>
<th>Health professional information:</th>
<th>Consumer information:</th>
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<tbody>
<tr>
<td><strong>Influenza</strong></td>
<td><strong>Influenza Specialist Group</strong>&lt;br&gt;&lt;br&gt;<a href="http://www.isg.org.au/index.php">www.isg.org.au/index.php</a></td>
<td><strong>Health professional information:</strong>&lt;br&gt;Links to a range of education and resources related to influenza</td>
<td><strong>Consumer information:</strong>&lt;br&gt;<strong>Influenza vaccination 2015</strong>&lt;br&gt;Including 13 in LOTE</td>
</tr>
<tr>
<td>Condition</td>
<td>Resource</td>
<td>Information Type</td>
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<tr>
<td>Varicella</td>
<td>Australian Immunisation Handbook</td>
<td>Health professional information:</td>
<td></td>
</tr>
<tr>
<td>Diphtheria, tetanus and pertussis</td>
<td>Australian Immunisation Handbook</td>
<td>Health professional information:</td>
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</table>
TESTING FOR DOWN SYNDROME AND OTHER FETAL ABNORMALITIES

Most babies are born healthy, but about 4% are born with a birth defect that may require medical care. A number of screening and diagnostic tests are available to determine the risk of, or to diagnose, certain congenital problems in the fetus.

However, tests only have the capacity to screen for and diagnose some congenital problems. If a woman or her partner has a genetic condition, is a carrier or if there has been a previous congenital abnormality/genetic condition in another child, it is important that the couple is referred for genetic counselling. This should be done as early as possible – preferably pre-pregnancy, as it can take considerable time to determine whether or not a prenatal test is available and, if so, to obtain the result.

If a test is performed in the community, a copy of the results (if available) should be given to the woman to bring to her first hospital visit.

**Screening versus diagnostic tests**

Screening tests can be performed to determine the risk of having a baby with Down syndrome, some chromosomal abnormalities and neural tube defects. Screening tests do not diagnose a condition – rather, they determine the level of risk. If screening test results indicate a comparatively high likelihood of a problem, a diagnostic test such as chorionic villus sampling (CVS) or amniocentesis, or in some cases a very sensitive screening test such as a Non Invasive Prenatal Test (NIPT) may be offered.
The following table outlines risk by age of Down syndrome and other chromosomal abnormalities.

<table>
<thead>
<tr>
<th>Maternal age at delivery (years)</th>
<th>Chance of having a live-born baby with Down syndrome*</th>
<th>Chance of having a live-born baby with a chromosomal abnormality</th>
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<tbody>
<tr>
<td>20–24</td>
<td>1 in 1411</td>
<td>1 in 506</td>
</tr>
<tr>
<td>25</td>
<td>1 in 1383</td>
<td>1 in 476</td>
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<tr>
<td>26</td>
<td>1 in 1187</td>
<td>1 in 476</td>
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<td>27</td>
<td>1 in 1235</td>
<td>1 in 455</td>
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<td>29</td>
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<td>30</td>
<td>1 in 959</td>
<td>1 in 385</td>
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<td>31</td>
<td>1 in 837</td>
<td>1 in 385</td>
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<td>32</td>
<td>1 in 695</td>
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<td>1 in 24</td>
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<tr>
<td>45</td>
<td>1 in 32</td>
<td>1 in 19</td>
</tr>
</tbody>
</table>

* Risks of at the time of screening are higher

Tests for Down syndrome and other aneuploidies

Although a woman’s likelihood of having a fetus with Down syndrome (Trisomy 21), and some other chromosomal abnormalities such as Edward syndrome (Trisomy 18), and Patau syndrome (Trisomy 13) increases with age, a woman of any age can have a baby with aneuploidy and all women, regardless of age, should be offered a test for Down syndrome.

If a woman decides to undertake testing for Down syndrome, several options are available. These include:

- combined first trimester screening – not available at the hospital, or
- non-invasive prenatal testing (NIPT) – not available at the hospital, or
- second trimester maternal serum screening – available at the hospital
- diagnostic testing (amniocentesis or CVS) – available at the hospital if high risk

These tests vary in terms of timing, mechanisms, cost, sensitivity, specificity and availability at the hospitals.

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It is important that women receive adequate counselling and that the results and management are documented, communicated and followed up adequately.

Follow-up and management of investigation results for fetal abnormalities require particular vigilance from both community and hospital providers. This is especially important as the tests may require coordination of different components: the hospital visit may not occur for some time and further tests and management may be time sensitive.

**Non-invasive prenatal testing (NIPT)**

These are a group of maternal blood tests based on cell-free DNA technology.

They are also referred to as non-invasive prenatal screening (NIPS) and cell-free DNA testing. They are available from about 10 weeks gestation and test for Down syndrome, Edward syndrome, Patau syndrome and some other chromosomal abnormalities.

The detection rate (sensitivity) is very high, at approximately 99% for Down syndrome (T21), 97% for Edward syndrome (T18) and 92% for Patau syndrome (T13), with low false positive rates that vary between different tests and for different aneuploidies. In about 5% of cases, a meaningful result is not achievable.

The NIPT test is not available at the hospital and a cost is associated. The test is available at VCGS and increasingly available at private pathology and specialist obstetric ultrasound providers.

If a NIPT test is performed without a 12-week fetal ultrasound, some providers also routinely order a 12-week ultrasound to screen for non-aneuploidy abnormalities; however, this varies amongst providers. In view of its high sensitivity and no risk of miscarriage, women may choose a NIPT over a diagnostic test such as CVS or amniocentesis, if they are high risk on a screening test or are of advanced maternal age.

If a test indicating aneuploidy is obtained, CVS or amniocentesis should be offered to confirm the diagnosis before any intervention is undertaken.

Further information can be found on the Victorian Clinical Genetics Services (VCGS) website.

Also see: [www.vcgs.org.au](http://www.vcgs.org.au)
Combined first trimester screening

Combined first trimester screening tests for Down syndrome, Edward syndrome and Patau syndrome. It involves both a maternal blood test (ideally conducted between 9 and 10 weeks – but can be done from 9 weeks to 13 weeks and 6 days) and ultrasound (ideally done in the 12th week, but can be done from 11 weeks to 13 weeks and 6 days). This test calculates risk from maternal free beta human chorionic gonadotrophin (free ß-hCG) and pregnancy associated plasma protein-A (PAPP-A), maternal age and nuchal translucency measurement.

Its detection rate (sensitivity) for Down syndrome is 90%, the false positive rate is approx. 5%, with a high-risk result reported at ≥1 in 300. The detection rate for Edward and Patau syndrome is approx. 70%, the false positive rate is 0.4%, with a high-risk result reported at ≥1 in 175.

This test is not available at the hospital.

As the combined first trimester screen requires coordination of the blood and ultrasound components to generate a result, this means that ultrasound findings need to be provided by the ultrasound service to the Victorian Clinical Genetics Service (which is the maternal serum screening laboratory) to generate a result.

Results are generally available within seven days of the laboratory receiving the nuchal translucency report. A Medicare rebate is available for blood tests and ultrasounds.

Some out-of-pocket expenses may occur. Individual ultrasound services should be contacted about costs and in order to reduce the costs of the blood component, the SMCA should indicate on pathology forms that the woman is a public patient.

In the event of any concerns or abnormal results, Genetics Services at the hospital can be contacted to provide further advice and support.

Second trimester maternal serum screening

Second trimester maternal serum screening tests for Down syndrome, Edward syndrome and neural tube defects. This test calculates risk from maternal alpha fetoprotein (AFP), free beta human chorionic gonadotrophin (free ß-hCG), unconjugated oestriol (uE3) and Inhibin A and maternal age. Detection rates are approx. 70% for Down syndrome and 90% for neural tube defects. A high risk result is reported at ≥1 in 250 for Down syndrome and ≥1 in 200 for Edward syndrome.

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The test is ideally performed at about 15 weeks gestation (although it can be done from 14–20 weeks). Results are generally available within seven days. This is the screening test for Down syndrome that is routinely available at the hospitals, if the woman’s first hospital appointment occurs at less than 20 weeks gestation and she has not already had a test for aneuploidy.

### Diagnostic tests for chromosomal abnormalities

Diagnostic tests such as CVS or amniocentesis should be considered/offered if:

- screening shows increased risk of chromosome abnormality (e.g. Down syndrome)
- maternal age is ≥37 years at expected date of confinement
- there is parental translocation
- there is previous trisomy
- there are major anomalies on ultrasound or
- the nuchal translucency is >3.5mm at ultrasound at 11-13 weeks
- there are previous neural tube defects (diagnostic method of choice is specialised obstetric ultrasound)
- there is a concern about disorders detected by DNA technology (e.g. Duchenne and Becker muscular dystrophy, myotonic dystrophy, fragile X, haemoglobinopathies, alpha and beta thalassaemia, sickle cell disease, haemophilia A or B, cystic fibrosis, Tay–Sachs disease, neurological diseases such as spinal muscular atrophy or Huntington’s disease).

There are many inborn errors of metabolism diagnosable prenatally by CVS or amniocentesis, but an exact biochemical diagnosis is needed in the index case before such a prenatal test can be considered.

If a woman later requests a TOP, the choice between a CVS and amniocentesis has implications on options for the method of termination of pregnancy (TOP). This is because an amniocentesis is performed at a later gestation than a CVS and therefore the results may not be available in time for a surgical TOP to be an option (as surgical TOPs are usually only available up to approximately 18 weeks gestation).

### Chorionic villus sampling (CVS)

A CVS diagnostic test can be performed at 10–14 weeks. If there is an indication for testing, this can be undertaken at the hospital and there are no out-of-pocket costs.

The test involves approx. 1% additional risk of miscarriage (in addition to the risk of miscarriage for all pregnancies). CVS also has a 1% risk of equivocal result (e.g. the risk of mosaicism – the presence of a mixture of cells with normal and abnormal karyotype – or maternal cell contamination of the sample). Results are generally available within two weeks.

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Amniocentesis

An amniocentesis is usually performed at 15–18 weeks. If there is an indication for testing, this can be undertaken at the Royal Women’s Hospital and there are no out-of-pocket costs.

The test involves approx. a 0.5% additional risk of miscarriage (in addition to the risk of miscarriage for all pregnancies). Results are generally available within two weeks.

Fluorescent in situ hybridisation analysis

A fluorescent in situ hybridisation (FISH) analysis is an additional test that can be performed on the sample obtained at the CVS or amniocentesis in order to obtain an earlier preliminary result. FISH analysis gives a preliminary result in 48–72 hours but does not replace complete chromosomal analysis. FISH analysis has a cost involved and no Medicare rebate is available. If a test indicating aneuploidy is obtained, full results should be awaited to confirm the diagnosis before any intervention is undertaken.

Arranging CVS or amniocentesis

At BH, SMCA should refer women directly to the Royal Women’s Maternal Fetal Medicine Unit/Genetic Services (email fmu@thewomen’s.org.au) or Western Health Maternal Fetal Medicine Unit and Genetics (see contact details page 75), who arrange counselling and testing.

Tests for other inheritable genetic conditions

Tests for other inheritable genetic conditions are ideally done before pregnancy or if this window has been missed, in early pregnancy.

Population-based carrier screening

This is referred to as ‘Reproductive genetic carrier screening’ and is available for couples with no personal or family history of genetic disease at a cost to the patient.

A number of tests with varied conditions included are available. They are not available at the hospitals.
Reproductive genetic carrier screening is an option for:

- couples with no known personal or family history of cystic fibrosis, fragile X or spinal muscular atrophy but who are from a population group with an increased risk. Population groups at increased risk include northern European, Ashkenazi Jewish background and consanguineous couples (cousins married to each other)
- couples with no increased risk who wish to be screened for cystic fibrosis, Fragile X or spinal muscular atrophy
- population groups at higher risk of other genetic diseases where carrier screening is available (e.g. Tay–Sachs disease, haemoglobinopathies).

Reproductive genetic carrier screening is a blood test that can be taken at any pathology service, with results available in approximately 10 working days. There is a cost involved (no Medicare rebate is available).

If either parent is identified as a carrier, immediate follow up is required, especially if the woman is pregnant. Refer directly to the Genetics Services of the hospital the woman is booked into care with.

Information brochures and request forms are available on the Victorian Clinical Genetics Service website. Also see: www.vcgs.org.au

Diagnostic testing

Diagnostic testing identifies particular gene alterations. The gene alterations of a vast array of inheritable genetic conditions can be tested, although not all inheritable problems can be tested for.

A personal or family history of inheritable genetic conditions of either partner may require counselling and potential testing. Testing may involve blood tests for either parent or tests on the fetus (CVS/amniocentesis). Depending on the gene alteration being sought, it can take several months for results to be available. A cost may be involved.

For diagnostic testing as above:

- Genetics Services at the hospitals can provide advice to GPs and women, and counselling and testing for women if required
Genetic counselling

Health care providers are encouraged to offer early advice and counselling regarding all tests offered. This is especially pertinent for screening and diagnostic tests for fetal abnormalities. All couples should be given the opportunity to consider these tests.

The SMCA should discuss the available routine tests, the nature of the tests, the conditions being tested for, the possibility of false positive and false negative results, and the advantages and disadvantages of testing (taking into account maternal age and medical, pregnancy and family history). Wherever possible, women should be offered written material in their spoken language, including information about local services and costs involved.

Counselling through genetic services may be required:

- if a woman is unsure about whether to undertake diagnostic testing (or if a woman would like to undertake CVS or amniocentesis)
- if a woman or her partner has a genetic condition or a family history of a genetic condition that they wish to find out more about (including testing and the possible implications); this is best done pre-pregnancy
- if a woman has a high-risk screening result, or if a couple with a high risk of having a child with a genetic condition, wishes to discuss prenatal testing, (including diagnostic testing), or if a health care provider requires secondary advice.

Genetics Services at the hospitals provide advice to GPs and women, and counselling, testing and referral for women and their partners either pre-pregnancy or during pregnancy. Genetics Services work closely with obstetric services including fetal management units), ultrasound departments and Victorian Clinical Genetics Services.

Generally, women must be booked for care at the hospitals or be eligible for such (if pre-pregnancy), but requirements for access vary.

Fetal morphology ultrasound

All women should be offered a fetal morphology ultrasound at 19–22 weeks.

The fetal morphology ultrasound can detect some structural abnormalities such as neural tube, cardiac, gastrointestinal, limb and central nervous system defects. It also confirms the accuracy of the expected date of confinement, locates the placenta, and may measure cervical length (normal length >25

To expedite the hospital follow up of results if required, the SMCA should include in the VMR the contact details of the community ultrasound and pathology provider
mm), and check the ovaries and uterus for abnormalities. It is a poor screening test for Down syndrome, with a sensitivity of approximately 50%.

At the hospitals, ultrasound department capacity is limited with hospital ultrasounds allocated according to clinical and social need. Routine fetal morphology ultrasound is only offered to women with high-risk pregnancies or in social need, based on the information provided in the GP’s initial referral to hospital for pregnancy care.

Women considered high risk generally include women who: are <19 years or ≥39 years of age; have a BMI ≥35; have diabetes, epilepsy or other serious medical conditions; have had ≥2 previous caesarean sections; have had a previous fetal abnormality or a disabled child; who have markers or are suspected of being high risk on earlier ultrasound (with some variation between hospitals of these criteria).

If a woman does not have a fetal morphology ultrasound organised by her first hospital visit – either in the community or at the hospital – she will be advised to make an appointment with her GP to organise a community referral.

*To expedite follow up of results, the SMCA should note in the VMR the ultrasound and pathology provider from which the tests were ordered.*

**Fetal maternal management service**

If a fetal abnormality is detected on ultrasound, Genetics services can be contacted for referral or advice. This can be done directly or through Women’s Clinics. If urgent or semi-urgent referral is required, it is best to contact the below services directly. These services work closely with genetics services, ultrasound and other obstetric services and are able to arrange counselling if a termination is being considered.

**Hospital Genetics Service contact details**

<table>
<thead>
<tr>
<th>Mercy Hospital for Women</th>
<th>Werribee Mercy Hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone: 8458 4250</td>
<td>Phone: 8754 3448</td>
</tr>
<tr>
<td>Fax: 8458 4254</td>
<td>(direct line to On-Call Obstetrician). The SMCA should contact the On-Call Obstetrician, who will discuss the referral with the SMCA and then refer to Western Health (which provides genetics services for WMH).</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>The Women’s (Parkville)</th>
<th>Western Health (Maternal Fetal Medicine Unit and Genetics)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone: 8345 2180</td>
<td>Phone: 8345 1811</td>
</tr>
<tr>
<td>Phone GP quick access: 8345 2058</td>
<td>Fax: 8345 0700</td>
</tr>
<tr>
<td>Fax: 8345 2179</td>
<td></td>
</tr>
<tr>
<td>Email: <a href="mailto:fmu@thewomens.org.au">fmu@thewomens.org.au</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Women’s Clinics</th>
<th>Assessment Midwife – 5454 7291</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phone: 5454 7288</td>
<td>Obstetric Registrar – 5454 6291</td>
</tr>
<tr>
<td>Women’s Clinics Fax – 5454 7286</td>
<td>Birth Suite – 5454 8582</td>
</tr>
<tr>
<td>Topic</td>
<td>Organisation/Web address</td>
</tr>
<tr>
<td>-------</td>
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</tr>
<tr>
<td></td>
<td>Victorian Clinical Genetics Services (VCGS) <a href="http://www.vcgs.org.au">www.vcgs.org.au</a></td>
</tr>
</tbody>
</table>

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
### Aneuploidy screening tests

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Health professional information</th>
<th>Consumer information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal serum screening</td>
<td>Maternal serum screening test</td>
<td>Maternal serum screening test</td>
</tr>
<tr>
<td>Combined first trimester screening</td>
<td>VCGS Pathology form for combined trimester screening</td>
<td>Prenatal testing, including combined first trimester Screening, 2\textsuperscript{nd} trimester maternal Serum screening, CVS, amniocentesis and ultrasound</td>
</tr>
<tr>
<td>Non-invasive prenatal test (NIPT)</td>
<td>RANZCOG communique on (NIPT) for Fetal Aneuploidy- reflects emerging clinical and scientific advances (April 2015)</td>
<td>Prenatal screening and diagnosis of chromosomal and genetic abnormalities in the fetus</td>
</tr>
</tbody>
</table>

### Additional Resources

- **Victorian Clinical Genetics Services (VCGS)**
  - Health professional and consumer information: Precept NIPT

- **Healthscope Pathology**
  - Health professional and consumer information: Harmony NIPT

- **Melbourne IVF**
  - Health professional and consumer information: Panorama NIPT
<table>
<thead>
<tr>
<th>Test Type</th>
<th>Information Source</th>
<th>Professional Information</th>
<th>Consumer Information</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Aneuploidy diagnostic tests</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amniocentesis</td>
<td>The Royal Australian and New Zealand College of Radiologists</td>
<td>Comprehensive guide with multiple resources related to amniocentesis</td>
<td>Consumer information: Amniocentesis</td>
</tr>
<tr>
<td>Chorionic villus sampling (CVS)</td>
<td>The Royal Australian and New Zealand College of Radiologists</td>
<td>Comprehensive guide with multiple resources related to CVS</td>
<td>Consumer information: CVS</td>
</tr>
<tr>
<td><strong>Tests for other genetic disorders</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cystic fibrosis</td>
<td>Cystic Fibrosis Victoria</td>
<td>Comprehensive guide with multiple resources related to cystic fibrosis including carrier testing</td>
<td></td>
</tr>
<tr>
<td>Fragile X</td>
<td>Fragile X Association of Australia</td>
<td></td>
<td>Consumer information: Fragile X with links to services and support groups</td>
</tr>
<tr>
<td>Condition</td>
<td>Organization</td>
<td>Health Professional Information:</td>
<td></td>
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</tr>
<tr>
<td>Thalassaemia</td>
<td>Thalassemia Australia</td>
<td>Health professional information: Haemoglobinopathy carrier screening recommendations</td>
<td></td>
</tr>
<tr>
<td>About Down syndrome and other aneuploidies</td>
<td>Down Syndrome Australia</td>
<td>Health professional and consumer information: Comprehensive site with multiple resources and contacts</td>
<td></td>
</tr>
<tr>
<td>Edward syndrome (Trisomy 18)</td>
<td>Centre for Genetics Education</td>
<td>Health professional information: Edward syndrome</td>
<td></td>
</tr>
<tr>
<td>Ultrasound</td>
<td>The Women’s</td>
<td>Consumer information: Ultrasound use in pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Better Health Channel</td>
<td>Consumer information: Ultrasound in pregnancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Center Australian Medical Advisory Board</td>
<td>Consumer information: Ultrasound variants in pregnancy</td>
<td></td>
</tr>
</tbody>
</table>
MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: HOSPITAL SUPPORT SERVICES

All providers of shared maternity care have a responsibility to appropriately assess, document and respond to problems that arise during a woman’s pregnancy.

For non-urgent queries and situations, during business hours, the SMCA can contact WHC who can assist in obtaining results, organising non-urgent follow-up appointments at the hospital and informing the SMCA of hospital care. If more urgent assessment, care or referral is required, contact the Emergency Department or the on-call obstetric registrar. All providers should check that follow-up of any incomplete or abnormal investigation findings occurs.

**Women’s antenatal assessment clinic**

Assessment Clinic provides obstetric and midwifery investigations, monitoring and management of maternal and fetal assessment issues >20/40 weeks including:

- small for dates, poor interval growth or fetal growth restriction
- decreased fetal movements
- non-cephalic presentation at ≥36 weeks
- prolonged pregnancy (post-dates)
- hyperemesis gravidarum
- concerns about cholestasis (jaundice and/or severe pruritis)
- Cardiotocograph (CTG) monitoring
- Anti-D administration
- Pre-eclampsia (PE) blood pressure monitoring, blood and urine collection for pathology.
- Hypertension (i.e. a persistent reading ≥140/90 mmHg or a rise of ≥ 30 mmHg systolic and 15 mmHg diastolic from baseline
- Administration of Iron Injections
- Review of Obstetric Ultrasounds

The above list is not exhaustive and the pregnancy assessment services do not replace referral to the hospital Emergency Department for urgent problems. The SMCA is encouraged to phone the service prior to sending a woman in to discuss the concerns with a senior midwife. The outcome of each visit will be documented in the VMR.

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
Assessment Clinic contact details and operating hours

SMCA’s can refer a woman directly to assessment clinic. SMCA should detail concerns in the VMR for the woman to take with her and should also phone the service prior to her arrival.

Phone: 5454 7291

Monday – Friday: 9.00 am – 5.00 pm

Birthing Suite

The Birthing Suite is available 24 hours a day for assessment of urgent antenatal problems for women greater than 20 weeks. Phone advice is also available 24 hours a day for SMCA’s and GP’s. Referral by phone or letter is appreciated. Presentation to the Maternity Unit will be documented in the woman’s VMR. The SMCA will also receive correspondence within 48 hours of the woman’s presentation.

Referral to the hospital Birthing Suite is recommended if the woman has:

- threatened preterm labour (≤37 weeks)
- undiagnosed abdominal pain
- preterm and/or pre-labour rupture of membranes
- antepartum haemorrhage
- unusual migraines/visual disturbances
- regularly contracting and thought to be in labour
- seizures
- a requirement for anti-D immunoglobulin following a sensitising event
- problems usually seen in the Assessment Clinic if after hours.

*The above list is not exhaustive*

Birthing Suite Contact Details

Phone: 5454 8582

Women’s Ward Contact Details

Phone: 5454 8613
Obstetric registrar/On-call obstetrician/staff specialist

The on-call obstetric registrar can be contacted 24 hours a day to discuss urgent or complex clinical issues.

To contact the registrar via phone 5454 6219

Women’s Clinics

Women’s Clinics will respond to issues that may arise and ensures that non-urgent queries from SMCA’s are dealt with in a timely manner.

Women’s Clinics will:

- Organise routine hospital appointments
- Organise extra appointments for additional non-urgent clinical consultation with, for example, obstetric doctors/allied health/psychiatry/genetics/physicians
- Organise hospital follow up for gestational diabetes
- Obtain investigation results
- Change shared maternity care providers (if requested by the woman)
- Notifying SMCA’s of cessation of shared maternity care.

Women’s Clinics may also be able to assist with:

- Non-urgent reassessment, review and advice of community ultrasound results and other pathology results by the relevant department
- Arrange CVS/amniocentesis for women booked for care at the hospital.

Women’s Clinics contact details

Phone: 5454 7288 Fax: 5454 7286

Emergency Department

The Emergency Department is available 24 hours a day for assessment of urgent antenatal (<20 weeks gestation) or postnatal problems.

Referral to the hospital Emergency Department is recommended if the woman has:

- First trimester bleeding or pain that cannot be appropriately diagnosed and managed in the community.

Emergency Department contact details

Phone: 5454 8100 Triage: 5454 8102
MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS:

Abnormality on ultrasound

For non-urgent situations, Women’s Clinics can assist in organising follow-up or advice of an abnormal ultrasound finding. This includes:

- when a SMCA is unsure of the interpretation of findings from an ultrasound
- if a tertiary ultrasound is required
- if further counselling or consultation is required.

WHC will require the patient information and ultrasound results.

The registrar on call, genetics services or the fetal maternal management service can also be contacted for advice.

‘Markers’ on ultrasound

Recent advances in ultrasound have led to the discovery of a growing number of findings on ultrasound that are not an anomaly in themselves, have no functional repercussions (they are not harmful in themselves) and may disappear. These are often referred to as ‘markers’. Some of these are serious indictors of underlying problems with the fetus, whereas some are thought to be essentially normal variants or ‘soft’ markers that are of no consequence, especially when they are isolated and in women who have a low risk of chromosomal abnormality.

If a marker is detected on ultrasound, the first priority is to exclude any associated abnormalities with a detailed anatomical survey of the mid-trimester fetus undertaken by a specialist obstetric service.

This can be undertaken at a tertiary centre who will also direct any further investigations and follow-up as required. This can be organised via WHC.

The result of Down syndrome/aneuploidy tests should also be reviewed to ensure these are low risk.

In all cases woman should be referred to the hospital genetics service or fetal maternal management service if there is:

- a high-risk marker present (even if this is single; e.g. absent nasal bone, echogenic bowel, significantly increased nuchal translucency or aberrant subclavian artery),
- more than one marker present,
• a high risk or borderline aneuploidy screening test result.

The following table provides a summary of some common markers on ultrasound and significance and management if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result.

<table>
<thead>
<tr>
<th>Marker on ultrasound</th>
<th>Significance if isolated on specialist obstetric ultrasound and low risk aneuploidy screening result</th>
<th>Action if isolated on specialist obstetric ultrasound and low risk aneuploidy screening result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Echogenic bowel</td>
<td>Even when isolated, a major marker of Down syndrome and other problems (e.g. cystic fibrosis, CMV infection)</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td>Significantly increased nuchal translucency at 11–13 weeks</td>
<td>Even when isolated, greatly increased risk of Down syndrome, other aneuploidies and other abnormalities (e.g. heart disease)</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td>Choroid plexus cysts</td>
<td>Present in 3% of all fetuses at 16–24 weeks</td>
<td>Reassure</td>
</tr>
<tr>
<td>Echogenic heart focus/ intracardiac focus</td>
<td>Present in 3–5% of fetuses – usually resolves in third trimester Small bright spot seen in the baby’s heart – thought to represent mineralisation/small deposits of calcium in the heart valve.</td>
<td>Reassure No increased chromosomal problems (If not isolated, increased risk of aneuploidy – refer to hospital)</td>
</tr>
<tr>
<td>Pyelectasis</td>
<td>Enlargement collecting system Present in 1% of pregnancies with boys &gt; girls. &gt;50% get in next pregnancy</td>
<td>If isolated, no significant increase in risk of aneuploidy. (If not isolated or increased risk of aneuploidy – refer to hospital) Even if isolated need to follow-up fetal +/- newborn kidneys as although most resolve before birth/within a few months after birth, 1:500 cases develop significant renal disease</td>
</tr>
<tr>
<td>Condition</td>
<td>Description</td>
<td>Action</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Mild renal pelvis dilatation</td>
<td>If mild renal pelvis dilatation (4–7mm), then repeat ultrasound at 32 weeks.</td>
<td>Be vigilant next pregnancy</td>
</tr>
<tr>
<td></td>
<td>If still present at 32 weeks, postnatal follow-up will be required.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>If moderate to severe renal pelvis dilatation (&gt;7mm), then refer to hospital Fetal Maternal Management Service and consider earlier repeat ultrasound at 26–28 weeks</td>
<td></td>
</tr>
<tr>
<td>Single umbilical artery</td>
<td>Present in 2% of pregnancies</td>
<td>If isolated, no significant increase in risk of aneuploidy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(If not isolated or increased risk of aneuploidy – refer to hospital)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Even if isolated association with renal problems and may be at increased risk of growth restriction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ensure kidneys checked on ultrasound and are normal</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Greater surveillance required for fetal growth</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Growth and wellbeing US in third trimester (generally at 28 and 34 weeks)</td>
</tr>
<tr>
<td>Aberrant subclavian artery</td>
<td>There is thought to be an increased risk of Down syndrome, other aneuploidy and cardiac anomalies.</td>
<td>Refer to hospital</td>
</tr>
<tr>
<td></td>
<td>There is currently insufficient data to quantify these risks</td>
<td></td>
</tr>
</tbody>
</table>

**Low-lying placenta**

If the placenta is found to be low-lying (<20mm from internal os), a repeat ultrasound should be performed at about 34 weeks to identify persistent low-lying placenta or placenta praevia. This can be organised by the SMCA (to be undertaken in the community) or can be organised by the hospital staff at the booking for the 28-week hospital visit. If undertaken in the community and a placenta praevia is diagnosed or there are ongoing concerns, contact the WHC so a hospital appointment can be made for the woman. If a placenta praevia is diagnosed, shared care will cease.
When a low-lying placenta is diagnosed, advise the woman to present immediately to the hospital’s Emergency Department if she has any vaginal bleeding. Depending on the level of concern, restrictions on travel and intercourse may also be appropriate.

**High risk of fetal abnormality**

If a fetal abnormality is detected on ultrasound or the woman has a complicated pregnancy due to a high-risk condition (e.g. heart disease in the woman or fetal abnormalities) the Fetal Maternal Management Service (these are called by various names) should be contacted for referral or advice. This can be done directly by Women’s Clinics or if an urgent or semi-urgent referral is required, it is best to contact the unit directly. These services work closely with genetics services, ultrasound and other obstetric services and are able to arrange counselling if a termination is being considered.

**Termination of pregnancy – consideration or decision for fetal abnormality**

When termination of pregnancy (TOP) is considered for any reason, a referral should be made to the hospital as early as possible. This is also the case if the diagnosis of a fetal abnormality is uncertain and/or the woman is not yet sure of her decision. This allows for prompt diagnostic work-up and specialist advice to be obtained so that if this is the eventual decision, this can be performed as early as possible and treatment options are maximised. When antenatal diagnosis is indicated, some women may prefer CVS to amniocentesis so that an earlier result can be obtained and termination of pregnancy undertaken earlier if warranted and more options are available.

BH provides limited termination services and a full range of screening and investigations for fetal abnormality, and refers women to another provider for advice and counselling if they wish to consider termination >12/40 weeks. RWH and WH provide termination services.

The *Abortion Law Reform Act 2008* (Vic) includes amendments as at 1 July 2010 and says that termination of pregnancy may be performed at any time during a pregnancy. Section (s.) 5(1) of the Act specifies that termination after 24 weeks can be performed only if the medical practitioner ‘reasonably believes that the abortion is appropriate in all the circumstances’ and ‘has consulted at least one other registered medical practitioner who also reasonably believes that the abortion is appropriate in all the circumstances’. In determining whether the circumstances warrant an abortion after 24 weeks, the registered medical practitioner must have regard to ‘all relevant medical circumstances’ and ‘the woman’s current and future physical, psychological and social circumstances’ (s. 5(2)).
**Decreased fetal movements**

Maternal perception of decreased fetal movement (DFM) is a common reason for presentation to the hospital for assessment. There is no objective definition of decreased fetal movement, and the nature of movements may change as the pregnancy advances, but there is no evidence that DFM should occur as pregnancy advances or labour commences. Studies have demonstrated an association between DFM and adverse perinatal outcomes, including stillbirth, fetal growth restriction, preterm birth, neonatal low Apgar and fetomaternal haemorrhage.

Although optimal management of DFM has not been established, there is some indication that a reduction in stillbirth rates is achieved by increasing maternal and clinical awareness about DFM and its causes. Factors that might modify a woman’s perception of movements include her weight and placental position.

Women should be asked about fetal movements at each appointment after 20 weeks and advised to contact their maternity care provider and present for assessment if they have concerns about decreased or absent fetal movement. Women should not wait until the next day to report concerns. Maternal concern overrides any definition of DFM based on the number of movements felt.

In the case of a woman reporting DFM, refer her to the hospital immediately for review and a CTG. It is insufficient to perform only a Doppler fetal monitor.

**Small for gestational age**

Generally, if fundal height is more than 2 cm smaller than expected by dates or there is significant deviation or concern about growth patterns, timely referral or specialist ultrasound is required. Referral can be made directly to WHC who can organise a timely ultrasound.

Referral to the hospital is required as soon as possible if the ultrasound indicates:

- A baby is not biophysically well
- A baby is ≤15th percentile
- A baby whose growth pattern is not normal
- Any other concerns.

Depending on the urgency referral to hospital may occur through the Registrar, WHC, or Maternity Ward.
For serial growth scans a minimum of 2 weeks between scans is usual.

**Large for gestational age**

Generally, if fundal height is more than 2 cm greater than expected by dates:

- Review the woman’s GTT to confirm she does not have gestational diabetes (if there are any concerns, refer to the diabetes service)
- A specialist ultrasound is generally not required but may be useful if the mode of delivery is under question, with fetal size a factor in this decision.

A SMCA can organise a timely ultrasound at a specialist community service or contact the WHC to organise an outpatient review.

If an ultrasound indicates a baby who is ≥90th percentile, depending on the circumstances, SMCA may wish to organise referral to the hospital doctor via the WHC for discussion.

**Sub-clinical hypothyroidism**

Universal screening of pregnant women with TSH is not currently recommended or performed at any of the tertiary hospitals, although targeted screening for women as higher risk is recommended (e.g. history of thyroid disease, autoimmune disease, non-physiological goitre or strong family history of thyroid disease).

As ß-hCG and TSH have some similar elements, ß-hCG can stimulate the thyroid and therefore TSH levels are lower in pregnancy. If no laboratory reference range has been provided, the normal range of TSH is:

- 1st trimester: 0.1–2.5 mU/L
- 2nd trimester: 0.2–3.0 mU/L
- 3rd trimester: 0.3–3.0 mU/L.

If TSH levels are higher, ensure the woman is on iodine supplementation of at least 150 mcg/day and order full thyroid function tests and the range of thyroid antibodies.

If T4 is normal (indicating subclinical hypothyroidism) and antibodies are not elevated, the role of thyroxine replacement is controversial and an individualised discussion should take place with the patient based on her wishes; gestation and level of TSH – with a lower threshold to treat with thyroxine at an earlier gestation and a higher TSH. In this situation most clinicians use 50–100 mcg thyroxine per day with a TSH blood test after 2–4 weeks.
If T4 is low, there is a markedly high TSH (if TSH > 10, but many clinicians would treat at much lower levels than this) or there are elevated antibodies, treatment with thyroxine should be initiated and appropriate referral made to the hospital for urgent review.

**Endocrinology Recommendations**

**Before Pregnancy**

Where possible, ensure that women have TSH within the normal range (0.5-5.5 mIU/L). When there is a history of recurrent miscarriage it is acceptable to aim for a TSH within the normal range for first trimester pregnancy before conception. Thyroxine is not recommended for women with elevated anti-thyroid antibodies with appropriate thyroid function.

**Hypothyroidism in pregnancy with TSH 2.6-9.9 mIU/L**

1. Commence or increase thyroxine by 50 micrograms daily
2. Repeat TSH measurement 4 weeks after a change in thyroxine dose and adjust replacement accordingly. Do not check TSH more frequently as it needs 4 weeks to reach a steady state.
3. Once TSH in desired range, repeat TSH measurement at beginning of each trimester. If TSH outside of desired range, adjust thyroxine dose and reassess after 4 weeks.

**Post-partum**

A. *Newly diagnosed hypothyroidism:*
   Stop thyroxine on delivery and repeat TSH 6 weeks post-partum. Manage in accordance with usual guidance

B. *Established hypothyroidism*
   Reduce thyroxine to pre-pregnancy dose. Repeat TSH 6 weeks post-partum and manage in accordance with usual guidance

**Gestational hypertension and pre-eclampsia**

Gestational hypertension is defined as systolic blood pressure ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg in a previously normotensive pregnant woman who is ≥20 weeks of gestation and has no proteinuria or new signs of end-organ dysfunction.

‘Detecting a rise in “booking-in” or preconception BP (>30/15 mmHg), rather than relying on an absolute value has in the past been considered useful in diagnosing preeclampsia in women who do not reach blood pressure of 140 or 90 mmHg.
Available evidence does not support the notion that these women have an increased risk of adverse outcomes. Nevertheless such a rise may be significant in some pregnant women, particularly in the presence of hyperuricaemia, proteinuria or a small for gestational age (SGA) infant and these women warrant closer monitoring.

Gestational hypertension is a temporary diagnosis for hypertensive pregnant women who do not meet criteria for pre-eclampsia, with the diagnosis changed to preeclampsia if proteinuria or signs of end-organ dysfunction develop.

If a SMCA finds a woman’s BP is ≥140 mmHg and/or diastolic blood pressure ≥90 mmHg, with or without proteinuria, refer on the same day to the Assessment Clinic for BP monitoring and investigations as appropriate (or to the Maternity Ward if closed). Referral at lower BPs should occur if there are other symptoms of pre-eclampsia (e.g. proteinuria, headache, visual disturbances, nausea, and epigastric pain).

It is not appropriate for a SMCA to commence antihypertensive medicine. It is important to note that pre-eclampsia can first appear postpartum, when urgent referral to an Emergency Department is required.

**Maternal jaundice/pruritus**

Pruritus in pregnancy is common and may be a benign condition related to skin issues such as dry skin, eczema or pruritic urticarial papules and plaques of pregnancy (PUPPP) or a serious symptom of systemic illness. Intrahepatic cholestasis of pregnancy is almost invariably associated with itchy palms and soles. A rash may not be present. It is associated with increased perinatal mortality and, if suspected, is an indication to measure serum bile acids, preferably fasting.

If pruritus is associated with clinical jaundice, abdominal pain, systemic illness or decreased fetal movement, then urgent referral to the Maternity Ward is required. If there are no associated symptoms or signs, LFTs/serum bile acids, may be required to determine if there is concern of a systemic illness. If there are abnormal results, refer women to the WHC or Maternity Ward if after hours as soon as possible.

**Resources on abnormal findings in pregnancy**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation/web address</th>
<th>Content summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neural tube defects</td>
<td>Centre for Genetics Education <a href="http://www.genetics.edu.au/Publicationsand-Resources/Genetics-Fact-Sheets/Fact%20Sheet%2059">www.genetics.edu.au/Publicationsand-Resources/Genetics-Fact-Sheets/Fact%20Sheet%2059</a></td>
<td>Health professional information: Neural tube defects</td>
</tr>
</tbody>
</table>

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
<table>
<thead>
<tr>
<th>Topic</th>
<th>Source</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large for gestational age</td>
<td><a href="www.merckmanuals.com/professional/pediatrics/perinatalproblems/large-for-gestational-age-infant">www.merckmanuals.com/professional/pediatrics/perinatalproblems/large-for-gestational-age-infant</a></td>
<td>Health professional information: Large for gestational age fetus</td>
</tr>
</tbody>
</table>

Women's Clinics Phone – 5454 7288
Women's Clinics Fax – 5454 7286
| Jaundice and pruritus | Mayo Clinic |  | Consumer information:  
High blood pressure and eclampsia during pregnancy with a link to  
Australian Action on preeclampsia  
Pre-eclampsia |
|----------------------|-------------|---|--------------------------------------------------|
|                      | www.mayoclinic.org/diseasesconditions/cholestasis-ofpregnancy/basics/definition/con-20032985 | Consumer information:  
US information about cholestasis in pregnancy |

Also review:
- Antenatal visits, investigations and findings
- Testing for Down syndrome and other fetal abnormalities
MENTAL HEALTH AND WELLBEING IN PREGNANCY

The Edinburgh Postnatal Depression Scale (EPDS) is an appropriate tool to use to assess antenatal depression and is available through medical software. A proforma may be downloaded from the following sites:

*Beyond Blue*


*The Black Dog Institute*


All women will have an EPDS completed at their first midwifery visit. This can be repeated at any time if there are ongoing concerns. If a high EPDS (with consent from the woman) a referral will be made to BH Maternity Support Program (MSP). A letter will be sent to the nominated GP regarding the EPDS score.

If a woman experiences mental health issues during her pregnancy, there are a number of services that can be accessed within the maternity, community and acute setting depending on:

- The nature and acuity of the problem
- Where she is booked for maternity care
- Where she lives
- Whether she can access private services

For women with severe mental health issues (e.g. bipolar disorder, schizophrenia, severe depression or those taking antipsychotic medication or mood stabilisers), it is preferable that specialist advice is sought pre-pregnancy or early in pregnancy.

If the matter is urgent, the woman can present to the hospital Emergency Department for triage and appropriate referral or the Crisis Assessment and Treatment (CAT) Team can be contacted.

For a full list of services across Victoria refer to the ‘Adult Specialist Mental Health Services (16-64 Years)’ page of the Department of Health and Human Services website. Also see: www.health.vic.gov.au/mentalhealth/services/adult/index.htm

Further information about Victorian Mental Health Services is available on the department’s ‘Victoria’s Mental Health Services’ webpage. Also see: www.health.vic.gov.au/mentalhealth/
The National Health Services Directory is also a useful website to search for community mental health providers and sites. Also see: [www.nhsd.com.au/](http://www.nhsd.com.au/) Women (and families) can self-refer to some of these services directly by contacting the services outlined below.

**Hospital mental health service**

To obtain appropriate hospital triaging and support, referrals for maternity care should contain current and past psychiatric history and medication and significant family and social history.

BH has a Maternity Support Program (MSP) that can be assessed for women with mental health issues, emotional concerns or complex social concerns who are receiving pregnancy care. MSP will refer/link with community supports as required.

To access these services in a non-urgent situation SMCA’s can:

- Include details and a request in the referral letter for maternity care
- Contact WHC to arrange an appointment at the hospital if the woman is undertaking shared maternity care.

Contact the relevant hospital mental health team directly via the hospital switchboard for advice during business hours

**Hospital mental health service contact details**

Phone: 5454 6000 (switchboard – ask for the psychiatry registrar)

Maternity Support Clinicians: 5454 7282 / 0427 410 523

**Private providers**

Referring a woman directly to a private provider (psychiatrist or psychologist) is an option the SMCA may consider when caring for a pregnant woman with mental health issues. In this instance, communicate this in the VMR. Even if a woman has private supports and care, if the woman has a severe mental health issue it is important this is communicated to the hospital staff, as she may have issues when she is hospitalised, in the postpartum and in caring for her child.

**Adult specialist mental health services (including Crisis Assessment and Treatment (CAT) Teams)**

Adult specialist mental health services provide both urgent and non-urgent support. All services provide psychiatric triage and referral 24 hours, seven days a week. Also see: [www.health.vic.gov.au/mentalhealth/services/adult/](http://www.health.vic.gov.au/mentalhealth/services/adult/). They provide a range of services, including urgent community-based assessment and short-term treatment interventions

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Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
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Birth Suite – 5454 8582
to people in psychiatric crisis. CAT services have a key role in deciding the most appropriate treatment option and in screening all potential inpatient admissions. CAT services provide intensive community treatment and support, often in the person’s own home, during the acute phase of illness as an alternative to hospitalisation. CAT services also provide a service to designated hospital emergency departments through an onsite presence.

**Inpatient psychiatric service**

If a woman requires admission for a psychiatric condition during pregnancy, this is usually arranged by the referring hospital psychiatric team or CAT teams. Admissions to the BH Alexander Bayne Centre can be arranged if deemed necessary.


**Parent Infant Unit (PIU)**

The PIU – Parent Infant Unit is an acute 5 bed / 5 cot mental health facility for caregivers and infants under the age of 12 months and not walking. Admissions can also occur in the third trimester of pregnancy. The caregiver (ie. Mother, Father or other carer) is the admitted patient and the infant is a border. The carer must have an acute mental health concern. All infants will have a Paediatric review post arrival. A non-admitted partner (i.e. partner/father) can also stay (as a guest) provided they are actively involved in the care of the infant and the therapeutic plan for caregiver and infant. All admissions to the PIU are via Psychiatric Triage (1300 363 788) followed by an assessment by the Psychiatric Registrar and weekly review by the Consultant Psychiatrist. All possible referrals are welcome to be discussed with the Nurse in charge (ph. 5454 7765 business hours) prior to referral via Triage to allow for clarification/secondary consultation.

**Medicines Information Service (MIS)**

The MIS specialises in providing information on medicine use, including psychotropic medicines, in pregnancy and breastfeeding, women’s health and neonates. The service is also able to provide advice regarding adverse drug reactions, drug interactions,
compatibilities, product information, complementary or herbal medicines use and much more.

The MIS is provided by the specialist pharmacists at the Royal Women’s and operates from Monday to Friday (9am to 5pm), excluding public holidays.

Phone: (03) 8345 3190
Email: drug.information@thewomens.org.au
Website: www.thewomens.org.au/AskaPharmacist

Alternatively, Rodney Whyte (pharmacist) is contactable at Monash Medical Centre, Mon-Fri 9:00-5:00, on 9594 2361.

**Alcohol and drug use**

The Mercy, Royal Women’s and Western Health each have a service to support women with alcohol and substance use issues during pregnancy and postpartum. These units work closely with the hospital social work and mental health services and can also provide advice to SMCA’s.

**Alcohol and drug service contact details**

**Mercy Hospital for Women**

Phone: 8458 4100 (Transitions Clinic – GP’s only)

Phone: 8458 4201 (coordinating midwife – women can self-refer to this service once they are booked in for care at the hospital)

Fax: 8458 4206

**The Women’s (Parkville and Sandringham)**

Phone: 8345 3931 (Women’s Alcohol and Drug Service – women can self-refer to this service once they are booked in for care at the hospital)

Fax: 9344 2719

**Werribee Mercy Health**

Phone: 8754 3341
Western Health

Phone: 8345 1727 (Maternity Outreach and Support Service Clinic)
– Women can self-refer

Fax: 8345 1691

**Intimate partner violence**

All hospitals have social workers and other services that have experience in managing intimate partner violence.

Intimate partner violence is responsible for more ill-health and premature death in Victorian women under the age of 45 than any other preventable risk factor, including high blood pressure, obesity and smoking. Findings from a 2004 VicHealth study of the health costs of violence demonstrated the seriousness and prevalence of intimate partner violence.

Intimate partner violence has wide-ranging and persistent effects on a woman's physical and mental health, contributing 8.8% of the total disease burden of Victorian women aged 15 to 44. Direct health consequences for women exposed to violence include depression, anxiety, phobias, suicide attempts, chronic pain syndromes, psychosomatic disorders, physical injury, gastrointestinal disorders, irritable bowel syndrome and a variety of reproductive consequences. The influence of the abuse can persist long after it has stopped, and the more severe it is, the greater the impact on a woman's physical and mental health.

One in five Australian women report being subjected to violence at some stage in their adult life, increasing their risk of mental health problems, behavioural and learning difficulties. The risk of violence is higher in pregnant women and in the period following the birth of a child. Young women who have been exposed to violence are more likely to have an unplanned pregnancy, termination or miscarriage. It takes them longer to make contact with medical services for antenatal care than women who are not exposed to violence, and their babies are more likely to have a problem diagnosed after birth. In addition, it is estimated that one in four Victorian children have witnessed intimate partner violence, increasing their risk of mental health problems, behavioural and learning difficulties.

**Crisis service contact details**

In case of emergency contact the police on 000
Safe Steps – Family Violence Response Centre – Available 24/7 (previously called Women’s Domestic Violence Crisis Service)

Website: [www.safesteps.org.au](http://www.safesteps.org.au/)

Phone: 1800 015 188 toll-free or 03 9322 3555

State-wide 24-hour crisis support and safe accommodation for women and their children

Central contact point for women’s refuges in Victoria

In Touch Multicultural Centre Against Family Violence

Website: [http://intouch.asn.au/](http://intouch.asn.au/)

Phone: 1800 755 988 toll-free or 9413 6500

Provides phone support and advice to women from culturally and linguistically diverse backgrounds in their primary language

Resources on mental health and wellbeing in pregnancy

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation / web address</th>
<th>Content summary</th>
</tr>
</thead>
</table>

Consumer information:

Multiple resources on mental health during pregnancy and early parenthood including where to get help for parents |


Comprehensive guide with multiple resources related to perinatal depression and anxiety for parents


Website for adult specialist mental health services (16–64 years) with links to metropolitan and rural support services


Consumer information:

Multiple fact sheets relating to mental health problems
<table>
<thead>
<tr>
<th>Medicine</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ion/pregnancy-and-birth/mental-health-pregnancy</strong></td>
<td>health and pregnancy including baby blues, depression, bi-polar, anxiety, schizophrenia, eating disorders and post-partum psychosis</td>
</tr>
<tr>
<td><strong>Mental Health Association of NSW</strong>&lt;br&gt;www.mentalhealth.asn.au</td>
<td>Consumer information: Multiple resources on mental health during pregnancy and early parenthood</td>
</tr>
<tr>
<td><strong>Smiling Mind and Beyond Blue – Mind the Bump</strong>&lt;br&gt;www.mindthebump.org.au/?gclid=Cj0TeQjw4yS5BRDvAodAidNfg</td>
<td>Free meditation app to help support mental and emotional wellbeing in the journey to parenthood for both individuals and couples</td>
</tr>
<tr>
<td><strong>Medicines</strong></td>
<td>Health professional information: Comprehensive web based pregnancy and breastfeeding medicines guide developed by the Women’s and available on annual subscription</td>
</tr>
<tr>
<td>The Women’s Pregnancy and breastfeeding medicines guide <a href="https://thewomenspbmg.org.au/">https://thewomenspbmg.org.au/</a></td>
<td>Health professional information: Comprehensive web based pregnancy and breastfeeding medicines guide developed by the Women’s and available on annual subscription</td>
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<tr>
<td><strong>Medicines continued</strong></td>
<td>Medicine use while breastfeeding</td>
</tr>
<tr>
<td><strong>Intimate partner violence</strong>&lt;br&gt;Safe steps – Family Violence Response Centre<a href="http://www.safesteps.org.au/">www.safesteps.org.au</a></td>
<td>Domestic Violence Crisis Service – Available 24/7. Central contact point for women’s refuges in Victoria. Provides telephone crisis counselling, referral, information and support Phone: 1800 015 188 or 03 9322 3555</td>
</tr>
<tr>
<td>inTouch</td>
<td>Provides phone support to women from</td>
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<tr>
<td><strong>Website</strong></td>
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<tr>
<td><strong><a href="http://intouch.asn.au/">http://intouch.asn.au/</a></strong></td>
<td>Culturally and linguistically diverse backgrounds in their primary language. Phone: 1800 755 988 or 9413 6500</td>
</tr>
<tr>
<td><strong>Domestic Violence Resource Centre, Victoria <a href="http://www.dvrcv.org.au/">www.dvrcv.org.au/</a></strong></td>
<td>Provides training, publications, research and other resources to those experiencing (or who have experienced) family violence, and practitioners and service organisations who work with family violence survivors</td>
</tr>
</tbody>
</table>
POSTNATAL CARE

The average hospital stay after the birth of a baby is 1–2 days for a vaginal birth and 3 days for a caesarean section. A hospital discharge summary is sent to the SMCA and nominated GP within 48 hours of discharge. In the case of significant complications, fetal or neonatal death, the GP and SMCA will be contacted by phone by the registrar or consultant.

Immediate postnatal care at the hospital includes:

- Physical assessment of mother and baby
- Wound/perineal/breast care
- Parenting and emotional wellbeing
- Supporting parents to care for their baby
- Breastfeeding/infant feeding (initiation and support)
- Routine newborn screening test for hypothyroidism, phenylketonuria (PKU), cystic fibrosis and some metabolic disorders (Guthrie test)
- Routine newborn hearing screening
- Contraception education.

Child health record

All parents are given a *My Health and Development Record* (child health record) in hospital. This document is used by parents, maternal child health nurses and GP’s as a record of a child’s health and development, including growth, immunisations and development milestones. The child health record is used as a communication tool between parents and health care providers, and documents all maternal child health nurse visits.

Routine investigations in hospital

**Newborn screening test (NST)**

The newborn screening test (Guthrie test) involves a blood sample obtained with a heel prick and placed on pre-printed filter paper. All tests are processed by the Victorian Clinical Genetics Service. Newborn screening identifies babies with an increased risk of having hypothyroidism, PKU, cystic fibrosis and more than 20 additional metabolic disorders.

The NST is performed when the baby is between 48 and 72 hours old. A greater number of false positives and false negatives occur when the screening is done before 48 hours. If a baby is discharged before 48 hours, the newborn screening test is attended by the Midwifery Home Care midwives the next day. The hospital is responsible for ensuring that all babies are screened.
This includes babies that are transferred to other hospitals or domiciliary midwifery programs. About 0.1% of babies that undergo newborn screening are diagnosed with a condition. Hospitals monitor results weekly, and notification is sent to the paediatrician/GP. Parents are also notified if test results indicate that their baby is at increased risk. Diagnostic testing can also be arranged to confirm the results.

Newborn screening laboratory contact details

**Victorian Clinical Genetics Services (VCGS)**

Phone: 8341 6272
Fax: 8341 6339
Email: screeninglab@vcgs.org.au

**Royal Children’s Hospital Genetic Counselling Service**

Phone: 8341 6201

**Newborn hearing screening**

As part of the Victorian Infant Hearing Screening Program (VIHSP), all babies born at BH undergo a routine hearing screen and risk factor assessment prior to discharge. If a baby has not been screened prior to discharge, an outpatient appointment will be made for the screening to be undertaken. Screening results are documented in the *My Health and Development Record*, and a diagnostic audiology referral is organised if indicated.

This is followed up by VIHSP and the maternal child health nurse.

If a pass result is obtained but risk factor/s are identified, this is documented in the child health record. The maternal child health nurse also notes the follow-up that should be undertaken, including referral for diagnostic audiography at the 2 week and/ or 6–8 month check, if required. If a GP identifies additional risk factors or parental concerns about a baby’s hearing, a referral for diagnostic audiology can be made.

Risk factors for hearing loss include:

- Family history of congenital hearing impairment
- Rubella, cytomegalovirus or toxoplasmosis during pregnancy
- Admission to neonatal intensive care or special care nursery for 2 or more days
- Apgar score <4 at 5 minutes of age
- Birth weight <1500 g
- Severe jaundice /Exchange transfusion
- Baby receiving Aminoglycosides antibiotics in the neonatal period
- Congenital abnormalities of the head and neck
• Bacterial meningitis
• Later risk factors e.g. developmental delay, head injury.

Victorian Infant Hearing Screening Program contact details
Phone: 9345 4941 / 54547297 (Bendigo)
Fax: 9345 5049
Email: email.vihsp@rch.org.au

Breastfeeding

The World Health Organization states that exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to 2 years of age or beyond. According to the 2010 Australian National Infant Feeding Survey, exclusive breastfeeding was initiated for 90% of babies at birth (i.e. their first feed was breastmilk or equivalent). The proportion of babies exclusively breastfed decreased to 61% before the end of the first month of life, and continued to decrease, with 39% of babies exclusively breastfed to around 4 months of age and 15% to around 6 months.

It is widely believed that breastfeeding positively influences the physical and emotional health of both mother and infant. It provides protection against many diseases and infections for both mother and baby, and adequate nutrition for normal growth and development of the baby. Hospitals strongly encourage breastfeeding with support and education for all women in the antenatal and postnatal period.

Breastfeeding is discussed and encouraged by hospital staff at antenatal visits and childbirth education sessions. In the immediate postnatal period, lactation consultants are available at the hospital to provide advice and support.

Breastfeeding support is also available for up to 6 weeks postpartum at BH’s Breastfeeding Support Clinic for women who:

• Have been identified as having risk factors for breastfeeding difficulties during pregnancy (e.g. have had poor breastfeeding experiences, multiple pregnancies, breast surgery)
• Experience breastfeeding problems whilst an inpatient or at home
• Require additional support.

GPs, SMCAs and women can contact breastfeeding services at the hospitals directly for advice. In addition to the hospital breastfeeding services, many maternal and child
health services and early parenting centres provide assessment and support (e.g. Australian Breastfeeding Association).

Hospital breastfeeding support contact details

BFSS Phone: 5454 7293 / 0427 356 675

Women’s Clinics: 5454 7288

Postnatal care in the community

In addition to providing immediate postnatal care, BH offers at least one domiciliary midwife visit for all women within the first few days after discharge. This service also notifies the appropriate Maternal Child Health Service at the time of discharge from midwifery home care, with the local Maternal and Child Health Service then undertaking a home visit. Additional services are available through the Maternal and Child Health Service, such as Enhanced Home Visiting, if required.

Most postnatal care is undertaken in the community by GPs in conjunction with the Maternal and Child Health Service. Infants in Australia have a higher percentage of GP visits during the first year of life than any other year. The table below shows high levels of maternal morbidity at 6 months postpartum and low levels of maternal satisfaction with hospital postnatal care in Victoria. All women and their babies are encouraged to visit their GP for a postnatal check at 6 weeks, or earlier if needed. If a woman does not have a GP, the hospital can assist her to find one prior to discharge.

| Common maternal postnatal problems in first 6–7 months after child birth (Victoria) |
|------------------------------------|-----------------|-----------------|
| Problem                           | Primiparas (%)  | Multiparas (%)  |
| Backache                          | 44              | 43              |
| Bowel problems                    | 10              | 11              |
| Constantly re-living baby’s birth| 7               | 5               |
| Contraception                     | 8               | 9               |
| Depression                        | 19              | 20              |
| Haemorrhoids                      | 26              | 24              |
| Mastitis (if breastfeeding)       | 16              | 18              |
| More coughs and colds than usual  | 9               | 13              |
| No health problems                | 5               | 6               |
| Other                             | 7               | 8               |
| Pain from a caesarean wound       | 63+             | 60              |
| Painful perineum                  | 31              | 15              |
| Relationship with partner         | 19              | 18              |
| Sex                               | 31              | 24              |
| Tiredness/exhaustion              | 68              | 70              |

*Only includes women who had a caesarean section (n=1336).
The following is recommended as part of postnatal care:

- Every woman should see their GP for postnatal care
- The timing of visits should be individualised and reflect a woman’s needs
- Both the mother and child should be assessed by the GP at the 6-week postnatal check-up
- A patient-centred approach should be adopted by the GP, focusing on relevant issues and concerns.

GP guide for postnatal check-up of the mother

The 6-week postnatal check-up with the GP should include:

- Physical assessment of mother and baby
- Developmental assessment of the baby
- Emotional wellbeing of mother, including postnatal depression/adjustment and follow-up of any issues from pregnancy and birth
- Opportunity for parents to express concerns
- Relationship and social supports
- Health promotion and preventative health, including contraception
- Support breastfeeding / infant feeding and positive parental/child interaction
- Pelvic floor assessment and advice

Physical assessment should include:

- Follow-up of complications of pregnancy (e.g. hypertension, pre-eclampsia, gestational diabetes)
- Check wounds
- Check for fever, anaemia and vaginal loss
- Assess for breastfeeding difficulties
- Ask about urinary and faecal continence
- Ask about perineal symptoms and intercourse.

Investigations and immunisations to consider include:

- Haemoglobin if previous anaemia or postpartum haemorrhage
- If gestational diabetes, follow-up of GTT result for 6 weeks after birth, and ongoing follow-up if required. A Pap smear if due
- Checking MMR immunisation (if rubella antibody titre is low antenatally, MMR vaccination is usually given at the hospital postpartum; if not given, please administer).
- Varicella immunisation if non-immune (this is not usually given at the hospital – 2 doses required)
• Pertussis immunisation of mother and carers/other close family members if not already undertaken (for mother, recommended in each pregnancy, ideally at 28–32 weeks; for partners and other caregivers if not given in past 10 years)
• Hepatitis B/C surveillance if relevant.

Other issues for assessment/discussion include:

• Sex, dyspareunia, libido
• Maternal nutrition
• Sleep and rest
• Alcohol, smoking and drug use
• Vitamin D supplementation if mother was deficient during pregnancy (baby, mother and other family members to be supplemented); continue until end of exclusive breastfeeding
• Liaison with other community services (in particular for recent migrants, mothers from Aboriginal and Torres Strait Islander backgrounds, adolescent mothers, mothers with alcohol and substance use issues)
• Awareness of postnatal depression (both parents), intimate partner violence, parenting and child mistreatment.

GP guide for postnatal check-up of the baby

The aim of the GP visit is also to assess the baby’s physical and developmental wellbeing, and allow discussion of health promotion and any issues or concerns.

Physical assessment includes:

• A general physical examination (assessment for head shape/fontanelles, skin, jaundice, tone, heart, testes, genitalia/anus, natal cleft, squint, eyes (red reflex), hips)
• Assessment of growth (height, weight and head circumference)
• A check to see if the baby is smiling, following object and maintaining gaze
• Identification of risk of hearing problems
• Follow-up of any complications or parental concerns
• Follow-up of relevant tests.

Investigations and immunisations include:

• Follow-up of investigation results (e.g. fetal hydronephrosis, TFT’s)
• Follow-up of abnormal clinical findings (e.g. prolonged jaundice, heart murmurs)
• A screening hip ultrasound for babies at risk of hip dysplasia (breech, talipes, family history)
• Immunisations as per National Health and Medical Research Council schedule.
Other issues for discussion:

- Appropriate feeding and weight gain
- If mother was vitamin D deficient during pregnancy, vitamin D supplementation (e.g. Pentavite®) at least while exclusively breastfeeding
- Settling and sleep
- Sudden Infant Death Syndrome (SIDS) prevention
- Dangers of passive smoking
- Car safety and other injury prevention
- Sun protection
- Community and other support and resources.

**Follow-up of common issues in the postnatal period**

Gestational diabetes

If a woman had gestational diabetes, GP’s should ensure a GTT was performed at around 6 weeks after the birth. BH routinely give woman a pathology request slip for a GTT prior to discharge. Even if the result of this postnatal GTT is normal, women are at increased risk of developing diabetes later in life (30% –50% chance within 15 years after a pregnancy).

Therefore, this is an opportunity to offer women counselling, to discuss minimisation of risk factors for diabetes and vascular disease, and for the GP to arrange regular testing (e.g. 2-yearly GTT if normal, yearly if impaired result).

Pregnancy-induced hypertension

For women who have had pregnancy induced hypertension:

- Review blood pressure and taper off antihypertensive medicine as appropriate; management plan is individualised and usually stated on discharge summary. Hospital review may have been arranged or may not be required
- Most women are able to cease their antihypertensive medicine by about 2 months postpartum
- Ensure other risk factors and surveillance for cardiovascular risk factors are addressed
- If moderate/severe pregnancy induced hypertension, refer to obstetrician pre-pregnancy for subsequent pregnancies for consideration of early prophylaxis
- Review results of hospital investigations (e.g. lupus markers/prothrombin gene mutations) and manage accordingly.
Hepatitis B carrier

If the mother is a hepatitis B carrier, GP’s should:

- Undertake hepatitis B surveillance of the mother
- Confirm that the baby has received 2 injections post birth (hepatitis B immunoglobulin and hepatitis B paediatric formulation) (Engerix-B paediatric or H-B-VAX II paediatric)
- Reinforce the need for full immunisation of the child
- Test the child’s immunity (Hep B SAb) and carrier status (Hep B SAg) at around 12 months (can be done from 9–15 months)
- Ensure all other family members and household contacts have been immunised and that immunity is confirmed with a blood test
- If the woman is on antiviral medication, ensure that this is not suddenly ceased due to the risk of ‘hepatitis B flare’.

Vitamin D supplementation for babies

Risk factors for vitamin D deficiency in newborns include:

- Maternal vitamin D deficiency – vitamin D is transferred form the mother to the fetus across the placenta, and reduced vitamin D stores in the mother are associated with lower vitamin D levels in the infant
- Prematurity – vitamin D levels are particularly low in premature infants who have less time to accumulate vitamin D from the mother through transplacental transfer.

Babies do not routinely have vitamin D levels checked, even if the mother is vitamin D deficient. Supplementation is indicated if a mother is vitamin D deficient.

Maternal and child health service and local government family services

The Maternal and Child Health Service and local government family services provide a range of support services for babies, women and families, including assessment, referral, home support and visits from a maternal child health nurse, enhanced maternal child health services and help with breastfeeding, parenting and social connections, and drop-in centres. Many also have culturally sensitive groups and activity groups. Women and GP’s can contact the local service to arrange support.

Maternal and Child Health Service contact details

Maternal and Child Health Line
Phone: 13 22 29 (24 hours, seven days a week)

Directory services with postcode search:
Child and family services and support

Child and family information, referral and support teams (Child FIRST) include enhanced maternal child health services and other support services (e.g. social work, housing, legal, and drug and alcohol services) and can be contacted when a health professional feels a family requires additional support.

Issues may include:

- Young, isolated or unsupported families
- Parenting problems that may affect the child’s development
- Social or economic disadvantage that may adversely impact on a child’s care, safety or development
- Family conflict or breakdown
- Families under pressure due to a family member’s physical or mental illness, substance use, disability or bereavement.

GP’s are encouraged to contact the Maternal and Child Health Service to discuss additional support if required. Referral to this service does not replace mandatory reporting of child abuse to the Victorian Child Protection Service (see below).

Child and family services and support contact details

Bendigo Child FIRST
175 Hargreaves St Bendigo 3550
Phone: 5440 1147
Phone: 1800 260 338
Fax: 5440 1108

Mandatory reporting requirements for health professionals

Mandatory reporting of suspected child physical or sexual abuse:

Doctors, nurses, teachers and police must report suspected child physical or sexual abuse to the child protection service. This mandated obligation is set out in s184 of the Children, Youth and Families Act 2005.
Professionals are mandated to report child abuse:

- When they form a belief on reasonable grounds that a child needs protection from physical injury or sexual abuse
- Where they form this belief while practising a mandated profession
- Each time they become aware of any further reasonable grounds for this belief.

'Forming a belief' is the process of asking whether you are more or less likely to believe the child faces significant harm based on the information available. It does not mean you have to prove the abuse has occurred or is likely to occur.

- More information can be found at:

Child Protection Services contact details

Child Protection Services (to make a notification of child abuse)

Phone: 1800 675 598       OR

Direct line: 9843 5422

Child Protection Crisis Line

Phone: 13 12 78 (after hour's service)

Mother and baby inpatient mental health services

Within the Bendigo region the GP will call triage 24 hour Psychiatric Triage assessment team (Ph: 1300 363 788) and discuss the individual woman. A plan will then be made regarding follow-up based on the assessment.

The BH PIU – Parent Infant Unit is an acute 5 bed / 5 cot mental health facility for caregivers and infants under the age of 12 months and not walking. Admissions can also occur in the third trimester of pregnancy. The caregiver (ie. Mother, Father or other carer) is the admitted patient and the infant is a border. The carer must have an acute mental health concern. All infants will have a Paediatric review post arrival. A non-admitted partner (i.e. partner/father) can also stay (as a guest) provided they are actively involved in the care of the infant and the therapeutic plan for caregiver and infant. Upon admission to the PIU the caregiver will be assessed by the Psychiatric Registrar and have a weekly review by the Consultant Psychiatrist. All possible referrals are welcome to be discussed with the Nurse in charge (ph. 5454 7765 business hours) prior to referral via Triage to allow for clarification/secondary consultation.

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
Assessment Midwife – 5454 7291
Obstetric Registrar – 5454 6291
Birth Suite – 5454 8582
There are three other public inpatient mother and baby services in Victoria. They are located at the Austin Hospital, Werribee Mercy Hospital and Monash Medical Centre. These services provide specialist assessment and management of women with mental illness in the postnatal period. Generally, infants up to 12 months of age are admitted with their mothers. SMCA’s can refer a woman through the local Adult Mental Health Service, where an intake worker will assess the woman and arrange admission.

Public mother and baby inpatient unit contact details:

* **Bendigo Health Parent Infant Unit**
  
  Psychiatric Triage Phone: 1300 363 788
  
  Psychiatry Reception 5454 7765

* **Austin Health – Heidelberg**
  
  Phone: 9496 6406 or 9496 5000 (after hours)
  
  Fax: 9496 4366

* **Monash Medical Centre (Clayton)**
  
  Phone: 9594 1414
  
  Fax: 9594 6615

* **Werribee Mercy Hospital (Werribee)**
  
  Phone: 9216 8465
  
  Fax: 9216 8470

Referring a woman directly to a private provider (psychiatrist or psychologist) is also an option for GPs to consider when caring for a woman with mental health issues in the postnatal period. Private facilities with both mother and baby units and parenting centres are also available. To refer, SMCA’s should contact the facilities directly.
All services provide both day and inpatient programs.

Private mother and baby units contact details

**North Park Private Hospital (Bundoora)**
Phone: 9468 0850 or 9468 0804 (after hours)
Fax: 9468 0300

**Mitcham Private Hospital (Mitcham)**
Phone: 9210 3134
Fax: 9210 3183

**Albert Road Clinic (Melbourne)**
Phone: 9256 8322
Fax: 9820 9588

**Masada Private Hospital (St Kilda East)**
Phone: 9038 1413
Fax: 9038 1309

**Early parenting centres**

Early parenting centres provide non-urgent support for families with children 0 to 3 years who have difficulty establishing feeding, sleeping and other early childhood routines. Families can stay at the centres or attend day stay programs. Women can self-refer to these services.

**Early parenting centre contact details**

**Tweddle Child and Family Health Service (Footscray)**
Phone: 9689 1577
Fax: 9689 1922
**Mercy Health O’Connell Family Centre (Canterbury)**

Phone: 8416 7600
Fax: 9816 9729

**Queen Elizabeth Centre, Noble Park**

Phone: 9549 2777
Fax: 9549 2779

**Sudden infant death syndrome**

Families are provided with advice about safe sleeping at the hospital and by maternal child health nurses. Information on safe sleeping and bereavement support, including in languages other than English, is available on the SIDS and Kids website.

Also see: [www.sidsandkids.org/](http://www.sidsandkids.org/)

**Resources on postnatal care**

<table>
<thead>
<tr>
<th>Topic</th>
<th>Organisation web address</th>
<th>Content summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Services</td>
<td>Department of Health and Human Services, Victoria</td>
<td>Comprehensive guide with multiple resources related to child and family protection services across Victoria including mandatory reporting requirements for child abuse</td>
</tr>
<tr>
<td>Child Health Record</td>
<td>Department of Education and Training, Victoria</td>
<td>Comprehensive guide with multiple resources related to My Health and Development Record (the green book given to parents for each child born)</td>
</tr>
<tr>
<td>---------------------</td>
<td>-------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Newborn Tests</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Newborn blood screening</strong></td>
<td>Victorian Clinical Genetics Services</td>
<td>Health professionals information: Newborn blood screening</td>
</tr>
<tr>
<td><strong>Newborn hearing screening</strong></td>
<td>The Royal Children’s Hospital <a href="http://www.rch.org.au/vihsp/about_vihsp/About_the_Victorian_Infant_Hearing_Screening_Program_VIHS">www.rch.org.au/vihsp/about_vihsp/About_the_Victorian_Infant_Hearing_Screening_Program_VIHS</a></td>
<td>Comprehensive site: Victorian Infant Hearing Screening Program (VIHSP) with links to public, private, metropolitan and rural maternal screening services</td>
</tr>
</tbody>
</table>

Women’s Clinics Phone – 5454 7288  
Women’s Clinics Fax – 5454 7286  
Assessment Midwife – 5454 7291  
Obstetric Registrar – 5454 6291  
Birth Suite – 5454 8582
<table>
<thead>
<tr>
<th>Area</th>
<th>Link/Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Infant feeding and breast care</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding</td>
<td>Australian Breastfeeding Association <a href="http://www.breastfeeding.asn.au/bfinfo/index.html">www.breastfeeding.asn.au/bfinfo/index.html</a></td>
<td>Comprehensive information: Multiple resources on breastfeeding including the contact details for the Helpline</td>
</tr>
<tr>
<td></td>
<td>Medicines Information Service (MIS) Phone: 8345 3190* Email: <a href="mailto:drug-information@thewomens.org.au">drug-information@thewomens.org.au</a></td>
<td>Health professional and consumer information: The MIS provides evidence-based medicines information via telephone and email.</td>
</tr>
</tbody>
</table>

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Assessment Midwife – 5454 7291
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Birth Suite – 5454 8582
<table>
<thead>
<tr>
<th>The Women’s Pregnancy and Breastfeeding Medicines Guide (PBMG)</th>
<th>Health professional information: A quick reference guide for healthcare professionals providing comprehensive, practical and unbiased specialised information on medicine use in pregnancy and breastfeeding via an online subscription.</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="http://www.thewomens.org.au/pbmg">www.thewomens.org.au/pbmg</a></td>
<td></td>
</tr>
<tr>
<td>The Women’s</td>
<td>Health professional information: Breast and nipple thrush guideline</td>
</tr>
<tr>
<td><a href="http://www.thewomens.org.au/healthinformation/breastfeeding/breastfeeding-overview/">www.thewomens.org.au/healthinformation/breastfeeding/breastfeeding-overview/</a></td>
<td>General breastfeeding information</td>
</tr>
<tr>
<td><a href="http://www.thewomens.org.au/healthinformation/breastfeeding/">www.thewomens.org.au/healthinformation/breastfeeding/</a></td>
<td>Medicines, drugs and breastfeeding</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Department of Health, Australia</th>
<th>Comprehensive guide with multiple resources related to National Breastfeeding Guidelines and strategies</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Bottle feeding</th>
<th>Consumer information: Multiple resources related to bottle feeding babies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raising Children Network</td>
<td></td>
</tr>
<tr>
<td><a href="http://raisingchildren.net.au/articles/how_to_bottle-feed.html/context/203">http://raisingchildren.net.au/articles/how_to_bottle-feed.html/context/203</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safe sleeping, sudden infant death syndrome</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Safe sleeping, SIDS and Kids</td>
<td>Comprehensive guide with multiple resources including information on safe sleeping techniques and bereavement support for SIDS</td>
</tr>
<tr>
<td><a href="http://www.sidsandkids.org/">www.sidsandkids.org/</a></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Safe sleeping, sudden infant death syndrome</th>
<th>Consumer information: Sudden unexpected death in infants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Better Health Channel</td>
<td></td>
</tr>
</tbody>
</table>

Women’s Clinics Phone – 5454 7288
Women’s Clinics Fax – 5454 7286
| Maternal care | General physiotherapy | Consumer information:  
Physiotherapy advice on improving your recovery after birth |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The Women's</td>
<td></td>
</tr>
</tbody>
</table>
| Pelvic floor| The Women's          | Consumer video:  
How to tone your pelvic floor |
|             | [www.youtube.com/watch?feature=player_embedded&v=yb_c9rGv_0o](www.youtube.com/watch?feature=player_embedded&v=yb_c9rGv_0o) |                                                      |
| Spinal and epidural | The Women's | Consumer information:  
Care after a spinal or epidural |
| Contraception| Family Planning Victoria | Consumer and health professional information:  
Information on a range of contraception |
| Parenting   | Raising Children Network | Consumer information:  
Comprehensive, practical, expert child health and parenting information and activities covering children aged 0-15 years |
|             | [http://raisingchildren.net.au/](http://raisingchildren.net.au/) |                                                      |
|             | The Royal Children’s Hospital | Consumer information:  
Parents interacting with their newborn |
|             | [www.rch.org.au/kidsinfo/fact_sheets/Parent_information_about_newborn_babies_interacting/](www.rch.org.au/kidsinfo/fact_sheets/Parent_information_about_newborn_babies_interacting/) |                                                      |
| Safety      | General              | Health professional and consumer information:  
RCH Safety Centre. Comprehensive site with multiple resources on safety – including furniture, dogs, home, water, road. |
<p>|             | The Royal Children’s Hospital |                                                      |</p>
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child safety – car restraints</td>
<td>Includes Home Safety Checklist</td>
<td>Consumer information: Mandatory requirements for appropriate child safety restraints for vehicles, including contact details</td>
</tr>
<tr>
<td>Nursery and baby furniture</td>
<td>Includes Home Safety Checklist</td>
<td>Consumer information: Nursery and baby furniture safety including associated links and contact details</td>
</tr>
<tr>
<td>Growing safely</td>
<td>Provides guidance for parents and carers of children from birth to 5 years</td>
<td>Age specific advice for parents and carers of children from birth to 5 years</td>
</tr>
</tbody>
</table>

**Child safety – car restraints**

VicRoads

**Nursery and baby furniture**

The Royal Children’s Hospital

**Growing safely**

The Royal Children’s Hospital
REFERENCES


de Jong-Potjer LC, Elsinga J, le Cessie S, van der Pal-de Bruin KM, Knuistingh Neven A, Buitendijk SE, et al. GP-initiated preconception counselling in a randomised
controlled trial does not induce anxiety. BMC Family Practice 2006;7:66 Search PubMed


GL Gilbert, Parvovirus B19 infection and its significance in pregnancy, Centre for Infectious Diseases and Microbiology, Institute of Clinical Pathology and Medical Research, Westmead Hospital, Westmead, New South Wales, April 2000.


Appendix 1: Pregnancy Weight Matters Brochure
What do I do if I am gaining too much weight?

Pregnancy is not a time for strict dieting. However you do not need to ‘eat for two!’ There are some simple choices you can make that will help you to limit the amount of additional energy you are eating. If you would like more advice about healthy eating and managing your weight gain in pregnancy please ask your midwife or doctor for a referral to a Dietitian.

Limit high sugar foods:
- Drink water, not soft drink or cordial
- Limit sweetened soft drinks
- Limit fruit juices to once a day as these are high in natural sugar
- Limit chocolate, lollies, sweets and muesli bars
- Go easy on desserts and take away foods

Limit the amount of fat you eat:
- Reduce your intake of snack foods such as biscuits, cakes, chips, crisps and chocolate
- Reduce the amount of fat or oil used in cooking
- Choose low fat or reduced fat dairy foods such as milk, yoghurt and cheese.
- These products still have all the calcium you need for your bones
- Avoid eating cream or sour cream
- Trim all the fat off your meat before cooking
- Remove skin from chicken
- Limit high fat take-away foods

Try to minimise snacking but if you do need to snack, choose options such as fresh fruit, low sugar yoghurt, dry biscuits with reduced fat hard cheese.

Try to do as much exercise as you can. Regular exercise can help prevent excess weight gain. Aim for no less than three times 30 minute sessions per week.

References:
How do we measure weight?

The amount of weight you should gain in your pregnancy depends on your pre-pregnancy weight. You need to know your height (without shoes) and weight (in light clothing) to calculate your body mass index (BMI), or your weight adjusted for your height.

On the following graph trace across the line for your height and up for your weight and this will tell you what your BMI is.

Expected weight increase per trimester of pregnancy:

<table>
<thead>
<tr>
<th>BMI</th>
<th>Underweight</th>
<th>Healthy/Normal weight range</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>BMI</td>
<td>Less than 18.5 kg/m²</td>
<td>18.5 – 24.9 kg/m²</td>
<td>25-29.9 kg/m²</td>
<td>Higher than 30 kg/m²</td>
</tr>
<tr>
<td>First Trimester</td>
<td>1 – 3 kg</td>
<td>1 – 3 kg</td>
<td>0 – 1 kg</td>
<td>0 – 1 kg</td>
</tr>
<tr>
<td>Second Trimester</td>
<td>5 – 7 kg</td>
<td>5 – 6 kg</td>
<td>3 – 5 kg</td>
<td>2 – 4 kg</td>
</tr>
<tr>
<td>Third Trimester</td>
<td>6 – 8 kg</td>
<td>5 – 6 kg</td>
<td>4 – 5 kg</td>
<td>3 – 4 kg</td>
</tr>
<tr>
<td>Total in Pregnancy</td>
<td>12 – 18 kg</td>
<td>11 – 16 kg</td>
<td>7 – 11 kg</td>
<td>5 – 9 kg</td>
</tr>
<tr>
<td>Twin Pregnancy</td>
<td>16 – 24 kg</td>
<td>14 – 22 kg</td>
<td>11 – 19 kg</td>
<td></td>
</tr>
</tbody>
</table>

Institute of Medicine Guidelines 2009

What are the risks of gaining too much weight during your pregnancy?

Most pregnancies are uncomplicated. However, gaining too much weight or being over your most healthy weight increases the risk of a number of pregnancy complications. The higher your BMI the more at risk you are of the following:

When you are pregnant:
- Gestational diabetes – a form of diabetes that occurs in pregnancy
- Pre-eclampsia – high blood pressure and loss of protein in the urine
- Abnormalities of your baby’s growth, development and general health
- Sleep apnoea – a condition that causes you to temporarily stop breathing while you are sleeping

During labour:
- Failure of labour to progress
- Shoulder dystocia (the baby’s shoulders get stuck during birth)
- Difficulties monitoring the baby’s heart
- Difficulties with providing satisfactory pain relief in labour
- Increased risks with attempted vaginal birth after a previous caesarean section
- Increased need for emergency caesarean section
- Increased risk of complications related to caesarean section

After the birth of your baby:
- Increased risk of wound infection, blood clots, postnatal depression

How much weight should I gain in my pregnancy?

The amount and pattern of weight gain varies for each woman and each pregnancy. The following table is a general guide to expected weight gain. Minimal weight gain is expected in the first trimester of pregnancy.

Your healthcare professional is always available to discuss any concerns with you.
Childbirth and Early Parenting Education at Bendigo Health

At Bendigo Health we offer the following sessions to help you prepare for your transition to becoming a new parent. To make the most of your time with the educator, we recommend reading the Pre Reading material before attending class. *Cost of $40 includes all 3 classes on offer at Bendigo Health.*

**Physio:** 2 hour class *(Ideally at 22 to 26 weeks of pregnancy)*

At Bendigo Health we have a Women’s Health Physiotherapist, who can help you avoid common pregnancy related musculo-skeletal issues. This 2 hour class is aimed at teaching practical skills to reduce the discomforts of pregnancy. A second class after the birth to aid recovery in the first few months after the birth of your baby. Along with massage and relaxation, this class also covers back, pelvic floor and abdominal muscle exercises.

**Labour and Birth:** 3 hour class *(Ideally at 26 to 30 weeks of pregnancy)*

*See Over for Recommended Pre-Reading*

By booking into one of our birthing classes, you will be able to consolidate your knowledge from the on-line learning package by asking questions of our Midwife / Birth Educator. A tour through the new birthing and postnatal facilities at Bendigo Health will be included. You have a choice of: Wednesday evening, Sunday morning or Sunday afternoon. Women planning a VBAC or second baby can attend a specific session to meet their needs. There is also a designated class for the Young Pregnant and Parenting age group (20 yrs and under).

**Breastfeeding:** 1 hour class *(Ideally at 28 to 32 weeks of pregnancy)*

A Lactation Consultant will explain breastfeeding and normal newborn feeding patterns in the first weeks of life. They will also discuss strategies to assist with this transition.

Cut here and return by 20 weeks for optimal class choice

Name: ___________________________________________________ D.O.B.: _ _ / _ _ / _ _
Mob Phone _______________________________________________ Baby Due: _ _ / _ _ / _ _
Person attending birthing Class with you: ________________________ U.R. (if known) __________________
E-mail _____________________@_____________________________ Baby Number: 1 2 3 4

- Physio: YES / NO
- Birthing: Wednesday 6pm to 9pm YES / NO
- Birthing: Sun 9am to 12 noon YES / NO
- Birthing: Sun 1pm to 4pm YES / NO
- Young Pregnant Parenting YES / NO
- Breastfeeding YES / NO

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Payment can be made at Accounts: ground floor – New Bendigo Hospital
Or mailed to CBPE, P.O. Box 126, Bendigo Vic 3552 (please ensure payment details completed – see over)
Or Form can be scanned and emailed to child_birth@bendigohealth.org.au (again – payment details required to avoid processing delays)
Voice Mail may be left on 5454 7285 (answered Thursdays only)
Stages of labour:
www.thewomens.org.au
www.pregnancybabybirth.org.au
www.babycentre.com.au

Coping strategies for birth:
www.ourbodiesourselves.org
http://www.ourbodiesourselves.org/health-info/non-medication-coping-strategies/

Pain relief options for birth:
www.betterhealth.vic.gov.au
www.pregnancybabybirth.org.au
www.thewomens.org.au

Instrumental Birth:
www.babycentre.com.au
www.pregnancybabybirth.org.au

Caesarean Birth:
www.betterhealth.vic.gov.au
www.thewomens.org.au

The first few moments of life for a baby:
www.babycentre.co.uk
http://www.babycentre.co.uk/a1043124/how-your-baby-might-feel-after-the-birth

Benefits of Skin to Skin at Birth:
www.fitpregnancy.com
www.breastfeedinginc.ca
http://www.breastfeedinginc.ca/content.php?pagename=doc-SSC

Caring for your Newborn Baby:
www.raisingchildren.net.au
http://raisingchildren.net.au/newborns/newborns.html
www.babycentre.com.au

Cut here and return by 20 weeks for optimal class choice

Credit Card Details:  □ Master Card  □ Visa Card
□ Amount to be deducted:  □ $40  □ $20 (H.C.C. holders)
□ No: ___ / ___ / ___ / ___ Expiry Date: ___ / ___
□ Name on Card: ___________________________ Signature: ____________________
□ H.C.C.  YES / NO # ___ / ___ / ___
□ A.T.S.I.  YES / NO

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