



# Ballarat Health Services

## GP Antenatal Shared Care Manual





### Acknowledgements

Ballarat Health Services GP Liaison Unit has worked closely with the Ballarat Health Services Maternity Unit, its Specialists and Midwives, the Ballarat District Division of General Practice (BDDGP) and other key clinicians to develop the Antenatal Shared Care Manual.

The purpose of the Manual is to provide clear guidelines for General Practitioners (GPs) involved in the shared care of low-risk antenatal patients with Ballarat Health Services and to improve the quality and convenience of care for these women.

A team care approach and effective communication channels between all healthcare providers are essential in the provision of high quality antenatal care for women participating in shared antenatal care.

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- The Mater Mothers' Hospital, Brisbane – Mater Mothers' Hospital GP Maternity Shared Care Guideline October 2010
- King Edward Memorial Hospital, Perth – Antenatal Shared Care Guidelines for General Practitioners 4<sup>th</sup> Edition
- The Shared Maternity Care Collaborative – Mercy Hospital for Women, The Royal Women's Hospital, Western Health and Northern Health – "Guidelines for Shared Maternity Care" Affiliates 2010

For further assistance or to access this document on-line please go to [gp.bhs.org.au](http://gp.bhs.org.au)

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### **Disclaimer**

This Manual has been developed to assist in the provision of shared antenatal care at Ballarat Health Services.

Irrespective of this Manual, every health service provider and health professional must individually exercise the standard of professional judgment and conduct expected of them in selecting the most appropriate care for a pregnant woman and in the management of her pregnancy.

Ballarat Health Services cannot and does not warrant that the information contained in this Manual is in every respect accurate, complete or indeed appropriate for every woman and her pregnancy.

Accordingly, Ballarat Health Services will not be held responsible or liable for any errors or omissions that may be found in any of the information set out in this Manual.



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### 1. Introduction

Pregnancy and childbirth are very significant events in the life of a woman and her family. There are special needs throughout the pregnancy relating to both the mother and to her unborn foetus, and which need to be managed by the medical team, as well as ensuring that pre-existing medical conditions in the mother continue to be looked after.

This care throughout the antenatal period can be conducted following a wide variety of different models whereby the care of the patient is provided by, at one end of the spectrum, a sole practitioner managing the woman and her pregnancy through to and including her delivery, to a system whereby a number of practitioners and agencies are involved and who share the management of the patient.

Most commonly, antenatal care is delivered in a model involving some form of sharing, and it is vital that there are good communication channels and consistent guidelines in place to enable the safe conduct of the pregnancy.

With their knowledge of, and rapport with their patients, general practitioners are in an ideal position to be able to conduct a large component of this care.

The Ballarat Health Services General Practitioner Antenatal Shared Care Program is the model of care whereby the majority of the antenatal care is provided by the GP, with a number of scheduled visits to the antenatal clinic, and with the delivery being conducted at the maternity unit at Ballarat Health Services.

A woman will enter the program after having had an initial visit to her general practitioner and then being referred to the hospital antenatal clinic to book in and to have an obstetric assessment. At this point her suitability to be included in the Ballarat Health Services Antenatal Shared Care Program will be determined, following the criteria as outlined in this guide.

She will then attend her GP for her routine antenatal care as per the guidelines set out in this document.

The hospital retains the responsibility for her intrapartum and early postpartum care.

Involvement in the antenatal shared care program is an option for the pregnant woman with **low** risk factors as defined in this Manual. At all times, general practitioners are able to consult with or refer to the Ballarat Health Services maternity team if problems arise.

While it is not necessary that the GP wishing to conduct shared care holds the DRANZCOG (Diploma of the Royal Australian College of Obstetricians and Gynaecologists), they should have adequate knowledge and skill in obstetric care and be familiar with the policies of the Ballarat Health Services maternity unit.



## 2. Culturally responsive antenatal care

While many Aboriginal and Torres Strait Islanders women experience healthy pregnancies, for many, poor health and socially disadvantage contribute to poorer perinatal outcomes than those experienced by non-Indigenous women.

Involving women in decision-making about their health care during pregnancy has been endorsed as a key feature of good quality maternity care. (1) Improving communication, making sure there is sufficient time to discuss the woman's maternity care greatly assists this process.

*"Aboriginal peoples and Torres Strait Islanders should access services and health care not just at a level enjoyed by other Australians (principle of equality) but at one that reflects their much greater level of health care need (principle of equality)". (Couzos & Murray 2008)*

Ballarat Health Services has both an Indigenous midwife and an Indigenous social worker to assist Aboriginal and Torres Strait Islander pregnant women. For further information please contact the numbers listed below.

The midwife for Indigenous women can be contacted on **5320 4410** or **0466 207 273**

The Indigenous social worker can be contacted on **5320 4367**

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1. Chalmers B, Mangiaterra L, Porter R (2001) WHO Principles of perinatal care: the essential antenatal, perinatal & post partum care course. Birth 28:202- 07. Couzos S & Murray RB (2008) Health, human rights and the policy process. IN ABS (2008)



### 3. How do I become involved in the Ballarat Health Services Antenatal Shared Care Alignment Program?

Ballarat Health Services is committed to supporting all GPs wishing to undertake antenatal shared care to maintain their skills and to keep abreast of any changes in protocols and procedures. The Ballarat Health Services Antenatal Shared Care Alignment Program has been designed to provide a framework to facilitate this process, and to assist GPs and the hospital to work together to provide optimal care for their shared antenatal patients.

It is desirable that GPs attain 40 category 1 points and/or 12 category 2 points in women's health each triennium. To ensure that GPs will have the opportunity to fulfil this requirement, each year, under the auspices of the Ballarat Health Services Maternity Unit, Ballarat Health Services GP Liaison Unit and the Ballarat and District Division of General Practice, suitable educational sessions will be provided.

In joining the Alignment Program, it is acknowledged by GPs that they will maintain their medical registration, together with current medical indemnity insurance, have suitable equipment, including a means of listening to the fetal heart rate, in their rooms, to enable an adequate assessment of the antenatal patient. They will also agree to attend appropriate educational activities, and to be familiar with the policies of Ballarat Health Services.

GP registrars may also join the program providing their supervising GP participates in antenatal shared care.

The risk of litigation in the practice of obstetrics mainly relates to the conduct of labour. However, every GP should check with their medical defence organisation as to the suitability of the cover provided.

In summary, GPs participating in the Alignment Program are encouraged to:

- Provide referrals, preferably generated on medical software and with appropriate clinically relevant information to ensure the provision of comprehensive care.
- Ensure pathology and radiology reports accompany all referrals to the clinic and request copies of all subsequent pathology and radiology results be sent to Ballarat Health Services antenatal clinic.
- Communicate with the appropriate clinician or antenatal shared care coordinator as necessary.
- Participate in continuing medical education throughout each triennium.
- To provide high quality care to their patients following guidelines such as this Manual or as described in the RACGP JCC Obstetrics document on antenatal shared care as detailed at the following links:

[www.ranzcog.edu.au/publications/collegestatements.shtml](http://www.ranzcog.edu.au/publications/collegestatements.shtml)

[www.racgp.org.au/scriptcontent/search/searchracgppresults.cfm?section=search&cx=000337812831128799297%3Acwnpztvg-0a&cof=FORID%3A11&searchterm=antenatal+shared+care](http://www.racgp.org.au/scriptcontent/search/searchracgppresults.cfm?section=search&cx=000337812831128799297%3Acwnpztvg-0a&cof=FORID%3A11&searchterm=antenatal+shared+care)

For further information, contact the antenatal shared care coordinator (ANSCC) at Ballarat Health Services on **5320 4533**.



## 4. Suitability for patients to be enrolled in the GP Antenatal Shared Care Program - inclusion & exclusion criteria

Whilst many women will be suitable for GP antenatal shared care, their medical and/or obstetric condition may place them or their unborn fetus at an increased risk of an adverse outcome.

As a result of this, a list of inclusion and exclusion criteria has been developed. However, it may still be appropriate for some women with these conditions to participate in a form of shared care. This may involve the need for extra visits and investigations, and an individual care plan will be made by the hospital doctor, and documented in the hand held record.

The suitability of a patient to be managed by her GP may depend on the level of training, expertise and willingness of the GP to manage the patient's care. Indeed in some circumstances, it may be desirable for the GP to continue managing the patient because of their prior knowledge of the woman's medical history.

It is the hospital's responsibility to determine a woman's suitability for antenatal shared care, and an assessment of the woman's risk category and her eligibility is made at the initial booking-in appointment at the clinic. However, during the progress of the pregnancy, the patient's condition may alter, with the result that shared care is no longer appropriate.

Consultation with an obstetrician is recommended at any time if there are any changes in the woman's condition.

**It is useful for the GP to discuss and promote antenatal shared care at the time of referral, and to indicate the woman's preference on the referral.**

### Inclusion criteria:

- Women who are requesting antenatal shared care
- Parity < 5
- Body mass index (BMI) >17 and <35 at booking
- Age: <42 years at booking
- Gestational diabetes which is diet-controlled and the woman is otherwise well





**Exclusion criteria:**

Women will be assessed by the Ballarat Health Service maternity team before they can be confirmed as suitable for ongoing GP shared care. They will be assigned to a risk category by considering their previous medical and obstetric history and current medical condition.

The patient should default to the high risk category if there is any uncertainty and during the pregnancy the category of risk may alter if clinical developments dictate. Category changes should only occur after consultation with an obstetrician.

**Medical/Surgical:**

Alcohol abuse	Drug abuse and chemical dependency
Anaemia (Hb<90g/l not responding to treatment)	Endocrine disorders
Severe asthma	Epilepsy requiring drug therapy in the past 12 months
Autoimmune disorders (including anti-phospholipid antibodies)	Gastroenterological disorders (subject to obstetric review)
Bleeding disorders and/or haemolytic disease	Major haemoglobinopathies
Pre-pregnancy BMI>35 or <17	HIV
Cardiac disease	Hypertension
Diabetes mellitus, types I and II in consultation with obstetrician	Infectious diseases of clinical significance (eg acute onset hepatitis C)
Neurological disorders	Respiratory disease
Some psychiatric disorders e.g. severe postnatal depression or puerperal psychosis (subject to psychiatric advice)	Thrombo-embolic disease
Renal disease	Thyroid disease (uncontrolled)
Malignant disease	

**Obstetric/Gynaecological:**

Absence of antenatal care in a woman who is 28 weeks gestation or more at first presentation	Intrauterine Growth Restriction (IUGR) in last pregnancy
Ante-partum haemorrhage (subject to obstetric review)	Rhesus Isoimmunisation or other significant blood group antibodies
Birth weight <2500gms or >4500gms	Multiple pregnancy
Foetal abnormality requiring specialised care	Recurrent miscarriage or mid-trimester abortion
Grand multiparity >5	Uterine surgery
Severe pre-eclampsia including HELLP Syndrome	Still birth or neonatal death
Maternal congenital abnormality	Pre-term delivery <34/40
Placental abnormalities e.g. placenta accreta, placenta praevia, molar pregnancy	

**Please note:-** Certain clinical situations may allow for variations to these criteria and the patient’s status will require further discussion with the obstetrician or registrar on a case by case basis.



## 5. Booking-in & first hospital antenatal visit at Ballarat Health Services

To participate in the antenatal shared care program with Ballarat Health Service, a woman should be referred to the antenatal shared care clinic, by faxing a referral letter to the clinic, ideally at 9-10 weeks gestation. This will then enable an appointment to be made for the woman to be seen at 12-16 weeks gestation.

**In the first instance, the GP referral should be faxed to the antenatal shared care clinic (maternity outpatients) on 03 5320 4324.**

Once the referral has been received, the maternity outpatient clinic staff, will directly contact the woman to organise their Initial **booking-in appointment** which includes their **first clinic visit** (between 12-16 weeks gestation).

**Please note and advise your patient that this appointment cannot be made in person at the Clinic.**

All women will have a detailed health and social assessment performed at this visit by a midwife. This provides the opportunity to explore many aspects of maternity care, and for women to discuss models of care. At this visit the woman is officially booked for birth at the hospital. The woman then sees a doctor for a detailed clinical assessment. As part of this process, a decision is made by the hospital as to whether shared maternity care is appropriate.

Women at a more advanced stage in their pregnancy, or those with obstetric complications should be referred to the antenatal clinic as soon as possible.

If GPs have any concerns regarding their patients they are encouraged to contact the antenatal shared care coordinator on **5320 4533**.

The Victorian Statewide Referral Form + Maternity template is available for referrals to Ballarat Health Service antenatal clinic. When incorporated into your software, this form can auto-populate both demographic and clinical information which will assist in the management of your referral.

Alternatively, your medical software may already contain an appropriate referral form, but please ensure that all demographic and clinical information is included. For the benefit of the clerical staff, it is especially important to ensure that the demographic information such as the patient's date of birth, current address, current phone number and medicare number are documented.

**The following is a link to the Victorian Statewide Referral Form:-**

**[www.gpv.org.au/content.asp?cid=11,137&VSRF](http://www.gpv.org.au/content.asp?cid=11,137&VSRF)**



## Clinic Overview

<b>Maternity Booking Clinic (MBC)</b>	Provides initial booking-in visit with a midwife where appropriate paperwork is completed, history collected and documented, and initial midwifery care and education is provided.
<b>Maternity First Visit Clinic (MFVC)</b>	Provides initial obstetric visit following patient booking-in, where patient is assessed by obstetric staff, history reviewed and model of pregnancy care assigned. Run in conjunction with MBC so that booking and first visit completed at one visit to BHS.
<b>Antenatal Clinic – Consultant Care (ANC-CC)</b>	Provides consultant-led pregnancy care for women with a high risk pregnancy or undertaking shared care. Women are seen by obstetric staff at every visit and a midwife or other relevant health care providers as required. (The midwife visit is attended within ANC-MWC on the same day as the ANC-CC visit).
<b>Antenatal Clinic – Midwife Care (ANC-MWC)</b>	Predominantly provides midwife-led pregnancy care for women with a low risk pregnancy. Women are seen by a midwife at every visit and referred to the consultant care clinic as required. Also provides appropriate midwife visits for women in the high risk model of care.
<b>Maternity Day Assessment Service (MDAS)</b>	Provides a service for women with complications or risks in pregnancy who require a short admission for further monitoring or assessment. Care provided by obstetric staff, midwife and ultrasonographer. Runs Tuesday and Thursday afternoons.
<b>Pregnancy Assessment Service (PAS)</b>	Provides a service for pregnant women <i>over 20 week's gestation</i> who require assessment in between their scheduled antenatal visits. The service is provided 24/7 – Monday to Friday 0830-1700 it runs out of Maternity Outpatients; at all other times it runs out of Labour Ward on the Maternity Unit.



## 6. The maternity hand held health record

A hand held maternity health record is an important method for communication between the patient, the GP, and the Ballarat Health Services maternity unit. Used appropriately, it will ensure that there is a clear and concise record of a woman's progress through her pregnancy, available to treating practitioners at all times.

Ballarat Health Services utilises a computer-based record, known as 'Birthing Outcomes System' and a printout after each visit is generated and handed to the Patient for inclusion in her hand held record.

Along with this information, copies of pathology and imaging results should be included.

The Victorian Maternity Record (VMR) is a Department of Health initiative, providing a useful handbook: 'A guide to tests and investigations for uncomplicated pregnancies', together with a manual recording system in which to record details of tests and progress.

It is important that a record in a readily available format is made of a patient's medical and obstetric history, together with progress notes for the current pregnancy and relevant investigation results.

Important notes regarding the use of the **maternity hand held record**:

- **It is important that an entry is made in the maternity hand held record by all care providers at each and every visit, and it must be sufficient to meet the care provider's duty of care in diagnostic and treatment decisions.**
- All care providers should record the routine examination findings at each visit.
- All care providers should record any tests requested and the result, when available. When a test is performed in the community, a **copy of the results** (if available) should accompany the woman to her hospital visit.
- All original pathology and ultrasound results are to be recorded in the **maternity hand held record**.
- Included will be a printout from the Ballarat Health Services maternity data base. This will be in preference to the use of handwritten notes.
- Incorporated into the record is a section beneath each visit designed to record items of concern which may require further action later in the pregnancy. This is an invaluable section for all members of the team to become aware of and to utilise.

The current hand health record is based on the Victorian Maternity Record and should be given to the woman, either by the GP at her first antenatal visit after confirmation of pregnancy, or be provided by the antenatal shared care clinic.

Patients should be encouraged to carry it with them at all times throughout their pregnancy and to bring it with them to all appointments during the pregnancy, and including those with other health professionals.



## 7. Pre-pregnancy counselling

GPs are in a unique position of seeing a woman in the context of her life prior to her pregnancy and are able to provide advice and counselling and undertake any Investigations as appropriate.

Many opportunities exist to introduce preventative measures when the woman is not pregnant and they are often best initiated then. Folate supplementation is a notable example of this, where it is desirable to commence taking folic acid for at least 1 month before conception.

Issues which can be addressed include:

- Family planning
- Previous obstetric history
- Previous medical history including conditions which require ongoing management and surveillance e.g. endocrine disorders (including thyroid disorders and diabetes), hypertension, epilepsy, asthma, haematological disorders etc
- Mental health and wellbeing include any history of depression or other psychiatric illness
- Family history and genetic history e.g. thalassaemia
- Medication use both intermittent and long-term e.g. antidepressants, anticonvulsants
- Possible substance abuse including tobacco, alcohol and illicit drugs
- General physical assessment especially weight and BMI, and hypertension
- Gynaecological assessment including pap screening
- Vaccination history and updating as necessary e.g. rubella, hepatitis B, influenza, varicella
- Dietary supplementation (refer to the recommendations following)
- Awareness of, and measures to avoid some of the specific infectious diseases which may have a direct impact on a pregnancy and the foetus



## 8. Dietary supplementation

### Folate supplementation –

Women at high risk: 5 mg/day, ideally beginning at least 1 month prior to conception and for the 1<sup>st</sup> trimester

Most women: 0.5 mg/day, ideally beginning at least 1 month prior to conception and for the 1<sup>st</sup> trimester.

### Iron supplementation –

Iron supplementation is not recommended routinely unless there is evidence of iron deficiency anaemia on routine tests throughout the pregnancy

A diet rich in Iron-containing foods should be encouraged, with particular emphasis on those women who have a past history of anaemia, a poor diet, are vegetarians, hyperemesis, or pregnancies close together.

### Iodine supplementation -

The need for iodine supplementation in pregnancy should be discussed with the pregnant woman and those contemplating pregnancy.

The National Health and Medical Research Council recommend the following,

“Women who are pregnant have 220 microgram of Iodine per day (and women who are breastfeeding should have 270 microgram per day). Pregnant and breastfeeding women need to top up their dietary intake because of the increased requirements during pregnancy and breastfeeding and the likelihood that they won’t get enough from their diet and mandatory fortification”. (1)

The national iodine nutrition survey suggests the Australian population is mildly deficient in iodine. (3)

“The NHMRC recommends supplementation of 150 microgram per day to ensure all women who are pregnant, breastfeeding or contemplating pregnancy have adequate iodine status.” (2)

Women with pre-existing thyroid conditions should seek advice from their GP prior to taking a supplement. (2)

Further information on Iodine supplementation is available at the NHMRC website

[http://www.nhmrc.gov.au/files\\_nhmrc/file/publications/synopses/new45\\_statement\\_pdf](http://www.nhmrc.gov.au/files_nhmrc/file/publications/synopses/new45_statement_pdf)

The following is a link to a Department of Health and Ageing website regarding general dietary advice during pregnancy:

[www.healthactive.gov.au/internet/healthactive/publishing.nsf/Content/pregnant-women](http://www.healthactive.gov.au/internet/healthactive/publishing.nsf/Content/pregnant-women)

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2. NHMRC Public Statement January 2010. 3. Australian Population Health Development Principal Committee 2007. *The Prevalence and Severity of Iodine Deficiency in Australia.*



## 9. Determination of the expected date of delivery

Calculation of the expected date of delivery is important to the management of the pregnancy to ensure that the woman's progress through her pregnancy and the development of the foetus are consistent with the expected gestation. In addition, the timing of a number of Investigations is critical for their accuracy and interpretation.

The average duration of a human pregnancy is 266 days from conception, and 280 days from the first day of the last normal menstrual period in a woman with a 26-32 day cycle. If the cycle is outside this range, allowance must be made for this in the calculation.

A rule-of-thumb for calculating the date of confinement is to add 1 year and 10 days to the date of the last normal menstrual period, and then to take 3 months from the total.

However, the Maternity Shared Care Program Wheel, jointly produced by the Ballarat Health Services Maternity Unit, the Ballarat and District Division of General Practice together with the BHS GP Liaison Unit, is a convenient gestation calculator, and also assists in determining the timing of investigations and procedures.

In the not too distant future, it is hoped to be able to provide a computerised version, which will include appropriate prompts.

If uncertain of dates a dating ultrasound may be required to enable accurate timing of the various genetic screening tests.

### **Additional Information:**

If the EDC as calculated by the LNMP coincides within one week of the scan date, the date from the menstrual cycle should be used.

If the LNMP is not known, the date of confinement can be calculated from the 12-13 week scan.



## 10. Antenatal shared care visit schedule

The following information is a summary of the minimum routine antenatal visits for shared antenatal care. It includes brief descriptions of issues to consider at these visits. (4)

Weeks	Antenatal Visits – GP and BHS
12 – 16 Week	<b>GP Visit - Confirm pregnancy</b>
	Obtain medical and obstetric history
	Measure BP, record height and weight and calculate BMI
	Discuss and order routine blood tests after discussion and Informed consent (FBE, blood group and RhD antibodies, rubella antibody titre, hep B, hep C, HIV, syphilis serology). Please ensure that all blood results are copied to BHS antenatal clinic
	Order MSU for microscopy and culture. Copy result to BHS antenatal clinic
	Discuss and offer: ferritin, thalassaemia screen, vitamin deficiency screen if appropriate
	Discuss antenatal screening and testing options, including Down syndrome screening with all women irrespective of maternal age. Order first trimester combined screen (PAPPa and beta-hCG at 10-12 weeks and nuchal translucency at 11-14 weeks)
	If uncertain of dates a dating ultrasound may be required to enable accurate timing of the various genetic screening tests
	Known RhD negative women—discuss antenatal anti-D prophylaxis and the importance of seeking advice following any potentially sensitising events.
	Perform pap smear if due
	Discuss available models of care and provide leaflet - <a href="http://www.bhs.org.au/?q=node/150">www.bhs.org.au/?q=node/150</a>
	Refer to Ballarat Health Services antenatal clinic and include above information
	Provide computer printout if appropriate and put in hand held record if available
	Discuss smoking cessation and mental health and wellbeing
<b>BHS First Antenatal Clinic Visit –and Initial booking-in appointment</b>	
Routine antenatal assessment *	
Review results of pathology tests, ultrasound and other screening tests	
Initiate the maternal serum screening test (or quadruple test) at (15-17 weeks) if required	
Confirm estimated date of confinement from information available	
Final recommendation regarding model of care to be made after consideration of any risk factors	
Discuss and provide referral for the routine 17-22 week ultrasound scan (ideally between 18-20 weeks)	
Discuss and confirm the planned schedule of antenatal visits	
Document all actions and decisions in the hand held record and the maternity database	
At 16 Weeks (GP)	<b>GP Visit</b>
	Routine antenatal assessment *
	Review results of pathology tests, ultrasound and other screening tests.
	Confirm EDC
	Discuss and confirm referral for 17-22 week ultrasound scan
Document in the hand held record and provide computer printout if appropriate	





20 – 34 Weeks	<b>At 20 Weeks (GP)</b>	<b>Appointment with GP</b>
		Routine antenatal assessment *
		Begin measurement of the fundal height to assess foetal growth and repeat at each Antenatal assessment. Discuss and review 17-22 Ultrasound scan results with the patient
		Check Placental position on the 17-22 week Ultrasound Scan and if low-lying arrange for a further scan for Placental localisation at 32-34 weeks gestation
		Reinforce all aspects of health promotion and parent education
		Reassess planned schedule of care and identify women who need additional care
		Document in the hand held record and provide computer printout if appropriate
	<b>At 24 Weeks (GP)</b>	<b>Appointment with GP</b>
		Routine antenatal assessment *
		Gestational diabetes screening offered to all Women routinely - Non-fasting 75 gm 1 hour glucose challenge test or, <b>if risk factors for diabetes are present</b> , order a 2 hour fasting 75 gm oral glucose tolerance test. <b>Order FBE and Serum antibody with the gestational screening test.</b>
		If RhD negative, order antibody screen at 26-28 weeks, BEFORE offering administration of 625 IU Anti-D Immunoglobulin – to be given at the 28 week visit at the <b>antenatal clinic</b> if required
		Discuss birth plan
		Discuss infant feeding
		Discuss smoking cessation and mental health and wellbeing
		Reinforce all aspects of health promotion and parent education
	Document in the hand held record and provide computer printout if appropriate	
<b>At 28 Weeks (BHS visit)</b>	<b>BHS Antenatal Clinic Visit</b>	
	Routine antenatal assessment *	
	Review, discuss and take action as required of all tests taken prior 28 weeks. Document all results and actions	
	If RhD negative and antibodies not present, recommend and administer 625 IU Anti-D immunoglobulin IM	
Discuss vitamin K and hep B vaccination		
<b>At 30 &amp; 32 Weeks (GP)</b>	<b>Appointment with GP</b>	
	Routine antenatal assessment *	
	Review, discuss and document results of any tests taken	
	Document in the hand held record and provide computer printout if appropriate.	
<b>At 34 Weeks (GP)</b>	<b>Appointment with GP</b>	
	Routine antenatal assessment *	
	Repeat ultrasound scan if placenta shown to be low-lying on 17-22 week ultrasound scan	
	Reassess planned schedule of care	
	Discuss birth plan	
Document in the hand held record and provide computer printout if appropriate		



36 – 40+ Weeks Review 1 / 52	<b>At 36 Weeks (BHS)</b>	<b>BHS Antenatal Clinic Visit with obstetrician and/or senior midwife</b>	
		Swabs taken for GBS screening (Group B Streptococci)	
		Discuss neonatal vitamin K and hepatitis B vaccination. Obtain verbal and written consent	
		If RhD negative, recommend and administer 625 IU Anti-D Immunoglobulin	
		Repeat FBE if required	
		Pre booked LUSCS to have pre admission anaesthetic discussion	
			Document in the hand held record and provide computer printout if appropriate
	<b>At 37, 38 &amp; 39 Weeks (GP)</b>	<b>Appointment with GP</b>	
		Routine antenatal assessment *	
		Confirm understanding of signs of labour and Indications for admission to hospital	
		Provide additional information as required	
			Document in the hand held record and provide computer printout if appropriate
<b>At 40 Weeks (BHS)</b>	<b>Appointment with BHS</b>		
	Routine antenatal assessment *		
	Provide additional information as required		
		Document in the hand held record and provide computer printout if appropriate	
<b>At 41 Weeks + (BHS)</b>	<b>BHS Antenatal Clinic Visit with obstetrician</b>		
	Routine antenatal assessment *		
<b>Postnatal Care</b>			
<b>1 Week (BHS)</b>	Midwifery extended postnatal visit provided within 1 week of birth		
<b>6 Week (GP)</b>	Postnatal and 6 week check undertaken by GP		

**KEY:**      BHS Antenatal Clinic Visits - total of 3–4 visits      GP Antenatal Visits - total of 7–8 visits

**Please note that** this GP visit schedule is a guide only, and each GP should determine the required number of visits with their patient.

\* Routine antenatal assessment =BP, oedema, foetal growth measurement- fundus to symphysis pubis from 24 weeks. Foetal movement, foetal heart rate, presentation/position (from 3<sup>rd</sup> trimester), reassess identified risks eg; smoking, alcohol, depression



### 11. Routine antenatal examinations

\* **The routine antenatal examination** as referred to in the previous schedule of visits includes assessment of the following:

* General wellbeing
* Blood pressure check
* Measurement of fundal height in centimetres
* Foetal movements from 20 weeks
* Auscultation of the fetal heart
* Checking foetal presentation from 30 weeks
* Inspection of legs for oedema (a sign of pre-eclampsia and thromboembolic disease and looking for other signs of thromboembolic disease
* Consider urine testing
* Reassess identified risk factors (e.g. smoking, alcohol and depression
* Routine weighing is not advised unless there are concerns about an increasing BMI

**All results and findings must be recorded in the hand held record**

### 12. Routine antenatal investigations

GPs are requested to order these screening tests and ensure a copy is sent to the antenatal clinic and ideally provide a copy to the patient as well.

* FBE
* Blood group and Rh antibodies
* Urinalysis – MSU M&C
* Hepatitis B screening
* Hepatitis C screening
* HIV serology
* Syphilis serology
* Rubella antibodies
* Pap smear
* 17-22 week ultrasound

### Other tests for consideration

Several other tests which may be considered for screening, depending on the results of the routine tests, the woman’s history and examination, and the socio-economic background include, :-

- \* **Haemoglobin electrophoresis** to exclude haemoglobinopathy e.g. thalassaemia, sickle cell disease
- \* **Vitamin D** (consider in women who are dark-skinned, non-caucasian women, veiled- women and those with low sunlight exposure)
- \* **Varicella antibodies** (when there is no known history of exposure or vaccination)

**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 has occurred.**



### 13. Genetic testing and chromosomal abnormality screening

#### Screening for foetal chromosomal abnormalities e.g. Down syndrome

Screening for fetal chromosomal abnormalities should be discussed with, and offered to women of ALL ages:

#### Understanding antenatal screening tests

What is the test?	When is it done?	What information does the test provide?
1 <sup>st</sup> trimester combined screen	<b>10-12 weeks</b> - Pregnancy Associated Plasma Protein-A (PAPP-A) & beta hCG <b>11-14 weeks</b> - Ultrasound for nuchal translucency	Detects up to 90% of Trisomy 21 (Down syndrome) and Trisomy 18 (Edward's syndrome) Confirms EDC, Identifies twins
Maternal serum screening test (quadruple test) 2 <sup>nd</sup> trimester	<b>14-19 weeks</b> - Beta hCG, Alpha Foetoprotein, Inhibin A, Unconjugated (O)estriol (UE3) (recommended between <b>15-17 weeks</b> )	Detects 70-75% of Down syndrome - Trisomy 21 Gives a risk result for Neural Tube Defects & Edward's Syndrome
2 <sup>nd</sup> trimester ultrasound	<b>18-20 weeks</b>	Detects many physical fetal abnormalities including spina bifida Localisation of the placenta and measurement of fetal growth.

#### Diagnostic Tests for Women shown to be at increased risk of Foetal Abnormality

What is the test?	When is it done?	What information does the test provide?
Chorionic villous sampling	<b>10-13 weeks</b>	Diagnosis of all major chromosomal abnormalities
Amniocentesis	<b>15-19 weeks</b>	Diagnosis of all major chromosomal abnormalities

(Detection rate data from Genetic Health Services Victoria, reported by the Public Health Genetics Unit, Murdoch Children's Research Institute, 2002)

#### **Explanatory notes:**

- Screening tests for foetal chromosomal abnormalities are dependant upon accurate gestational age. If dates are uncertain, a 'dating scan' early in the first trimester is required for appropriate screening tests to proceed.
- The first trimester combined screen consists of a blood test for PAPP-A (Pregnancy Associated Plasma Protein-A), B-HCG and nuchal translucency ultrasound scan.
- When requesting a nuchal translucency scan, please indicate the nominated pathology provider on the scan referral so that a combined result can be calculated on the day of the scan.

**Please note:** When ordering the first trimester combined screen, the blood test should be performed before the nuchal translucency scan so that the result is available on the day of the scan to enable a single adjusted risk to be calculated.



The result should only be given as a combined adjusted risk. If the gestational age is altered by the scan by more than four days the biochemistry report should be altered by contacting the relevant pathology provider.

### An important note regarding the routine 17-22 week ultrasound scan

All pregnant women should be offered an ultrasound scan to be performed ideally between 18-20 weeks gestation. However, this scan is not endorsed as a screening test for Down syndrome and if screening for this condition is requested by the Woman during the 2<sup>nd</sup> trimester then the appropriate Investigation is the maternal serum screening test, taken between 14-19 weeks.

### Genetic counselling, amniocentesis and chorionic villous sampling

If as a result of screening, the woman is shown to be at risk of her foetus having a chromosomal abnormality, referral should be made to one of the genetic services at either the Mercy Hospital for Women or The Royal Women's Hospital.

Genetic counselling may also be required or requested for a variety of reasons, including the following:

- If a woman wishes to discuss screening and the possibility of further testing
- If a woman or her partner has a Genetic condition or a family history of a genetic condition
- Couples with a high risk of having a child with a genetic condition
- If a healthcare provider requires further advice

Information and counselling for women, their families and healthcare providers is available at the genetic services at both the Royal Women's Hospital and the Mercy Hospital for Women, and also from the Victorian Genetic Health Services. The contact details are listed below;

**Royal Women's Hospital** Telephone: 03 83452180 Fax: 03 9344 2121

**Mercy Hospital for Women** Telephone: 03 84584250 Fax: 03 9270 2394

**Victorian Genetic Health Services** Telephone: 03 8341 6201 Fax: 03 8341 6390



## Summary of advice on offering certain tests in the first trimester

Condition	Who to test	Test(s)	Follow up*
HIV	All women	EIA and Western blot Blood-based rapid tests	Antiretroviral treatment in pregnancy prevents transmission
Hepatitis B	All women	Blood test for HBsAg	Vaccination of newborn prevents infection Specialist care and psychosocial support for the woman are required
Hepatitis C	Women with a history of; <ul style="list-style-type: none"> <li>Intravenous drug use</li> <li>Tattoos or body piercing</li> <li>Needle sharing</li> <li>Incarceration</li> <li>Receipt of blood products or invasive procedures overseas or before 1990 in Australia</li> </ul>	Blood test for hepatitis antibody RNA test if antibodies detected	No interventions available to prevent transmission Specialist care and psychosocial support for the woman are required
Rubella	All women	Blood test for rubella antibody	Vaccination after birth protects future pregnancies Inadvertant vaccination in early pregnancy is highly unlikely to harm the baby
Chlamydia	Women younger than 25 years All pregnant women in areas of high prevalence	Antigen detection test Nucleic acid amplification test	Treatment may reduce the risk of preterm birth, premature rupture of the membranes and low birth weight
Syphilis	All women	Treponemal EIA tests Onsite tests	Treatment benefits mother and prevents congenital syphilis Psychosocial support, partner testing and contact tracing required
Asymptomatic bacteriuria	All women	Midstream urine culture	Treatment reduces risk of pyelonephritis
Asymptomatic bacterial vaginosis	Women with a previous preterm birth	Amsel's criteria Nugent's criteria	Early treatment (<20wks) may reduce risk of premature rupture of the membranes and low birth weight
Vitamin D deficiency	Women with considered to be at risk	Blood test for serum 25-OHD	Supplementation may be beneficial for women at high risk of deficiency
Chromosomal abnormalities	All women	Nuchal thickness and maternal serum testing	Identification of chromosomal abnormalities allows decision making about the pregnancy and planning for additional care during and after pregnancy

Notes: EIA = enzyme immunoassay; HBsAg= hepatitis B surface antigen; 25-OHD= 25 hydroxyvitamin D; RNA = ribonucleic acid



## 14. How to manage abnormal results

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 has occurred.

**Any investigations requested by a GP for a pregnant woman under their care must be followed up by the GP concerned. It is the GP's responsibility to follow up all abnormal results irrespective of whether a copy has been sent to the hospital.**

### Full blood examination

Where the haemoglobin is low or red cell abnormalities are present, or the MCV and MCH are low, iron studies including Se ferritin, folate and B12 studies, together with haemoglobin electrophoresis should be requested.

Testing for thalassaemia or other haemoglobinopathies should also be considered routinely for women from regions such as South-East Asia, the Pacific Islands, the Mediterranean, West Africa, the Middle East and in parts of the Indian subcontinent.

Low white cell or platelet counts should prompt discussion with the obstetric registrar or the consultant, together with referral to the Ballarat Health Services antenatal clinic.

### Blood group and antibody screen

Any positive test for antibody levels should prompt referral to the Ballarat Health Services antenatal clinic.

### Rubella titre

A "non immune" level should prompt a note to discuss immunisation with the woman in the postnatal period. **Under no circumstances should immunisation be given in pregnancy.** Contact with young children with rubella should be avoided.

### Syphilis serology

A positive result should prompt referral to the Ballarat Health Services antenatal clinic.

### Hepatitis B and C, and HIV tests

A positive result in any of these tests should prompt immediate referral to the antenatal clinic.

### Maternal serum screening

Abnormal maternal serum screening results should be referred urgently to the participating hospital for counselling with a view to offering chorionic villous sampling or amniocentesis.

### Ultrasound Scanning Results

Any abnormality should prompt discussion and referral to the Ballarat Health Services antenatal clinic.

The 17-22 week ultrasound is especially valuable in localisation of the placenta and if, at the time of this scan, the placenta is shown to be within 2 cm of the internal os, a referral should be made for a repeat ultrasound scan at 32-34 weeks.

If the placenta is covering the os at the 17-22 week scan, this should be discussed with the obstetric registrar or the consultant, and a referral made for a repeat ultrasound scan at 32 weeks.



### **Oral Glucose Challenge Test (OGCT)**

A blood glucose level  $>7.8$  mmol/l after a 50gm glucose load (non-fasting), or  $>8.0$  mmol/l after 75gm glucose load (non-fasting) is a positive test and should be followed up with a fasting 2 hour 75gm glucose tolerance test.

A fasting blood glucose level of  $>5.5$  mmol/l and/or a 2 hour blood glucose level of  $>8.0$  mmol/l is considered to be a positive test and indicates gestational diabetes.

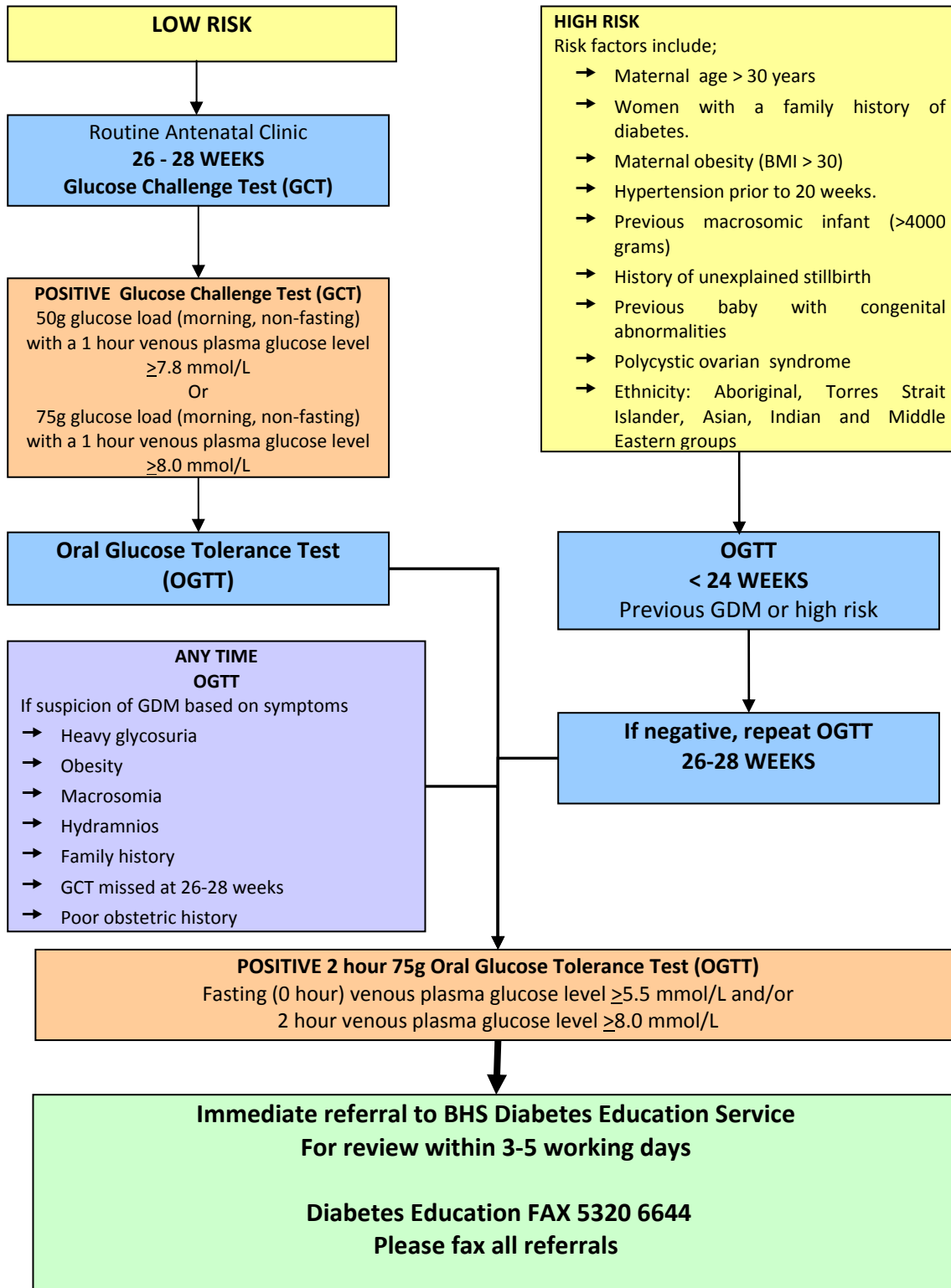
In the first instance, the results and a letter should be faxed to the antenatal shared care coordinator, as well as a referral being made to the diabetes clinical nurse consultant at Ballarat Health Services.

It is important to highlight that the referral is for the management of gestational diabetes in a woman who has previously been booked into the antenatal shared care clinic.





### Gestational diabetes – screening, diagnosis and follow-up at BHS





## Points for management of the patient shown to have diabetes

All patients should perform home blood glucose monitoring 4 times each day - before breakfast, and 2 hours after each meal.

The targets are <5.0 mmol/L fasting and <6.7 mmol/L 2 hours after meals.

Hba1c should be measured at the first visit and repeated monthly. The target level is <6.0%.

## Follow-up of the patient with gestational diabetes

Women who have a history of gestational diabetes should have regular screening:

- All women with previous gestational diabetes to be offered testing for diabetes with a 75g OGTT 6–8 weeks after delivery.
- Repeat testing should be performed every 1–2 years among women with normal glucose tolerance and the potential for further pregnancies.
- Women with an abnormal OGTT (diabetes, impaired glucose tolerance or impaired fasting glycaemia) should be reviewed by the diabetes physician. They should have annual OGTT thereafter.
- If no further pregnancy is planned, follow-up testing should be performed every 1–2 years for women with normal glucose tolerance and the potential for further pregnancies and every 3 years if pregnancy is not possible. More frequent re-testing depends on the clinical circumstances (e.g. ethnicity, past history of insulin treatment in pregnancy, recurrent episodes of gestational diabetes).

## Lifestyle counselling

- Approximately 40 - 50% of women who have had gestational diabetes develop Type 2 diabetes mellitus later in life. Lifestyle counselling for the prevention of diabetes is therefore vital.
- All women with gestational diabetes should be offered information about:
  - Healthy eating patterns (small frequent low fat meals and snacks)
  - Regular physical activity (30 minutes/day – moderate intensity)
  - Weight control
  - Contraception
  - Long term follow-up
  - Preconception counselling
  - Future pregnancy

<http://www.racgp.org.au/diabetes/gestational> accessed 29/04/2011

<http://www.thewomens.org.au/DiabetesMellitusManagementofGestationalDiabetes> accessed 29/04/2011

[www.kemh.health.wa.gov.au/development/manuals/O&G\\_guidelines](http://www.kemh.health.wa.gov.au/development/manuals/O&G_guidelines) accessed 29/04/2011



**Pregnancy management plan for patients with a BMI > 35** <sup>(5)</sup>

	BMI 35 - 39	BMI 40 - 44	BMI > 45
<b>Preconception or first GP visit</b>	Consider 5 mg folate		
<b>First Antenatal Clinic Visit at BHS</b>	Dietitian referral		
	Routine booking bloods plus 75 gm 2 Hour GTT		
	Consider 5 mg folate		
	Routine model of care with shared care GP or midwifery model	Modified care including cons/registrar visits 36w,40w	Modified care including cons/registrar visits 24w, 30w, 36w, 40w
<b>Second trimester</b>	Consider low-dose aspirin if additional risk factors for pre-eclampsia		
	Consider low molecular weight heparin (LMWH) if additional risk factors for DVT		
	Repeat 75 gram 2 hour GTT if previous testing negative		
<b>Third trimester</b>	Additional scan for growth in third trimester if unable to assess clinically	Scan for growth at 28 and 34 weeks anaesthetic referral at 36 weeks	
		Consider notification of wards and theatre of the need for bariatric equipment if required for patient's perinatal care	
<b>Intra-partum</b>	Notify anaesthetic and obstetric medical staff of patient's admission		
<b>Post-partum</b>	Consider LMWH if operative delivery or mobility compromised		
	Consider TED stockings		
	Dietitian referral		
	2 Hour GTT 6 weeks postpartum if gestational diabetes mellitus		

The management of patients with a body mass Index between 35 & 39 may be able to be shared with the GP. Many of those patients whose BMI is above this range will still be suitable for shared care but will need to be seen more frequently in the antenatal shared care clinic. Further treatment, investigations and other consultations e.g. with the anaesthetic department for a pre-anaesthetic assessment, will be organised from there.

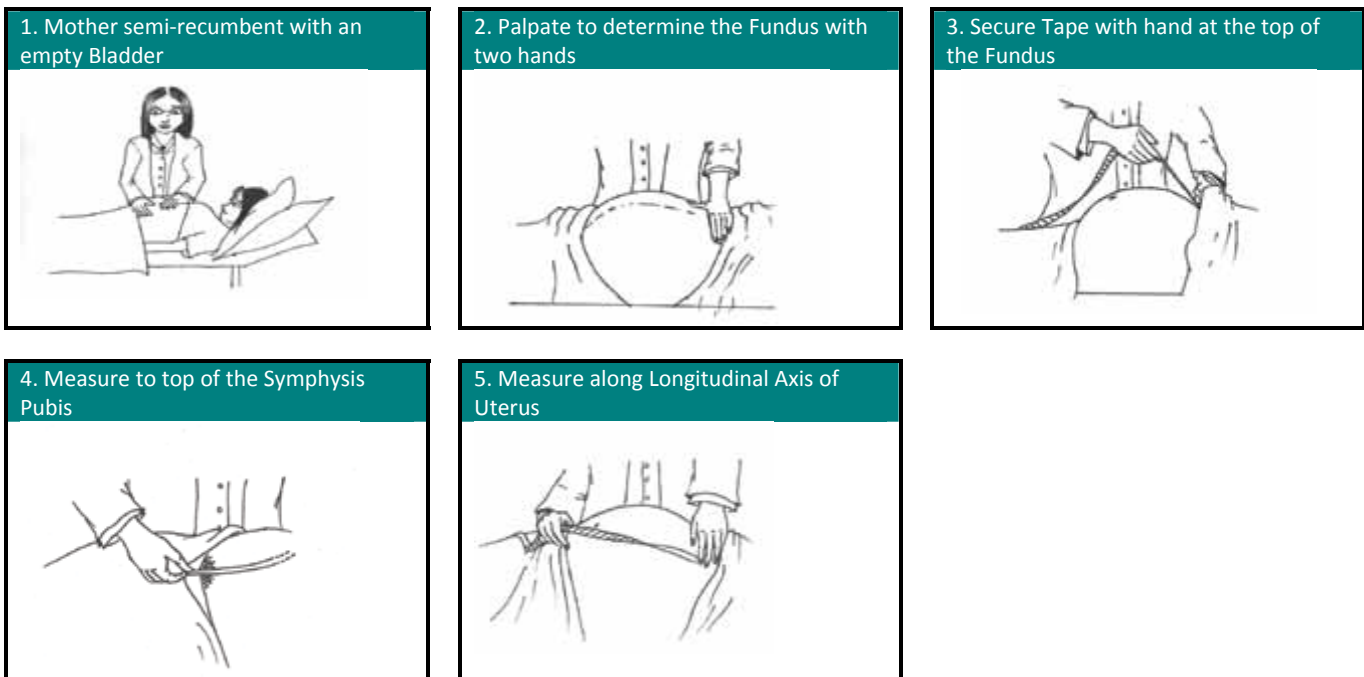


## 15. How to manage abnormal examination findings or symptoms

### Intrauterine growth restriction (IUGR)

Measurement of the symphysial-fundal height (SFH) from 20 weeks onwards (5):

- Ensure the mother is comfortable, lying in a semi-recumbent position, with an empty bladder.
- Use the unmarked side of a non-elastic tape measure.
- Measure from the top of the fundus to the top of the symphysis pubis.
- Measure the longitudinal axis of the Uterus, avoiding correcting for the midline.
- Record and plot the measurement in centimetres on the chart.
- The slope of the graph of the serial measurements is the indicative finding.



Other considerations include transverse lie, multiple pregnancies and obesity.

If serial symphysial-fundal measurements are flattening, a referral for an ultrasound should be made, requesting the following:

- Foetal size and growth compared with the previous ultrasound (e.g. bi-parietal diameter, abdominal circumference)
- Doppler scan of the umbilical artery flow
- Amniotic fluid Index (requesting figures for the normal range)

If any parameters are abnormal, contact the obstetric registrar or the consultant via the Ballarat Health Services switch on **5320 4000**, and refer to the antenatal clinic for an urgent assessment. The antenatal shared care coordinator can also be contacted on **5320 4533**, for further assistance.



## Reduced foetal movements

Check the fundal height and the foetal heart rate using a doppler stethoscope. Referral can then be made to the antenatal clinic for an initial cardiotocogram (CTG) and for an assessment of foetal well-being.

If the foetal movements are appropriate, but the GP or the woman is uncomfortable about the situation, or if there is a previous history of foetal death in utero, or a stillbirth, please refer to the antenatal clinic for foetal assessment.

## Hypertension and pre-eclampsia

### Hypertension

Definition: Hypertension is defined when the systolic blood pressure is greater than or equal to 140 mmHg and/or the diastolic blood pressure is greater than or equal to 90 mmHg, or there is an incremental rise of 30 mm Hg in the systolic, or 15 mm Hg in the diastolic blood pressure recordings.

Essential hypertension refers to elevated blood pressure levels which have been diagnosed prior to pregnancy, or before 20 weeks.

Gestational hypertension refers to elevated blood pressure levels diagnosed after 20 weeks (without pre-existing hypertension).

**Pre-eclampsia** is a multi-system disorder unique to human pregnancy, and characterised by hypertension, together with the involvement of one or more other organ systems and/or the foetus.

Raised blood pressure is commonly, but not always the first manifestation of pre-eclampsia.

Proteinuria is the most commonly recognised additional feature after hypertension but should not be considered mandatory to make the clinical diagnosis.<sup>2</sup>

A diagnosis of Pre-eclampsia can be made when hypertension arises after 20 weeks gestation and is accompanied by one or more of the following:

- Renal involvement:
  - The presence of significant proteinuria indicated by dipstick testing, and subsequently confirmed by a spot-urine measurement of the protein/creatinine Ratio being  $\geq 30\text{mg/mmol}$ . In view of the close correlation between a measurement of the protein/creatinine ratio taken from a spot-urine and that from a 24 hour urine collection, the latter is rarely required.
  - Serum creatinine Level  $> 90 \mu\text{mol/L}$
  - Oliguria
- Hematological involvement
  - Thrombocytopenia
  - Haemolysis
  - Disseminated Intravascular Coagulation
- Hepatic involvement
  - Raised serum transaminase levels
  - Severe epigastric or right upper quadrant pain.
- Neurological involvement
  - Convulsions (eclampsia)
  - Hyperreflexia with sustained clonus
  - Severe headache
  - Persistent visual disturbances (photopsia, scotomata, cortical blindness, retinal vasospasm)
  - Stroke



- Pulmonary oedema
- Foetal growth restriction
- Placental abruption

### Management of hypertension

- If the blood pressure is equal to or above 140/90, the obstetric registrar or the consultant should be contacted through the BHS switch on **03 5320 4000**
- If the blood pressure remains elevated, the following tests should be requested:-
  - Mid-Stream urine specimen for dipstick testing for proteinuria (the sample should also be sent to pathology for a protein/creatinine ratio measurement)
  - Bloods for FBE, serum urea and electrolytes and creatinine, uric acid, liver function tests with a copy of the results to be forwarded to the hospital
- The patient should be educated regarding the signs and symptoms of pre-eclampsia (as stated above)
- If the blood pressure is persistently elevated or there is any suggestion of pre-eclampsia or intrauterine growth restriction, the obstetric registrar or the consultant should be contacted through the BHS Switch on **03 5320 4000** and the patient referred for urgent assessment.

### Vaginal bleeding < 20 Weeks

If bleeding occurs prior to 20 weeks gestation, the woman should be referred to the Emergency Department at Ballarat Health Service. The Admitting Officer should be contacted on **03 5320 4801** (GP Hotline) and a referral faxed to 5320 4090.

### Vaginal bleeding ≥ 20 Weeks

- A physical assessment of the woman should be performed and the fetal heart rate checked and recorded
- The ultrasound result should be checked for placental localisation (i.e. being clear of the os). If no scan has been performed, a referral for one should be made, providing the patient is stable
- A gentle speculum examination can be performed in the presence of placenta praevia to view the cervix, but a digital examination should be avoided. A PAP Smear should be taken if one has not been done in the past 2 years
- Anti-D should be given if the patient is rhesus negative, and a kleihauer count should be performed to ascertain the amount to administer
- If there has only been spotting and it has ceased, and the examination is normal, the patient may be reassured and observed at home, with arrangements made for follow-up
- For ongoing bleeding, or any bleeding other than light spotting, the woman should be referred to the Pregnancy Assessment Unit by telephoning **5320 4533** (during office hours) and 5320 4980 (after hours). Alternatively, the obstetric registrar or the consultant may be contacted through the BHS Switchboard on **5320 4000**
- If the blood loss is heavy and/or the patient appears clinically compromised, IV access and urgent transfer to hospital should be arranged, and the obstetric registrar or the consultant contacted

### Abnormal presentation

If the gestation is >36 weeks and breech presentation, transverse lie or other abnormal presentation, position or lie is suspected, refer to the obstetric registrar or the consultant for an assessment as soon as possible. They can be contacted by contacting Ballarat Health Services switch on **5320 4000**.

<sup>1</sup> Hoffman L, Nolan C, Wilson JD, Oats JN & Simmons D. Gestational Diabetes Mellitus—management guidelines. The Australasian Diabetes in Pregnancy Society. 1998. Med J Aust 169: 93-97 (available at <http://www.mja.com.au/public/issues/jul20/hoffman/hoffman.html>. Accessed 26/8/08)

6. Mater Mothers' Hospital GP Maternity Shared Care Guideline October 2010



## 16. Care of the woman who is RhD negative

The role of the RhD negative blood group in the causation of haemolytic disease of the newborn is well understood and as a result of the routine screening of all pregnant women, together with the administration of Anti-D Immunoglobulin, the incidence of this condition within the community has been greatly reduced.

Consequently, all pregnant women should be tested for their blood group and for blood group antibodies at their first antenatal Visit.

Further testing for RhD antibodies is undertaken at 26-28 weeks to ensure antibodies have not developed.

**Women who have RhD antibodies are not suitable for antenatal shared care.**

The following information therefore relates only to **women who are RhD negative and have no pre-formed antibodies.**

### Anticipating prophylactic Anti-D administration in pregnancy

- All women who are RhD negative and have no pre-formed Anti-D antibodies should be informed about the need to prevent RhD sensitisation. This includes:
  - Anti-D administration if a sensitising event occurs in pregnancy;
  - Routine prophylaxis at 28 and ideally 34 weeks gestation (may be given at 36 weeks at BHS antenatal clinic visit);
  - Further prophylaxis after birth if the baby is RhD positive.

### Potentially sensitising events and the role of prophylactic Rh Anti-D Immunoglobulin

- Potentially sensitising events are defined as any situation in which there is an increased likelihood of foetal red blood cells entering the maternal circulation. These include:
  - Any uterine bleeding in pregnancy, ranging from threatened miscarriage to antepartum haemorrhage.
  - Any abdominal trauma in pregnancy.
  - Any uterine or intra-uterine intervention (such as external cephalic version, amniocentesis, chorionic villous sampling).
  - Multiple pregnancy
  - Ectopic pregnancy
  - Termination of pregnancy

### Additional notes:-

- In the case of a history of recurrent vaginal bleeding, the need for Anti-D Immunoglobulin should be discussed with the obstetric registrar or the consultant.
- It should be noted that there is insufficient evidence to indicate that a woman who has a threatened miscarriage before 12 weeks requires Anti-D Immunoglobulin.
- The risk of sensitisation increases with the progress of the pregnancy.

Administration of Anti-D Immunoglobulin will provide cover for a minimum of 6 weeks.

### **Please note:**

Anti-D Immunoglobulin will be **administered** in the antenatal clinic, although in rural areas, alternative arrangements will be in place for supply and administration.

Further information is available at the RANZCOG website: [www.ranzcog.edu.au/womenshealth/anti-d.shtml](http://www.ranzcog.edu.au/womenshealth/anti-d.shtml)



## 17. Further information for GPs

### Specific infectious diseases

Pregnancy may be complicated by any of the common infectious diseases. There are however some Infections which can have an adverse impact on fetal wellbeing, and discussion with the registrar or the consultant obstetrician is advised when these infections are suspected or if there is a history of exposure.

An excellent and comprehensive resource titled 'Management of Perinatal Infections' can be downloaded from the Australasian Society for Infectious Diseases website located at:

<http://www.asid.net.au> and then follow the Drop-down links:- >Resources>Clinical Guidelines

This reference presents Information regarding possible preventative strategies, the effects of each infection on the mother and on the fetus, diagnostic and management algorithms and can be used as the primary source of information.

The registrar or the consultant obstetrician are available for consultation at any time. They can be contacted by contacting Ballarat Health Services switch on **5320 4000**.

Specific infections covered in this reference include:

- Cytomegalovirus
- Enterovirus
- Hepatitis B virus
- Hepatitis C virus
- Herpes simplex virus
- Human immunodeficiency virus
- Listeria
- Mycobacterium tuberculosis
- Parvovirus
- Rubella
- Streptococcus group B
- Toxoplasma
- Varicella zoster virus

### Smoking during pregnancy

Cigarette smoking during pregnancy is associated with a number of adverse outcomes for the mother and her unborn foetus. Statistics vary as to the incidence of women who smoke during pregnancy (20-30%), but it is known that the practice is associated with a number of possible complications, both during and after the pregnancy, including increased risks of:

- Ectopic pregnancy,
- Spontaneous abortion,
- Placental abruption,
- Premature rupture of membranes and premature labour,
- Foetal death in utero and stillbirth,
- Reduced foetal growth and low birth weight,
- Sudden infant death syndrome
- Asthma and respiratory problems later in life.





No level of smoking during pregnancy, nor indeed at any time, is without risk, and Interventions to assist in smoking cessation should be offered at the first antenatal visit.

Passive smoking is also associated with effects on the unborn foetus and all contact with cigarette smoke should be avoided during pregnancy.

Similarly, smoking during lactation should be avoided as Nicotine and other chemicals do pass into the breast milk, although in small amounts. Women should be encouraged to continue breastfeeding even if they continue smoking.

Nevertheless, cessation of smoking at any stage of the pregnancy is beneficial and there are many publications and pamphlets available to assist mothers who wish to quit.

The following statement regarding pharmacological therapy for smoking cessation is taken from the RANZCOG College Statements and can be found by following this link:

[www.ranzcog.edu.au/publications/statements/C-gen5.pdf](http://www.ranzcog.edu.au/publications/statements/C-gen5.pdf)

*“Unfortunately the lack of safety data, and significant clinical studies, would preclude a recommendation that NRT be routinely advised to pregnant women who smoke cigarettes. In spite of this there have been authors recommending use of NRT in carefully monitored clinical settings for those women who smoke very heavily and are unable to cease with non-pharmacological therapies. The inference is that NRT outweighs the harmful effects of smoking.*

*NRT is not currently licensed for use in pregnant women in Australia”*

Additional assistance is available by:

- Referring the patient to the **Smoke Free Pregnancy Project** – Call the BHS Quit Clinic on **5320 6760**
- Encouraging her to contact **Quitline** on 13 78 48

Resources for Aboriginal and Torres Strait Islander women

- [www.ceitc.org.au](http://www.ceitc.org.au) (Centre for Indigenous Tobacco Control)
- HealthInfoNet: <http://www.healthinonet.ecu.edu.au/>

Continued assessment throughout the pregnancy and beyond is important as a number of women will relapse, either whilst pregnant or breastfeeding. However, it is important to reinforce that cessation of smoking at any stage has benefits for the mother and her baby.

### Alcohol and drug services

The pregnant woman should be advised that there is no safe level of alcohol consumption during pregnancy and should be informed of the potential harmful effects of alcohol on the foetus.

Similarly, the woman should be informed of the harmful effects of illicit drugs on the foetus and advised to avoid their use. Ballarat Health Services maternity social worker can be contacted on **5320 4796**.

Uniting Care Ballarat, and Ballarat Community Health provide drug and alcohol support and counselling services and can be contacted as listed below;

**Uniting Care Ballarat** Ph: 5332 1286 Fax: 5332 2973 Email: [ucocdc@ucare.org.au](mailto:ucocdc@ucare.org.au)  
**Ballarat Community Health** Ph: 5338 4500 Fax: 5332 6617 Email: [www.bchc.org.au](http://www.bchc.org.au)



## Prescription Medicines

During pregnancy prescribing medicines involves the balance between the benefit to the pregnant woman and the potential harm that may occur to the fetus. There have only been a small number of drugs that have well proven safety in pregnancy. The general principles in prescribing medications should focus on only prescribing well-known and tested drugs at the smallest possible doses and only when the benefit to the woman outweighs the risk to the fetus.

The Therapeutic Goods Administration has categorised medications (categories A, B, C, D, X) commonly used within Australia, taking into account the known harmful effects on the developing baby, which includes the potential to cause birth defects, unwanted pharmacological effects around the time of the birth and future health problems.

### Therapeutic Goods Administration categorisation of medications (7)

#### Category

A	Drugs which have been taken by a large number of pregnant women and women of childbearing age without any proven increase in the frequency of malformations or other direct or indirect harmful effects on the fetus having been observed
B1	Drugs which have been taken by only a limited number of pregnant women of childbearing age, without an increase in the frequency of malformation or other direct or indirect harmful effects on the human fetus having been observed. Studies in animals have not shown evidence of an increase occurrence of fetal damage.
B2	Drugs which have been taken by only a limited number of pregnant women of childbearing age, without an increase in the frequency of malformation or other direct or indirect harmful effects on the human fetus having been observed. Studies in animals are inadequate or may be lacking, but available data show no evidence of an increased occurrence to fetal damage.
B3	Drugs which have been taken by only a limited number of pregnant women of childbearing age, without an increase in the frequency of malformation or other direct or indirect harmful effects on the human fetus having been observed. Studies in animals have shown evidence of an increased occurrence of fetal damage, the significance of which is considered uncertain in humans.
C	Drugs which, owing to their pharmacological effects, have caused or may be suspected of causing, harmful effects on the human fetus or neonate without causing malformations. These effects may be reversible. Accompanying texts should be consulted for further details.
D	Drugs which have caused, are suspected to have caused or may be expected to cause, an increased incidence of human fetal malformations or irreversible damage. These drugs may also have adverse pharmacological effects. Accompanying texts should be consulted for further details.
X	Drugs which have such a high risk of causing permanent damage to the fetus that they should not be used in pregnancy or when there is a possibility of pregnancy.

(7) Clinical Practice Guidelines Antenatal Care-1<sup>st</sup> trimester Consultation Draft 28<sup>th</sup> May 2011  
[http://www.health.gov.au/internet/main/publishing.nsf/Content/13DFC2A40EEE9BAACA2574C700213A36/\\$File/Antenatal%20Care%20Consultation%20Draft%2028May11.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/13DFC2A40EEE9BAACA2574C700213A36/$File/Antenatal%20Care%20Consultation%20Draft%2028May11.pdf)



### Over the counter medications

There are only a few medicines that have been established as safe to be taken during pregnancy, and a general principle is that as few as possible should be used. Advice should be sought from a Pharmacist and from reference material such as the 'The Royal Women's Hospital: Pregnancy and Breastfeeding Medicines Guide' which is available from the RWH Pharmacy Department. Telephone: **9345 3190** or email: [rwh.pharmacy@thewomens.org.au](mailto:rwh.pharmacy@thewomens.org.au)

### Drugs in pregnancy information services

Royal Women's Hospital  
Medicines Information Centre  
Cnr Grattan St & Flemington Road  
Parkville VIC 3052  
Telephone: 03 8345 3190  
Fax: 03 8345 3195

Monash Medical Centre  
Obstetric Drug Information  
246 Clayton Road  
Clayton VIC 3168  
Telephone: 03 9594 2361  
Fax: 03 9594 2595

### Websites

- Therapeutic Goods Administration Prescribing Medications in Pregnancy Database:  
<http://www.tga.gov.au/hp/medicines-pregnancy.htm>
- Mothersafe: (NSW) <http://www.sesiahs.health.nsw.gov.au/Mothersafe/>
- Medsafe: (NZ) <http://www.medsafe.govt.nz/>
- Guidelines for Shared Maternity Care Affiliates 2010  
<http://www.health.vic.gov.au/maternitycare/smcguidelines-2010.pdf>



## 8. Mental health and wellbeing

### Depression

The recognition of depression in the antenatal period is important as it may require treatment during the pregnancy, and is a strong predictor for Postpartum Depression. The Edinburgh Postnatal Depression Scale is an appropriate tool to use to assess Antenatal Depression and is available through Medical Software. A proforma may also be downloaded from the following sites:-

Beyond Blue - [http://beyondblue.org.au/index.aspx?link\\_id=103.885](http://beyondblue.org.au/index.aspx?link_id=103.885)

The Black Dog Institute - <http://www.blackdoginstitute.org.au/docs/CliniciansdownloadableEdinburgh.pdf>

All women will have a depression assessment at their first midwifery visit. This can be repeated at any time if there are ongoing concerns.

### Perinatal Emotional Health Program

The Perinatal Emotional Health Program (PEHP) is funded by the State Government as part of the National Depression Initiative Program. PEHP clinicians are employed by BHS Psychiatric Services and their role is to provide prevention, early intervention, secondary consultation and assessment of women in the perinatal period and who are experiencing emotional health concerns. GPs can refer women to the program prior to pregnancy for a planning session if they have a past mental health history, and from early pregnancy through to 12 months post birth.

PEHP clinicians will provide short term time limited psychological interventions to the woman, or can assist referral to existing services within the woman's community. PEHP is an outreach program allowing women to be seen either in their local antenatal clinic or maternal child health centre, or within their home environment.

The program is designed to treat women with symptoms of a mild to moderate mental health illness. PEHP is a non-crisis based service. If immediate follow up is required, please contact Ballarat Mental Health Service on 1300 661 323 (24 hrs). Otherwise referral into the program can be made by phoning **5320 3030**, or by faxing a referral letter form to 5320 3062. Hours of operation are Monday to Friday 8.30 am - 5.00 pm

### Ballarat Health Services Psychiatric Service

Women with more severe psychiatric conditions during pregnancy (for example, women with Bipolar Disorder, Schizophrenia, severe Depression, or those who are currently taking antipsychotic medication or mood stabilisers), should be referred, if possible, prior to pregnancy, or in early pregnancy. Appropriate information should of course be provided regarding the current and past psychiatric history. Adult Mental Health Services operate a range of services, and their numbers are listed below.

Ballarat Psychiatric Services	Phone: 03 5320 4100
Ararat & Stawell Psychiatric Services	Phone: 03 5352 9710
Horsham Psychiatric Services	Phone: 03 5562 1300
Aged Persons Mental Health Services	Phone: 03 5320 3030
Child & Adolescent Mental Health Services	Phone: 03 5320 3592
<b>After-hours</b> (For all services regardless of age or address)	<b>1300 661 323</b>

You may also wish to access the Ballarat District and Division of General Practice –Service Providers website <http://directory.bddgp.org.au/directory.php> for further information.



## 19. Birth and postnatal care

The care of the woman during labour and birth will be the responsibility of the health care team at Ballarat Health Services.

At discharge, a summary of the pregnancy and birth will be sent to the GP. An extended postnatal home visit within the first week post birth will be provided. Ballarat Health Services has a breastfeeding support service for women experiencing feeding difficulties and can be contacted on **5320 4977**

Most postnatal care is undertaken in the community by GPs in conjunction with the maternal and child health service.

### Mother's postnatal visit

At this visit the woman's physical and emotional wellbeing should be assessed, and issues such as parenting, breastfeeding and relationship concerns should be addressed. Any complications of the pregnancy should be followed up at this time.

The following is a brief checklist of issues to consider and cover:

- Blood pressure
- Breastfeeding and breast and nipple care
- Abdominal examination (and wound check if LUSCS)
- Perineal examination and check for healing of a tear or an episiotomy. A pap smear should be undertaken if it is due
- It is appropriate to discuss family planning Issues at this time
- Follow-up for any Obstetric complications
- Follow-up any medical issues which arose during the pregnancy

### Baby's 6 - week check

This is an important and invaluable opportunity to assess the early growth and development of the infant. Amongst other assessments, the following should be covered:-

Examination:

- Measurement of growth - weight, length, head circumference. A growth chart should be commenced
- Vision profile – ability to follow with gaze, absence of a red light reflex
- Facial symmetry and presence of smiling
- Hearing profile
- Cardiovascular examination, including listening for murmurs
- Presence of femoral pulses
- Testing for congenital dislocation of the hip using ortolani's test
- External genitalia – including testicular descent

Issues to discuss with the mother include:

- Immunisation
- Car and travel safety
- SIDS awareness
- Bowel habits



### Breastfeeding

Breastfeeding is the normal method of infant feeding and it is accepted that it positively influences the physical and emotional health of both the mother and her infant, providing nutrition for normal growth and development, as well as protection for many diseases and infections in both the mother and baby.

The World Health Organisation states that: 'Exclusive breastfeeding is recommended up to 6 months of age, with continued breastfeeding along with appropriate complementary foods up to two years of age or beyond'<sup>(6)</sup>

#### **GPs have a very important role in encouraging and supporting women to breastfeed.**

- The initial Antenatal consultation between a woman and her doctor or midwife should include a careful assessment of the woman's (and her partner's) attitudes, beliefs, expectations, knowledge and experience in relation to infant feeding.
- Women are more likely to breastfeed if:
  - they are committed to breastfeeding prior to birth
  - their husband or partner supports breastfeeding
  - they attend antenatal classes
  - they have access to support in the postnatal period

#### **The benefits of breastfeeding include:**

##### **For the mother**

- Accelerated weight-loss and return to pre-pregnancy body weight
- Protection against premenopausal breast cancer, ovarian cancer and osteoporosis
- Promotion of a loving bond between mother and baby
- It is convenient and inexpensive
- Contributes to a period of **reduced** postpartum fertility

##### **For the infant**

- Increases the level of protection against bacteraemia, meningitis, urinary tract infection, otitis media, and SIDS
- Possible reduced risk of developing obesity, coronary vascular disease, cancer, Type II diabetes, asthma and a delayed onset of coeliac disease
- Reduces the incidence and duration of diarrhoeal illness
- Improves cognitive development
- Reduces the risk of developing cow's milk allergy and other allergy-related illnesses

#### **GPs have a very important role in supporting women to overcome any breastfeeding problems.**

Some women cease breastfeeding too early because they encounter problems, do not have support, or mistakenly feel they do not have an adequate supply of breast milk. Timely support, together with referral to breastfeeding support services are the keys to overcoming these problems and to ensure the continuation of breastfeeding. These contact details are provided below.

<b>Ballarat Health Service Breastfeeding Support Service:</b>	<b>03 5320 4977-day helpline</b>
<b>Australian Breastfeeding Association:</b>	<b>1800 6862 686</b>
<b>CAFS Early Childhood Parenting Centre:</b>	<b>03 5331 7556</b>

<sup>8</sup> Victorian Department of Education and Early Childhood Development. <http://www.education.vic.gov.au/researchinnovation/vcams/children/2-1breastfed.htm> Accessed 28/04/2011



## 20. Useful resources

	Contact / Website
Ballarat Health Service Emergency Department	Tel: 03 5320 4801 – GP Hotline for GPs only Fax: 03 5320 4090
Ballarat Health Service GP Liaison Unit	Tel: 03 5320 6676 Fax: 03 5320 4472 <a href="http://gp.bhs.org.au">gp.bhs.org.au</a>
Ballarat and District Division of General Practice	Tel: 03 5331 6303 Fax: 03 5331 5754 <a href="http://www.bddgp.org.au">www.bddgp.org.au</a>
Therapeutic Advice & Information Service	Tel: 03 9344 2277 <a href="http://www.nps.org.au/health_professionals">www.nps.org.au/health_professionals</a>
Ballarat Health Service Breastfeeding Support Service	Tel: 03 5320 4977
Australian Breastfeeding Association	1800 6862 686 <a href="http://www.breastfeeding.asn.au/bfinfo/index.html">http://www.breastfeeding.asn.au/bfinfo/index.html</a>
Child Health Line/Parent Line Victoria	Tel: 13 22 29 <a href="http://www.education.vic.gov.au/earlychildhood/support/mchline.htm">www.education.vic.gov.au/earlychildhood/support/mchline.htm</a>
Maternal & Child Health Nurse Advice Line – 24 hour access	Tel: 13 22 29 <a href="http://www.education.vic.gov.au/earlychildhood/support/mchline.htm">www.education.vic.gov.au/earlychildhood/support/mchline.htm</a>
Parentline	Tel: 13 22 89 <a href="http://www.parentline.vic.gov.au">www.parentline.vic.gov.au</a>
PODS – Ballarat Community Health Centre	Tel: 03 5338 4500 <a href="http://www.bchc.org.au/services_pods.php">www.bchc.org.au/services_pods.php</a>
Better Health Channel	<a href="http://www.betterhealth.vic.gov.au">www.betterhealth.vic.gov.au</a>
Guidelines for Shared Maternity Care Affiliates	<a href="http://www.thewomens.org.au">www.thewomens.org.au</a> <a href="http://www.mercy.com.au">www.mercy.com.au</a> <a href="http://www.wh.org.au">www.wh.org.au</a> <a href="http://www.nh.org.au">www.nh.org.au</a> <a href="http://www.health.vic.gov.au/maternitycare/smcguidelines-2010.pdf">http://www.health.vic.gov.au/maternitycare/smcguidelines-2010.pdf</a>
The Merck Manual	<a href="http://merck.com">merck.com</a>



	Contact / Website
<b>Medicare Benefits Schedule Online</b>	<a href="http://www.health.gov.au/internet/mbsonline/publishing.nsf/Content/Medicare-Benefits-Schedule-MBS-1">www.health.gov.au/internet/mbsonline/publishing.nsf/Content/Medicare-Benefits-Schedule-MBS-1</a>
<b>Royal Australian And New Zealand College of Obstetricians and Gynaecologists (RANZCOG)</b>	<a href="http://www.ranzcog.edu.au/publications/collegestatements.shtml">www.ranzcog.edu.au/publications/collegestatements.shtml</a>
<b>Victoria Department of Health</b>	<a href="http://www.health.vic.gov.au/maternity/">www.health.vic.gov.au/maternity/</a>
<b>The Royal Australian College of General Practitioners</b>	<a href="http://www.racgp.org.au/">www.racgp.org.au/</a>
<b>Genetic Health Services Victoria</b>	<a href="http://www.genetichealthvic.net.au">www.genetichealthvic.net.au</a>
<b>World Health Organisation (WHO)</b>	<a href="http://www.who.int/genomics/public/geneticdiseases/en/index2.html">www.who.int/genomics/public/geneticdiseases/en/index2.html</a>
<b>Fragile X Association of Australia</b>	<a href="http://www.fragilex.org.au">www.fragilex.org.au</a>
<b>Victorian Clinical Genetics Services Pathology</b>	<a href="http://www.vcgspathology.com.au/?docid=7f5f83ca-989c-4cdb-9c2e-992e00efe918">www.vcgspathology.com.au/?docid=7f5f83ca-989c-4cdb-9c2e-992e00efe918</a>
<b>Australian Immunisation Handbook</b>	<a href="http://www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook-home">www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook-home</a>
<b>Family Planning Victoria</b>	<a href="http://www.fpv.org.au">www.fpv.org.au</a>
<b>Department of Health and Ageing re Healthy Eating</b>	<a href="http://www.healthyactive.gov.au/internet/healthyactive/publishing.nsf/Content/healthyweight">www.healthyactive.gov.au/internet/healthyactive/publishing.nsf/Content/healthyweight</a>
<b>General Practice Victoria (GPV)</b>	<a href="http://www.gpv.org.au">www.gpv.org.au</a>
<b>Drug info clearinghouse</b>	<a href="http://www.druginfo.adf.org.au">www.druginfo.adf.org.au</a>
<b>Antenatal and Postnatal Depression</b>	<a href="http://www.panda.org.au">www.panda.org.au</a> <a href="http://beyondblue.org.au">beyondblue.org.au</a>





## 21. Important Ballarat Health Service telephone Numbers

<b>Ballarat Health Services Switchboard</b>	<b>03 5320 4000</b>
<b>Antenatal Clinic</b>	<b>03 5320 4221 03 5320 4324 (Fax)</b>
<b>Antenatal Shared Care Coordinator</b>	<b>03 53204482 or 03 5320 4533 Pager Number 814</b>
<b>Labour Ward</b>	<b>03 5320 4980</b>
<b>Director of Women’s Health (Switchboard to page)</b>	<b>03 5320 4000</b>
<b>Obstetric Registrar (Switchboard to page)</b>	<b>03 5320 4000</b>
<b>Breastfeeding Service</b>	<b>03 5320 4977</b>
<b>Diabetes Educator</b>	<b>03 5320 6754</b>
<b>Emergency Department– GP Hotline for GPs only</b>	<b>03 5320 4801 03 5320 4090 (Fax)</b>
<b>Radiology Department– GP Hotline</b>	<b>03 5320 4544</b>
<b>Pathology Department – Dorevitch</b>	<b>03 5320 4451</b>
<b>Maternity Social Worker</b>	<b>03 5320 4796</b>
<b>Indigenous Midwife</b>	<b>03 5320 4410 0466 207 273</b>
<b>Outpatients Department – GP Hotline</b>	<b>03 5320 6800</b>
<b>GP Liaison Unit</b>	<b>03 5320 6676</b>
<b>Ballarat Psychiatric Services After Hours Service</b>	<b>03 5320 4100 1300 661 323</b>