



GUIDELINES
FOR SHARED
MATERNITY CARE
AFFILIATES 2015



Western Health



Mercy Health

Care first



the women's
the royal women's hospital
victoria australia

Guidelines for Shared Maternity Care Affiliates 2015

The Royal Women's Hospital
Mercy Public Hospitals Incorporated
Western Health

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www.thewomens.org.au

www.mercyhealth.com.au

www.westernhealth.org.au

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ABBREVIATIONS

β-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 β-hCG	free beta human chorionic gonadotropin
g	grams
GBS	group B streptococcus
GP	general practitioner
GTT	glucose tolerance test
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
MBS	Medicare Benefits Schedule
mcg/day	micrograms per day

ABBREVIATIONS

MCV/MCH	mean cell volume/mean cell haemoglobin
MHW	Mercy Hospital for Women
MIS	The Women's Medicines Information Service
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
NIPT	non-invasive prenatal testing
PBMG	The Women's Pregnancy and Breastfeeding Medicines Guide
PKU	phenylketonuria
RACGP	The Royal Australian College of General Practitioners
RANZCOG	The Royal Australian and New Zealand College of Obstetricians and Gynaecologists
RWH	The Royal Women's Hospital = The Women's
RWHP	The Women's (Parkville)
RWHS	The Women's (Sandringham)
s.	Section
SIDS	Sudden Infant Death Syndrome
SMCA	shared maternity care affiliate
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
WH	Western Health
WMH	Werribee Mercy Hospital

PREFACE

The *Guidelines for Shared Maternity Care Affiliates 2015* have been developed to assist and support shared maternity care affiliates who are accredited to provide shared maternity care at the Royal Women's Hospital, Mercy Hospital for Women, Western Health and Werribee Mercy Hospital.

These guidelines have been developed by the majority of the Shared Maternity Care Collaborative (comprising General Practice Liaison Units [or equivalent] at the Women's, Mercy Hospital for Women, Western Health and Werribee Mercy Hospital) and endorsed by the hospitals' Executive. They are a revision of the *Guidelines for Shared Maternity Care Affiliates 2010* and aim to support general practitioners and shared maternity care affiliates by providing information on services, support and standards for the provision of care.

Shared maternity care is a model of care in which a woman is cared for by hospital staff and a community-based shared maternity care affiliate (an accredited general practitioner, obstetrician or community-based midwife) throughout her pregnancy. The woman's labour, baby's birth and immediate postnatal care are managed by the hospital. Shared maternity care provides continuity of care and a high-quality, community-based, holistic, safe and culturally appropriate model that is highly valued by women. Shared maternity care has high level evidence of safety¹ with evidence of very high levels of satisfaction.²

Shared maternity care is an important model at the Women's, Mercy Hospital for Women, Western Health and Werribee Mercy Hospital. These hospitals are committed to supporting shared maternity care and the involvement of shared maternity care affiliates in the ongoing development of this model of care.

These guidelines aim to support the provision of high-quality shared maternity care by:

- » delineating the roles, responsibilities and expectations of health care providers
- » clarifying expectations and pathways for referral, care and support
- » assisting in the provision of evidence-based care and initiatives
- » providing useful and relevant information for both providers and women.

These guidelines include updated information on:

- » additional hospital sites, including the Women's, Sandringham and Werribee Mercy Hospital
- » pathways for referral and support
- » expected standards of communication and care by hospitals and community providers
- » eligibility for shared maternity care
- » modified shared maternity care
- » investigations
- » gestational diabetes
- » screening and testing for fetal abnormalities
- » the use of Rhesus immunoglobulin
- » vaccinations in pregnancy
- » management of common problems in pregnancy
- » postnatal care
- » resources for healthcare providers and women.

1. Three Centres Consensus Guidelines on Antenatal Care, October 2001 Mercy Hospital for Women, Southern Health and Women's and Children's Health.

2. Shared Maternity Care Survey 2012: The Royal Women's Hospital. Unpublished anonymous survey of two months of women undertaking shared maternity care. Questions and methodology based on *Victorian Healthy Mothers Healthy Families survey, 2008*.

PREFACE

During the development of these guidelines, significant changes have been made at the hospitals to strengthen shared maternity care. These include:

- » greater alignment of antenatal care schedules and testing
- » clarity on investigations during pregnancy
- » clearer delineation of responsibilities of shared maternity care affiliates and the hospitals
- » clarity about the role and support provided by the shared maternity care coordinator
- » clearer expectations of requirements in the case of abnormal findings
- » mapping of referral pathways and access to specialist advice for shared maternity care affiliates.

It is anticipated these guidelines will also provide a useful basis for shared maternity care guideline development for other maternity services in Australia. In this case, please contact Shared Maternity Care at the Women's via email: sharedcare@thewomens.org.au for approval and to ensure appropriate acknowledgment.

These guidelines are available on each hospital website:

- » The Women's (www.thewomens.org.au)
- » Mercy Public Hospitals Incorporated (www.mercyhealth.com.au)
- » Western Health (www.westernhealth.org.au).

Printed copies are also available for a cost. Please contact Shared Maternity Care at the Women's via email: sharedcare@thewomens.org.au for details and to request a copy.

We hope these guidelines assist you in providing quality shared maternity care to women who choose this popular and important model of maternity care, and that you continue to provide shared maternity care with our hospitals for many years to come.

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MATERNITY CARE AT THE HOSPITALS

Each hospital provides various models of maternity care. A summary of the models of maternity care and maternity care hospitals available in Victoria can be found on the 'Maternity and newborn services' page of the Department of Health and Human Services website. Also see: docs2.health.vic.gov.au/docs/doc/Capability-framework-for-Victorian-maternity-and-newborn-services

The Shared Maternity Care Collaborative is a group of hospitals with maternity services that work together to support shared maternity care; with strong support, systems and clinical governance and joint accreditation and reaccreditation criteria and processes between them.

The hospitals within the Shared Maternity Care Collaborative are:

Mercy Hospital for Women (MHW)

Werribee Mercy Hospital (WMC)

The Women's (RWH), Parkville and Sandringham

Western Health (WH)

Northern Hospital (Northern hospital has decided to not to be a part of these guidelines).

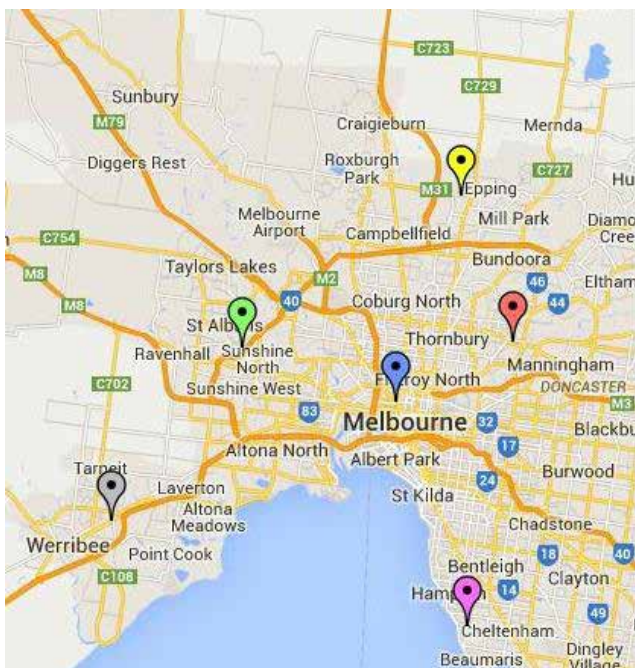
In Victoria three tertiary hospitals provide state-wide maternity services for the most complex pregnancies. They are:

Mercy Hospital for Women (MHW), Heidelberg

Monash Medical Centre, Clayton

The Women's (RWH), Parkville

Hospital contact details



- Royal Women's Hospital
20 Flemington Road, Parkville
Phone: 8345 2000
- Western Health
176 Furlong Road, St Albans
Phone: 8345 1333
- Werribee Mercy Hospital
300 Princes Highway, Werribee
Phone: 8754 3000
- Royal Women's Hospital, Sandringham
193 Bluff Road, Sandringham
Phone: 9076 1000
- Mercy Hospital for Women
163 Studley Road, Heidelberg
Phone: 8458 4444
- Northern Health
185 Cooper Street, Epping
Phone: 8405 8000

Source: Map data ©2015 Google

Referring women to hospital

To refer a woman to a hospital for maternity care, the general practitioner (GP) should send a referral as soon as possible after pregnancy is confirmed.

The majority of pregnancies and births do not require tertiary care and can be managed at a woman's closest maternity hospital. To ensure all women can access the level of maternity care they require in a timely way and be contacted about their appointments, GPs should provide as much relevant information as possible. 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)
- » body mass index (BMI)
- » 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.

To assist GPs to provide high-quality information, all the hospitals have downloadable referral templates for several clinical systems on their websites. Alternatively, the Victorian GP Referral Template (formerly the Victorian Statewide Referral Form – 'VSRF') is included in Medical Director Templates software or can be downloaded from the Networking Health Victoria website. Also see: www.nhv.org.au/resources/general-practice-liaison-network-gpl/

To ensure all women can access the level of maternity care they require, women with low-risk pregnancies should be referred to the maternity hospital closest to their homes. If a GP thinks a woman should attend a tertiary centre and this is not the woman's closest maternity hospital, her needs must be specified on the referral to the tertiary centre. In these cases, if MHW or RWH believes the woman is best served at her local hospital, the referring doctor will be contacted so a referral to her closest maternity hospital can be arranged.

If a woman has been accepted for care at a non-tertiary hospital and at any time her pregnancy becomes complicated or is considered to be high risk, she will be referred by her local maternity hospital to a maternity service that meets her needs.

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.

Refer a woman to hospital as soon as possible after you confirm her pregnancy.

To ensure all women can access the level of maternity care they require, women with low-risk pregnancies should be referred to the maternity hospital closest to their homes.

To ensure all women can access the level of maternity care they require in a timely way and be contacted about their appointments, ensure referrals are comprehensive.

Referral contact details

Mercy Hospital for Women

Fax: 8458 4205
Phone: 8458 4111 or 8458 4100 (GP Hotline – GP use only)

The Women's (Parkville and Sandringham)

Fax: 8345 3036
Phone: 8345 2058 (GP Quick Access Number – GP use only)

Werribee Mercy Hospital

Fax: 8754 3467
Phone: 8754 3413

Western Health

Fax: 8345 1691
Phone: 8345 1727

Northern Health

Fax: 9467 8698
Phone: 9495 3443

Hospital satellite clinics

In addition to the main hospital sites, some hospitals have community satellite clinics. If it is known that a woman prefers to attend a satellite clinic, this request should be included on the initial referral. A woman can also request this at her first hospital visit.

Hospital	Satellite clinics	
The Women's	Fawkner	
	Kensington	
	Moonee Ponds	
Western Health	Braybrook	Seabrook
	Cairnlea	St Albans
	Caroline Springs	Sunbury
	Deer Park	Tarneit
	Footscray	Watergardens
	Laverton	Wyndham
	Melton	

Mercy Hospital for Women no longer provides a service at Preston – this service has now been transferred to the Heidelberg site.

Childbirth education and hospital tours

Childbirth education is available at all the hospitals. As places are limited, it is generally restricted to primigravida. Women are encouraged to organise childbirth education early in pregnancy. A cost is involved.

Childbirth education includes a hospital tour, information regarding when to come to hospital, and information about labour, support, pain relief and breastfeeding. Some hospitals also provide childbirth education classes in the community, such as at maternal child health services.

Women who do not attend childbirth education are welcome to arrange a hospital tour to familiarise themselves with the facilities, including where to present when in labour, birth suites and postnatal wards. There is no cost involved for hospital tours, which generally occur weekly and take approximately 1 hour.

To organise childbirth education (in a hospital or in the community) or a hospital tour:

Hospital	To arrange childbirth education	To book a hospital tour
Mercy Hospital for Women	From >12 weeks Phone: 8754 3400	Phone: 8458 4152
The Women's	Book online at the Women's website www.thewomens.org.au/patients-visitors/cbe	Book online at the Women's website www.thewomens.org.au/patients-visitors/cbe (Tours currently not available at Sandringham)
Werribee Mercy Hospital	From >12 weeks Phone: 8754 3412	Phone: 8754 3412
Western Health	Held at Tweddle Family Services with information provided at the first hospital visit Phone: 9689 1577	Held first Saturday of the month. Meet in ground floor foyer – no booking required
Northern Health	From first hospital appointment Phone: 8405 8211 (maternity ward clerk)	Phone: 8405 8211 (maternity ward clerk)

Hospital support services

The hospitals provide many additional support services for pregnant women, including for:

- » young mothers
- » Aboriginal and Torres Strait Islander women
- » women with alcohol and substance issues
- » women with physical disabilities
- » women with intellectual disabilities and learning difficulties
- » women who have been circumcised
- » women who require interpreter services.

Please indicate on the initial referral if additional support or an interpreter is required.

SHARED MATERNITY CARE

In participating hospitals, shared maternity care is a model of care in which the majority of antenatal visits take place in the community with a hospital-accredited GP, obstetrician or midwife (a shared maternity care affiliate [SMCA]). Visits also take place at key times at the hospital (the main hospital site or community satellite clinic). The woman attends the hospital for the labour, baby's birth and immediate postnatal care.

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 of the receipt of referral for pregnancy care
- » notify the woman of the first hospital appointment details and location
- » notify the referring doctor if the woman does not attend her first hospital appointment
- » establish suitability for shared maternity care
- » register the woman with an accredited SMCA
- » notify the SMCA that the woman has registered for shared maternity care
- » notify the referring doctor of the outcome of the first hospital visit
- » ensure the woman has a VMR

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 Shared Maternity Care Affiliate and is not covered under the accreditation, roles or responsibilities of a shared maternity care provider.

Shared maternity care is available to all women who have been assessed as being low-risk by the hospital.

- » 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 and notify the woman of these
- » notify the woman's SMCA if shared maternity care ceases.

Clinical governance at the hospital includes:

- » a list of accredited SMCAs available on the hospital website
- » a robust system for accreditation and reaccreditation of SMCAs
- » strong clinical governance for shared maternity care
- » referral guidelines and support for SMCAs.

It is the responsibility of the SMCA to:

- » notify the shared maternity care coordinator 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 the shared maternity care coordinator if a woman has a poor attendance record for her antenatal visits
- » ensure the shared maternity care coordinator 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 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
- » attend her appointments
- » bring her VMR to all appointments.

Both the SMCA and hospital providers must record test results, each visit, findings and management in the VMR.

A woman is required to make her own appointments with her SMCA.

Accreditation and reaccreditation of shared maternity care affiliates

Any GP, obstetrician or midwife who is accredited at the Women's, Mercy Hospital for Women, Western Health, Northern Health or Werribee Mercy Hospital as a SMCA can provide shared maternity care to women who have been registered by the hospital to undertake shared maternity care.

Underpinned by hospital policies and a joint agreement, the hospitals have joint accreditation criteria and a single application process for GPs and obstetricians who wish to become SMCAs at any of the hospitals. Each hospital site has documented policies for accreditation as a SMCA and registration protocols for shared maternity care that comply with these guidelines. SMCAs can request these by contacting the shared maternity care coordinator of the appropriate hospital.

Applications for accreditation as a SMCA are currently processed at the Women's (Parkville), Mercy Hospital for Women, Northern Health and Western Health. The Shared Maternity Care Affiliate Accreditation Application form can be downloaded from the hospitals' websites.

To maintain accreditation as SMCAs, 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 consist 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.

Shared maternity care coordinators

The hospital shared maternity care coordinator is the key person for non-urgent contact for both SMCAs and women. The shared maternity care coordinator's qualifications and role vary between health services.

The shared maternity care coordinator responds to issues that may arise and ensures that non-urgent queries and requests from SMCAs are dealt with in a timely and appropriate manner.

To maintain accreditation as a SMCA, every 3 years, as per the RACGP triennium, all affiliates are invited to apply for reaccreditation.

The hospital shared maternity care coordinator is the key person for non-urgent contact for both SMCAs and women.

SHARED MATERNITY CARE

At all sites, the shared maternity care coordinator is the point of contact for:

- » updating a woman's contact details
- » organising and notifying women of routine hospital appointments
- » organising appointments for additional non-urgent clinical consultations; for example, with obstetric doctors, dietetics, physiotherapy, social work, physicians, psychiatry or genetics. This may be at the request of the SMCA or hospital staff.
- » organising hospital follow-up for women who have been diagnosed with gestational diabetes
- » obtaining non-urgent information about hospital care (e.g. discharge summaries, investigation results, whether a woman is registered for shared care)
- » changing shared maternity care providers (if requested by the woman)
- » notifying the SMCA of cessation of shared maternity care.

The shared maternity care coordinator may also be able to assist with:

- » non-urgent reassessment and review of community ultrasound results and other pathology results by the relevant department
- » arranging chorionic villus sampling (CVS)/amniocentesis for women booked for care at the hospital.

Shared maternity care coordinator contact details

Mercy Hospital for Women

Phone: 8458 4120

Fax: 8458 4206

Email: sharedcare@mercy.com.au

The Women's (Parkville)

Phone: 8345 2129

Fax: 8345 2130

Email: sharedcare@thewomens.org.au

The Women's (Sandringham)

Phone: 9076 1554

Fax: 9076 1595

Email: sharedcare.sandringham@thewomens.org.au

Werribee Mercy Hospital

Phone: 8754 3393

Fax: 8754 3467

Email: werribeesharedcare@mercy.com

Western Health

Phone: 8345 0108

Mobile: 0466 130 457 (message can be left on mobile phone but not on the landline)

Fax: 8345 1691

Email: maternitysharedcare@wh.org.au

Suitability for shared maternity care

At the hospitals, shared maternity care is an option for all women who have been assessed by the hospital as healthy and with a normal pregnancy.

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

Medical and social history

- » ≥ 42 years of age at the time of booking (≥ 40 years at WH)
- » pre-pregnancy BMI is ≥ 35 or ≤ 18.5
- » cardiac disease, including hypertension
- » renal disease
- » diabetes and some endocrine disorders
- » major psychiatric disorders
- » haematological disorders, including thromboembolic disease
- » history of obstetric cholestasis
- » epilepsy requiring anticonvulsant drugs
- » malignant disease
- » severe asthma
- » chemical dependency
- » human immunodeficiency virus (HIV) positive
- » Hepatitis B or C with abnormal liver function
- » auto-immune disorders
- » a cone biopsy or ≥ 2 loop excisions of the transformation zone (LETZ)
- » drug abuse.

Previous obstetric history

- » a stillbirth or neonatal death (unexplained or recurrent reason)
- » recurrent (3 or more) miscarriage
- » fetal growth restriction (birth weight < 2800 g at term)
- » pre-term birth (≤ 32 weeks)
- » severe pre-eclampsia
- » Rhesus isoimmunisation or other significant blood group antibodies
- » placental abruption
- » cervical insufficiency
- » congenital abnormalities
- » uterine rupture.

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.

Current pregnancy

- » multiple pregnancy
- » some congenital abnormalities
- » pregnancy associated plasma protein-A (PAPP-A) Multiples of Median (MoM) <0.4 on first trimester early combined screening test
 - » this is a blood marker utilised in the first trimester early combined screening test that is combined with other markers to generate an aneuploidy risk; however, a low level in itself may predict poorer obstetric outcomes.

Note that previous lower uterine segment caesarean section (LUSCS), in vitro fertilisation (IVF) and other assisted conception, treated thyroid disease, subclinical hypothyroidism and previous gestational diabetes do not preclude shared maternity care.

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 (≥ 40 years at WH) 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 and dietician review 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)
- » a routine growth and wellbeing ultrasound is organised at 32–34 weeks (hospital responsibility).

If a woman becomes unsuitable for shared maternity care and this is noted by a SMCA, the SMCA is required to ensure appropriate and timely referral to the hospital.

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 SMCAs, appropriate and timely referral to a hospital must be undertaken.

It is the hospital's responsibility to notify SMCAs of the cessation of shared maternity care or changes to modified shared maternity care and the reasons.

Victorian Maternity Record

The Victorian Maternity Record (VMR) is the patient-held pregnancy record used at the hospitals. 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 providers at all SMCA and hospital visits.

All providers need to document their care in the VMR (including any tests ordered and test results). These need to be dated and signed. The following must 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: www.health.vic.gov.au/maternitycare/vmr_orderform.htm

The VMR is the key means of communication between the hospital and SMCA.

- It is essential that this is completed at each visit by providers at all SMCA and hospital visits.
- All health care providers must record examination findings and investigations.

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

Resources on shared maternity care and referral templates

Topic	Organisation web address	Content summary
<p>Shared maternity care at each of the hospitals:</p> <p>Health professional information</p>	<p>Mercy Health www.mercyhealth.com.au/ifhp/mhw/Pages/MHW%20Shared%20Maternity%20Care.aspx</p> <hr/> <p>The Women's www.thewomens.org.au/health-professionals/clinical-resources/shared-maternity-care/</p> <hr/> <p>Western Health www.westernhealth.org.au/HealthProfessionals/ForGPs/Pages/Maternity-Services.aspx</p>	
<p>Shared maternity care at each of the hospitals:</p> <p>Consumer information</p>	<p>The Women's www.thewomens.org.au/health-information/fact-sheets/#shared-maternity-care-at-the-womens</p> <hr/> <p>Mercy Health www.mercyhealth.com.au/meps/mhw/Pages/Shared%20Care.aspx</p> <hr/> <p>Western Health www.westernhealth.org.au/Services/Womens_and_Children/MaternityServices/Pages/Options-for-pregnancy-care.aspx#smc</p>	<p>Information also in English, Arabic and Vietnamese</p>

Topic	Organisation web address	Content summary
Maternity services and models of care	Department of Health and Human Services, Victoria www.health.vic.gov.au/maternitycare	Consumer Information: Maternity services and models of care in Victoria – found in the pdf link: Capability-framework-for-Victorian-maternity-and-newborn-services
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_-_care_choices	Consumer Information: Models of maternity care
	Baby Center www.babycenter.com.au/a536330/birth-choices	Consumer information: Models of maternity care
Maternity Referral templates for each of the hospitals	Mercy Health www.mercyhealth.com.au/ifhp/Pages/Refer%20a%20Patient.aspx	
	The Women's www.thewomens.org.au/health-professionals/clinical-resources/referrals/maternity-referrals/	
	Western Health www.westernhealth.org.au/Services/Womens_and_Children/Documents/Options%20for%20pregnancy%20care/Maternity%20Registration%20Form.pdf	
	Networking Health Victoria www.nhv.org.au/resources/general-practice-liaison-network-gpl/	Formerly Victorian State Referral Form (VSRF)
Victorian Maternity Record	Department of Health and Human Services, Victoria www.health.vic.gov.au/maternitycare/victorian-maternity-record.htm	Health professional and consumer information: Includes links on how to order VMR online

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*¹ with permission from the Royal Australian College of General Practitioners.

Every woman aged 15–49 years should be considered for pre-conception care (C). 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.⁴² This should include smoking cessation (A)⁴³ and advice to consider abstinence from alcohol (especially in the early stages of pregnancy),⁴⁴ folic acid and iodine supplementation (A),^{45, 46} review of immunisation status (C),⁴⁷ medications (B)⁴⁸ and chronic medical conditions, especially glucose control in patients with diabetes (B).⁴⁹

There is evidence to demonstrate improved birth outcomes with pre-conception healthcare in women with diabetes, phenylketonuria and nutritional deficiency⁵⁰ as well as benefit from the use of folate supplementation and a reduction in maternal anxiety.⁵¹ The information below lists all the potential interventions that have been recommended by expert groups in pre-conception care (C).

What does pre-conception care include?

Medical issues

Reproductive life plan

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?

3. Royal Australian College of General Practitioners. Guidelines for preventive activities in general practice, 8th edn. Melbourne: RACGP, 2012. Accessed 12 June 2015 <www.racgp.org.au/your-practice/guidelines/redbook/preventive-activities-prior-to-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), and BP and ask about periodontal disease.

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 non-immune 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).

Lifestyle issues

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 and illegal drug and excessive alcohol use 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
- » Listeriosis: avoid paté, soft cheeses (feta, brie, and blue vein), pre-packaged salads, deli meats and chilled/smoked seafood. Wash all fruit and vegetables before eating. Refer to Australian food standards at www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/default.aspx regarding folate, listeria and mercury
- » Fish: limit fish containing high levels of mercury.

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References

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50. Gjerdingen DK, Fontaine P. Preconception health care: a critical task for family physicians. *J Am Board Fam Pract* 1991 4(4):237–50 Search PubMed
51. 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

Pre-pregnancy consultation checklist

In a pre-pregnancy consultation, the GP should check a woman's:

- » medical history
- » reproductive and obstetric history
- » genetic/family history
- » mental health
- » psychosocial history
- » medicine use
- » smoking and alcohol use and cessation
- » substance use and cessation
- » vaccinations
- » folic acid and iodine supplementation
- » healthy weight/nutrition/exercise
- » health environment (toxoplasmosis, cytomegalovirus, parvovirus, listeria, fish)
- » oral health

and should undertake:

- » a general physical assessment
- » investigations; pre-pregnancy investigations depend on the clinical scenario and usually consist of:
 - » determining immunity (e.g. rubella, varicella if immunity status unknown)
 - » screening for anaemia and thalassaemia (e.g. FBE and ferritin).

Other common investigations performed in at-risk populations include:

- » 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

Topic	Organisation web address	Content summary
Preparing for pregnancy	RACGP www.racgp.org.au/your-practice/guidelines/redbook/preventive-activities-prior-to-pregnancy/	Health professional information: RACGP guidelines for preventative activities in general practice (The Red Book)
	RANZCOG www.ranzcog.edu.au/doc/pre-pregnancy-counselling.html	Health professional information: Pre-pregnancy counselling and antenatal screening tests
	The Women's www.thewomens.org.au/PreparingforPregnancy	Consumer information: Preparing for pregnancy; range of topics including lifestyle and immunisation
Medicines in pregnancy and breastfeeding	Medicines Information Service (MIS) Phone: 8345 3190* *9am to 5pm (excluding public holidays) Email: drug.information@thewomens.org.au	Health professional and consumer information: The MIS provides evidence-based medicines information via telephone and email.
	The Women's Pregnancy and Breastfeeding Medicines Guide (PBMG) www.thewomens.org.au/pbm	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.
	Therapeutic Goods Administration www.tga.gov.au/hp/medicines-pregnancy.htm#.VDczumeSzHU	Health professional information: Comprehensive guide with multiple resources including Australian categorisation of risk of drug use in pregnancy and links to to state based obstetric drug administration services
	Mercy Health www.mercyhealth.com.au/Documents/psychotropic%20drugs.pdf	Health professional information: Psychotropic Medication in Pregnancy/Lactation (2008)
	The Women's www.thewomens.org.au/health-information/fact-sheets/#h	Consumer information: Herbal preparations and traditional medicines during pregnancy and breastfeeding

Topic	Organisation web address	Content summary
Iodine/Folate/Vitamin D		
General	<p>RANZCOG www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics Under Routine Antenatal Care</p>	<p>Clinical guideline: Vitamin and Mineral Supplementation and Pregnancy (2015)</p>
Iodine	<p>National Health and Medical Research Council www.nhmrc.gov.au/_files_nhmrc/publications/attachments/new45_statement.pdf</p>	<p>Health professional information: Iodine supplementation for pregnant and breastfeeding women</p>
	<p>Food Standards Australia New Zealand www.foodstandards.gov.au/consumer/generalissues/pregnancy/Pages/iodineandpregnancy.aspx</p>	<p>Consumer information: Iodine and pregnancy</p>
	<p>Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Iodine_explained</p>	<p>Consumer information: Iodine including recommended daily intake during pregnancy</p>
Folate	<p>The Women's thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/folate-in-pregnancy.pdf</p>	<p>Health professional information: Folate in pregnancy</p>
	<p>Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Folate_for_women?open</p>	<p>Consumer information: Folate for pregnant women</p>
	<p>Food Standards Australia New Zealand www.foodstandards.gov.au/consumer/generalissues/pregnancy/folic/Pages/default.aspx</p>	<p>Consumer information: Folate and folic acid for pregnant women</p>
	<p>Family Planning Victoria www.fpv.org.au/sexual-health-info/sex-and-my-body/pregnancy/planning-for-pregnancy/</p>	<p>Consumer information: Planning a pregnancy including the role of folate</p>

Topic	Organisation web address	Content summary
Vitamin D	The Women's thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/vitamin-d-testing-management-maternity-patients-newborns.pdf	Clinical guideline: Vitamin D testing and management in maternity patients and newborns (2014)
	The Women's thewomens.r.worldssl.net/images/uploads/fact-sheets/VitaminD-Pregnancy.pdf	Consumer information: Pregnancy and vitamin D
	Department of Health and Human Services, Victoria www.health.vic.gov.au/chiefofficer/publications/low_vitamin_d_med.htm	Health professional information: Low vitamin D in Victoria

Diet, nutrition, food safety and exercise

Diet and nutrition	Department of Health, Australia www.eatforhealth.gov.au/eating-well/healthy-eating-throughout-all-life/healthy-eating-when-you%E2%80%99re-pregnant-or-breastfeeding	Health professional and consumer information: Information on healthy eating during pregnancy and breastfeeding, with multiple links
	The Women's www.thewomens.org.au/health-information/pregnancy-and-birth/a-healthy-pregnancy/food-nutrition-in-pregnancy/	Consumer information: Food and nutrition in pregnancy
	www.thewomens.org.au/health-information/fact-sheets/#v	Vegetarian eating and pregnancy
	www.thewomens.org.au/health-information/fact-sheets/#w	Weight gain in pregnancy
	thewomens.r.worldssl.net/images/uploads/fact-sheets/Iron-in-pregnancy.pdf	Dietary intake of iron in pregnancy
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_and_diet?open	Consumer information: Pregnancy and diet
	www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Mercury_in_fish?open	Mercury in fish

Topic	Organisation web address	Content summary
Diet and nutrition	Queensland Health www.health.qld.gov.au/nutrition/resources/antenatal_vegan.pdf	Consumer information: Healthy eating for vegan pregnant and breastfeeding mothers
Food Safety	Food Standards Australia New Zealand www.foodstandards.gov.au/consumer/information/pages/foodandpregnancyvideos/listeriaa/transcriptlisteria.aspx	Consumer information: Listeria and pregnancy – includes a link to a video
	www.foodstandards.gov.au/publications/Pages/listeriabrochuretext.aspx	Listeria in pregnancy
	www.foodstandards.gov.au/consumer/chemicals/mercury/Pages/default.aspx	Mercury consumption in pregnancy
	The Women's www.thewomens.org.au/health-information/fact-sheets/#f	Food safety in pregnancy
Exercise	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_and_exercise?open	Consumer information: Benefits and risks of exercise in pregnancy
Smoking, alcohol and other drugs		
Smoking	QUIT Victoria www.quit.org.au/media/article.aspx?ContentID=common-myths-smoking-pregnancy	Consumer information: Common myths about smoking during pregnancy
	www.quit.org.au/preparing-to-quit/getting-ready/speaking-with-your-doctor	Pregnancy and smoking and quit advice
	www.quit.org.au/resource-centre/communities/aboriginal-communities	Indigenous/ATSI specific information
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_and_smoking	Consumer information: Pregnancy and smoking and quit advice

Topic	Organisation web address	Content summary
Alcohol	National Health and Medical Research Council www.nhmrc.gov.au/publications/synopses/ds10syn.htm	Health professional information: <i>Australian Guidelines to Reduce Health Risks from Drinking Alcohol</i> (2009)
	The Women's www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-drugs-alcohol/	Consumer information: Multiple resources to improve health outcomes associated with pregnancy, drugs and alcohol
	Australian Drug Foundation www.druginfo.adf.org.au/fact-sheets/pregnancy-alcohol-and-other-drugs-web-fact-sheet	Consumer information: Pregnancy, alcohol and other drugs
	Better Health Channel www.betterhealth.vic.gov.au/Bhcv2/bhcarticles.nsf/pages/Fetal_alcohol_spectrum_disorder?open www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_medication,_drugs_and_alcohol	Consumer information: Fetal Alcohol Spectrum Disorder (FASD) including contact details for associated resources The effects of medication, drugs and alcohol in pregnancy
Other drugs <i>Amphetamine</i>	Mater Mother's Hospital brochures.mater.org.au/Home/Brochures/Mater-Mothers-Hospital/Amphetamine-use-during-pregnancy-and-breastfeeding	Consumer information: Amphetamine use during pregnancy and breastfeeding
Other drugs <i>Heroin/ Buprenorphine</i>	RACGP www.racgp.org.au/afp/2013/october/opioid-dependence-in-pregnancy/	Health professional information: A general practice perspective for managing opioid dependence
Other drugs <i>Heroin/ Buprenorphine</i>	The Women's and Turning Point www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&uact=8&ved=0CCwQFjACahUKEwjSx72NporIAhWGFaYKHUEYAtg&url=http%3A%2F%2Fwww.turningpoint.org.au%2FMedia-Centre%2Fcentrepubs%2FGetFile.axd%3Foid%3D0aa8109b-adb1-4222-b3d6-c2af4496b2e7&usg=AFQjCNGLMx289juzGsUg9nIUwwjyoL0djg	Clinical guideline: Clinical Guidelines for the use of buprenorphine in pregnancy (2003)

Topic	Organisation web address	Content summary
Other drugs <i>Cannabis</i>	American Congress of Obstetricians and Gynaecologists www.acog.org/Resources-And-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Marijuana-Use-During-Pregnancy-and-Lactation	Health professional information: Marijuana use during pregnancy and lactation
Oral health	Department of Health, Australia www.health.gov.au/internet/publications/publishing.nsf/Content/clinical-practice-guidelines-ac-mod1~part-b~lifestyle-considerations~oral-health	Health professional information: Oral health in antenatal care
	Dental Health Services, Victoria www.dhsv.org.au/dental-advice/general-dental-advice/pregnant-women	Consumer information: Oral health and pregnancy. Includes how to make a public dental appointment
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Teeth_and_pregnancy?open	Consumer information: Dental health and pregnancy

Also see:

- » Models of Maternity Care – [Section 2](#)
- » Medical History – [Section 5](#)
- » Vaccinations – [Section 9](#)
- » Genetic testing – [Section 10](#)
- » Mental health and wellbeing and intimate partner violence – [Section 13](#)

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 (see [Section 3](#)), 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
- » refer to the hospital upon confirmation of pregnancy (do not wait for test results)
- » make other referrals as appropriate (e.g. for genetic counselling, mental health team).

The Victorian Maternity Record may be started at this state. Also see [Section 2](#).

A copy of the initial investigation results should be given to the woman to bring to her first hospital visit.

If the Victorian Maternity Record (VMR) is provided, results should be recorded in this.

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); mental health; nutrition; smoking, substance and alcohol use; medicine use and social issues. (See [Section 3](#) for more detail.)

A comprehensive referral to the hospital should occur as soon as possible to ensure appropriate and timely triage and access to services. Also see [Section 1](#).

A copy of the investigation results should be given to the woman to bring to her first hospital visit.

Recommended initial investigations include (see [Section 6](#) for more detail.)

- » blood group
- » antibody screen
- » FBE (including mean cell volume/mean cell haemoglobin (MCV/MCH))
- » ferritin
- » hepatitis B screening for carrier status
- » hepatitis C serology (not routine at the Women's)
- » syphilis serology
- » rubella antibodies
- » HIV serology
- » urinalysis/midstream urine sample (MSU) microscopy and culture (M&C&S).

Investigations to consider in those with risk factors 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

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CONFIRMATION OF PREGNANCY

- » thyroid stimulating hormone (TSH)
- » Pap test.

Recommended investigations for fetal abnormalities include. See **Section 10** for more detail).

- » a test for Down syndrome – all women, regardless of age, should be offered this, including:
 - » 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 (CVS or amniocentesis) for pregnancies at high risk of aneuploidy – available at the hospitals if high risk
- » a 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 or 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. Also see **Section 10**.

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.

All women, regardless of age, should be offered a test for Down syndrome.

In addition, some high-risk groups should be offered testing for fetal abnormalities/ genetic carrier status.

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 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.

Responsibility	Timing	Notes
<p>Hospital doctor and/or midwife</p> <p>Depending on the hospital, the first hospital visit may consist of doctor or midwife appointment or both.</p> <p>If both, these may occur on different days or the same day.</p>	12–20 weeks	<ul style="list-style-type: none"> » Antenatal consultation and examination » Confirm EDC and document this in the VMR » Follow up investigations ordered by GP and perform any others as required » Discuss results of Down syndrome test or offer second trimester maternal serum screening if Down syndrome testing not already performed » Confirm fetal morphology ultrasound appointment has been arranged » Complete VMR » Woman may be provided with written material » Confirm and record eligibility for shared maternity care » Register for shared maternity care: <ul style="list-style-type: none"> » woman receives a schedule of visits and tests » routine hospital appointments are made (except at WH or WMH where women are notified of hospital appointments by mail closer to the date) » letter of registration sent to SMCA » woman provided with a VMR » For women with past caesarean section: vaginal birth after caesarean (VBAC) eligibility established and discussion about VBAC and elective caesarean undertaken
<p>SMCA</p>	16 weeks	<ul style="list-style-type: none"> » Antenatal consultation and examination » Discuss results of Down syndrome test or offer second trimester maternal serum screening if test for Down syndrome not already performed » Confirm fetal morphology ultrasound appointment has been arranged

ANTENATAL VISITS

Responsibility	Timing	Notes
Hospital midwife (RWH, MHW) – plus additional hospital doctor review if VBAC discussion or requested by SMCA SMCA (WH, WMH)	28 weeks	<ul style="list-style-type: none"> » Antenatal consultation and examination » Investigations (GTT/FBE /Antibodies) – ordered by hospital except for WH where ordered by SMCA » Anti-D administered at hospital if required (see section 7) » For women with past caesarean section: discussion with the hospital doctor regarding vaginal birth after caesarean (VBAC) or elective caesarean
SMCA	32 weeks	Antenatal consultation and examination
SMCA For women requiring anti-D – at RWH, MHW and WMH this is a hospital visit that replaces the 36-week hospital visit – at WH anti-D given at hospital and this remains a SMCA visit	34 weeks	<ul style="list-style-type: none"> » Antenatal consultation and examination » Anti-D administered at hospital if required (If anti-D is required, also an antenatal check at all sites except WH)
Hospital doctor (only see midwife at WH – unless previous caesarean section) At RWH, MHW and WMH this is a SMCA visit for women who attended the hospital at 34 weeks for anti-D	36 weeks	<ul style="list-style-type: none"> » Antenatal consultation and examination » Group B streptococcus (GBS) swab » For women with past history of caesarean section: finalise and record decision on VBAC or elective caesarean with the hospital doctor
SMCA	38 weeks	» Antenatal consultation and examination
SMCA	39 weeks	» Antenatal consultation and examination
SMCA	40 weeks	<ul style="list-style-type: none"> » Depending on the timing of the hospital appointment is, this appointment may not be required » Antenatal consultation and examination
Hospital (may be doctor or midwife, depending on hospital and gestation)	40 weeks to 40 weeks + seven days	<ul style="list-style-type: none"> » Antenatal examination » Consider monitoring/arrange induction if applicable
Hospital care	41 weeks +	<ul style="list-style-type: none"> » Antenatal consultation and examination » Monitoring/arrange induction if applicable

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 and going home.

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

- » general wellbeing check-up
- » enquiry about fetal movements from 20 weeks
- » blood pressure check
- » measurement of fundal height in centimetres
- » fetal auscultation with Doppler fetal monitor from 20 weeks
- » checking fetal presentation from 30 weeks
- » inspection of legs for oedema (a sign of pre-eclampsia and thromboembolic disease – also check for other signs of thromboembolic disease)
- » consideration of urine testing with a dipstick
- » consideration of weighing
- » ensuring investigations are arranged/results checked and followed up if required
- » completing the VMR for each visit (both test results and visit sections) and reviewing previous entries.

For information on the early pregnancy consultation at the first GP visit. Also see [Section 4](#).

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:

- » smoking/alcohol and drug use and cessation if relevant
- » mental health and wellbeing
- » relationships and support networks
- » intimate partner violence
- » breastfeeding.

Early pregnancy:

- » models of care
- » folate and iodine supplementation
- » medicines (prescription, over-the-counter, vitamins and vitamin A derivatives)
- » influenza vaccination (including partners/caregivers)
- » listeria and toxoplasmosis prevention

Each visit must be documented in the VMR along with copies of all results of investigations.

ANTENATAL VISITS

- » diet, nutrition and weight gain
- » common discomforts in pregnancy
- » anti-D if relevant
- » exercise, work, travel, sex
- » oral health care
- » 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 and postpartum maternal immunisations (diphtheria, tetanus, pertussis, varicella, rubella)
- » postnatal GP check for mother and baby
- » community maternal and child health services.

Weight gain in pregnancy

Health care providers should discuss weight gain in pregnancy with women:

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 pounds after birth 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 pounds 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 within the guidelines during pregnancy, the committee concluded.

... Helping women achieve these goals will require health care providers to increase the counseling they give their patients on weight, diet, and exercise. This counseling should occur not just during pregnancy, but well before women plan to conceive, given that many should lose weight to begin pregnancy closer to or at a normal BMI... 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.^{4,5}

4. Office of News and Public Information. Report Updates Guidelines on How Much Weight Women Should Gain During Pregnancy; Calls on Health Care Providers to Help Women Achieve a Healthy Weight before and during Pregnancy. News from the National Academies, news item, 28 May 2009. Accessed 12 June 2015 <www8.nationalacademies.org/onpinews/newsitem.aspx?RecordID=12584>

5. IOM (2009). Nutrition During Pregnancy. National Academy of Sciences, Institute of Medicine, Food and Nutrition Board, Committee on Nutritional Status During Pregnancy and Lactation, Subcommittee on Dietary Intake and Nutrient Supplements During Pregnancy, Subcommittee on Nutritional Status and Weight Gain During Pregnancy. Washington DC: National Academy Press, 1990.

ANTENATAL VISITS

The Institute of Medicine (US) makes the following recommendations for weight gain for singleton pregnancy:

Woman's pre-pregnancy weight category	Body mass index	Recommended range of total weight gain (kg)	Recommended rate of weight gain in 2nd and 3rd trimesters (kg/wk.)
Underweight	Less than 18.5	12.7–18.1	0.51
Normal weight	18.5–24.9	11.3–15.9	0.42
Overweight	25–29.9	6.8–11.3	0.28
Obese (includes all classes)	30 and greater	5–9	0.22

Source: modified from Institute of Medicine (US). Weight Gain during Pregnancy: Reexamining the Guidelines, National Academies Press, Washington, DC, 2009, p.254.

Hospital visits

If undertaking routine shared maternity care, women are generally booked in for key hospital visits at:

- » 12–20 weeks
- » 28 (not at WH or WMH)
- » 36 weeks
- » about 40 weeks.

These are organised by the shared maternity care coordinator and communicated to the woman at or soon after her first hospital visit.

In addition, the shared maternity care coordinator can organise appointments for additional non-urgent clinical consultations and communicate these to a woman; for example, with obstetric doctors, dietetics, physiotherapy, social work, physicians, psychiatry or genetics. This may be at the request of the SMCA or hospital staff.

First hospital visit: 12–20 weeks

Each woman has a detailed health and social assessment undertaken at the first hospital visit (the booking in visit). This provides the opportunity to explore many aspects of maternity care and for women to discuss models of care.

A woman may be provided with written material covering care and hospital contacts.

Depending on the hospital, the first hospital visit may consist of a doctor or midwife appointment or both. If there are 2 components of the first hospital visit, these may occur on different days or on the same day and can take up to 3 hours. It is at this first hospital visit that a woman is officially 'booked in' for the birth of her baby at the hospital.

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 (except at WH and WMH, where women are notified of hospital appointment details closer to the date by mail)
- » 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 the shared maternity care coordinator.

The following table shows requirements for the clinical consultation and investigations at the first hospital visit (12–20 weeks).

Responsibility	Clinical consultation	Investigations
<p>Hospital doctor and/or midwife</p> <p>Depending on the hospital, the first hospital visit may consist of a doctor or midwife appointment or both. If both, these may occur on different days or the same day.</p>	<ul style="list-style-type: none"> » Comprehensive medical, obstetric and social history » Physical examination » Make internal hospital referrals as required, including genetics counselling » Decide on estimated date of confinement and document in VMR » Discuss/arrange investigations and prenatal tests that have not been ordered by GP and can be performed at the hospitals (note some Down syndrome tests that are routinely available in the community cannot be performed at the hospital) » Ensure fetal morphology ultrasound is arranged if not already done (this may or may not be available at the hospital – see 'Fetal morphology ultrasound' in Section 10) » If Rhesus negative, discuss Rh D immunoglobulin (anti-D) » Ensure the woman has a VMR » Ensure the results and findings are entered into the VMR » Determine whether the woman is eligible for shared maternity care/ establish and organise the woman's model of maternity care » Options for birth if previous caesarean section 	<p>Also see Section 6.</p> <p>Antenatal Investigations recommended and to consider.</p> <p>It is preferable that initial investigations are ordered by the GP with copies of results given to the woman to bring to the first hospital visit. If investigations have not been done, they will be arranged at the first hospital visit.</p>

Responsibility	Clinical consultation	Investigations
	<ul style="list-style-type: none"> » Discussion of lifestyle and wellbeing: <ul style="list-style-type: none"> » changes in pregnancy » smoking, alcohol and other drug cessation » medicines (prescriptions, over-the-counter, vitamins) » diet and nutrition » listeria and toxoplasmosis prevention » hospital and community supports (how and when to seek help) » breastfeeding » influenza vaccination via GP » Information about arranging childbirth education classes 	

All hospitals arrange routine 28 and 34 week anti-D for women who are Rhesus negative with no antibodies. Its provision should be documented in the woman's VMR by the hospital.

Hospital visit at approximately 28 weeks

At RWH and MHW, women have a midwife antenatal appointment at this time.

(At WH and WMH this is a SMCA visit.)

Review by a hospital doctor may occur if required or requested by the SMCA if indicated (via the shared maternity care coordinator).

If anti-D is required, it is organised by the hospital staff at this visit and its administration is documented in the VMR.

This appointment involves both a routine clinical assessment and a discussion about admission, birth and the postnatal period. This discussion is often called a Maternity Admission Appointment (or MAP appointment) and includes a discussion and the provision of information about:

- » admission and discharge
- » childbirth education
- » previous birth experience
- » signs of labour, when to come to hospital, where to present and what to bring
- » birth plan, pain relief, monitoring, episiotomy, labour support
- » infant feeding (breastfeeding support)
- » neonatal screening tests (Guthrie test and hearing screen), vitamin K, hepatitis B immunisation
- » postnatal contraception and child safety/car restraints
- » GP postnatal check and community support services (including establishing a support network)
- » pertussis vaccination via GP (for woman, recommended in each pregnancy, ideally at 28–32 weeks; also for partners and other caregivers if not given in past 10 years).

ANTENATAL VISITS

For women undertaking shared maternity care at WH and WMH, this is a SMCA visit. In this case:

- » if anti-D is required, the hospital midwife at booking will organise an appointment at the hospital's Pregnancy Day Service for administration of anti-D (if the woman needs to change this appointment, she should call PDS)
- » the discussion covering the above issues occurs at the first hospital visit.

The following table shows requirements for the clinical consultation and investigations at approximately 28 weeks.

Responsibility	Clinical consultation	Investigations
Hospital midwife (RWH, MHW)	<ul style="list-style-type: none"> » Antenatal consultation and examination » Order/check investigations 	GTT FBE
Hospital doctor review may occur if required or requested by SMCA via shared maternity care coordinator	<ul style="list-style-type: none"> » Review and complete VMR entries » Maternity Admission appointment/discussion (except WH, where it is done at the first hospital visit) 	Antibody screen Anti-D prophylaxis for Rhesus negative women with no rhesus antibodies – at 28 weeks
WH, WMH – SMCA visit (no hospital visit)		Also see Section 7 .

Hospital visit at approximately 36 weeks

The following table shows requirements for the clinical consultation and investigations at approximately 36 weeks.

Responsibility	Clinical consultation	Investigations
Hospital doctor (RWH, MHW)	<ul style="list-style-type: none"> » Antenatal consultation and examination » Review and complete VMR entries 	GBS swab Consider FBE/ferritin
Hospital midwife (WH, WMH – unless previous caesarean section)	<ul style="list-style-type: none"> » If previous lower uterine segment caesarean section (LUSCS), document decision on whether woman will attempt a vaginal birth after caesarean (VBAC) or have an elective LUSCS » If elective caesarean, a pre-operative visit is arranged by the hospital 	Anti-D prophylaxis for Rhesus negative women with no Rhesus antibodies – at 34 weeks Also see Section 7 .

For hospitals without a routine 28-week hospital visit (WH and WMH), anti-D is administered at the Pregnancy Day Service, with the appointment organised at the first hospital visit. In this instance, women still need to see their SMCAs for an antenatal check. SMCAs should check women have had or are having their anti-D.

For all hospitals (except WH) the 34-week SMCA visit and 36-week hospital visits are swapped so women come to the hospital at 34 weeks and also receive their anti-D at this visit.

Hospital visit at approximately 40 weeks to 40 weeks + seven days

The following table shows requirements for the clinical consultation and investigations at 40 weeks to 40 weeks + seven days.

Responsibility	Clinical consultation	Investigations
Hospital doctor or midwife	<ul style="list-style-type: none">» Antenatal consultation and examination» Review and document investigations/ results» Review and complete VMR entries» Monitoring/arrange induction if applicable	<p>If applicable:</p> <ul style="list-style-type: none">Cardiotocograph (CTG)Amniotic Fluid Index (AFI)

Hospital care from 41 weeks onwards

After 40 weeks + seven days, a woman has hospital visits with close surveillance.

ANTENATAL INVESTIGATIONS

This section provides information on routine investigations and commonly considered antenatal investigations. Although there is considerable alignment between the four hospitals, routine antenatal investigations vary. 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.

Also see [Section 10](#).

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 (not routine at RWH)
- » syphilis serology
- » rubella antibodies
- » HIV serology
- » urinalysis/MSU M&C&S.

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.

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 the closest maternity hospital emergency department for Rh D immunoglobulin (anti-D).

Also see [Section 7](#).

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 the shared maternity care coordinator to arrange a specialist consultation if required. Also see [Section 6](#) and [Section 14](#) for further information on hepatitis B carriers.

Hepatitis C serology

Hepatitis C serology is performed to determine hepatitis carrier status and is offered routinely at MHW, WMH and WH.

At RWH hepatitis C serology is only offered to women at increased risk of infection or exposure. 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 should 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).

At WH a haemoglobin electrophoresis is routine, unless a previous test result is available (please forward this to the hospital along with the results of other investigations).

A request for blood to be kept for a DNA analysis if later required is valuable.

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 it is 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. Also see: 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 two hours is performed at the first opportunity after conception.⁶ 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 sister with DM)
- » BMI > 35 kg/m² (at conception).
- » Previous macrosomia (baby with birth weight > 4500 gms or > 90 th centile)
- » Polycystic ovarian syndrome or metabolic syndrome
- » Medications: corticosteroids, antipsychotics.

6. Nankervis A, McIntyre H, Moses R, Ross G, Callaway L, Porter C, et al. ADIPS consensus guidelines for the testing and diagnosis of gestational diabetes mellitus in Australia. Sydney: ADIPS, 2013.

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 at risk of vitamin D deficiency should be tested 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 or 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.

Also see [Section 11](#) for Hospital Support Services and [Section 12](#) for Follow-up of Findings: Management and Referral of Abnormal Findings.

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 non-immune 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). For investigation of suspected infections, please see [Section 8](#).

Second trimester investigations

Test	Timing	Notes
GTT	26–28 weeks	<ul style="list-style-type: none"> » Ordered by hospital staff at RWH, MHW, WMH » Ordered by SMCA at WH
FBE	26–30 weeks	<ul style="list-style-type: none"> » Ordered by hospital staff at RWH, MHW, WMH » Ordered by SMCA at WH
Antibody screen	26–30 weeks	<ul style="list-style-type: none"> » Ordered by hospital staff at RWH, MHW, WMH » Ordered by SMCA at WH

At WMH, pathology request forms for a woman's second trimester investigations are provided by the hospital at a woman's first hospital appointment with a copy to the SMCA. As WMH does not have a routine 28 week hospital visit after these investigations, it is particularly important the results are checked and acted upon appropriately by the SMCA, even though they were not ordered by them.

At WH, the SMCA is responsible for ordering and reviewing the results of the second trimester investigations, with a copy of the results attached to the VMR.

Glucose Tolerance Test (GTT)

A GTT of 75 g of glucose is routinely undertaken at 26–28 weeks to diagnose 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 the 1 and 2 hour plasma glucose measured.

ANTENATAL INVESTIGATIONS

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

- » Fasting ≥ 5.1 mmol
- » 1 hour ≥ 10 mmol
- » 2 hour ≥ 8.5 mmol.

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

- » make appropriate hospital appointments with a diabetes educator and obstetrician
- » 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, thrombocytopaenia 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

Test	Timing	Notes
Screening for Group B streptococcus (GBS)	35–37 weeks	Performed at the hospital – women are offered an opportunity to take the swab themselves
Consider: FBE and ferritin	35–37 week	Consider if previous low haemoglobin, low ferritin or clinical indication

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 early in labour as it is preferable that antibiotic treatment is administered at least 4 hours prior to delivery.

At all services, except WH, the hospital orders the routine second trimester investigations (GTT, FBE, Antibody screen) with a copy of the results sent to the SMCA.

At WH, these investigations are ordered by the SMCA.

These pathology requests slips may have been provided to the woman at her first hospital visit, it is therefore valuable if SMCA can remind women.

Resources on antenatal visits, investigations and findings

Topic	Organisation web address	Content summary
General testing and care	Department of Health, Australia www.health.gov.au/antenatal	National antenatal care guidelines: On each of the 3 trimesters with core principles of care on a variety of antenatal topics (2012)
	3 Centres Collaboration 3centres.com.au/guidelines/low-risk-pregnancy	Antenatal care guidelines: Multiple resources related to investigations, examination and schedule visits for low-risk pregnancy
	RANZCOG www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics	Clinical guidelines: <i>Routine Antenatal Assessment in the Absence of Pregnancy Complications</i> (2013) <i>Prenatal Screening for fetal Abnormalities</i> (2013) <i>Maternal Group B Streptococcus (GBS) in Pregnancy: Screening and Management</i> (2012) – GBS Swab Sheet (Diagram) <i>Prenatal Assessment of Fetal Structural Abnormalities</i> (2015) <i>Fetal Morphology Ultrasound</i> (2014) <i>Measurement of cervical length for prediction of preterm birth</i> (2012)
	Under Routine Antenatal Care	
	American Congress of Obstetricians and Gynaecologists www.acog.org/Patients/FAQs/Prenatal-Development-How-Your-Baby-Grows-During-Pregnancy	Consumer information: Fetal development during pregnancy

Topic	Organisation web address	Content summary
Diabetes	<p>Australasian Diabetes in Pregnancy Society adips.org/downloads/ADIPS_ConsensusGuidelinesGDM-03.05.13VersionACCEPTEDFINAL.pdf</p>	<p>Clinical guidelines: <i>ADIPS Consensus Guidelines for the Testing and Diagnosis of Diabetes Mellitus in Australia</i> (2013)</p>
	<p>National Institute for Health and Clinical Excellence (UK) www.nice.org.uk/guidance/ng3</p> <p>pathways.nice.org.uk/pathways/diabetes-in-pregnancy</p>	<p>Clinical guideline: <i>Diabetes in pregnancy: management of diabetes and its complications from preconception to the postnatal period</i> (2015)</p> <p>Algorithms on diabetes in pregnancy with links to various aspects of care from gestational diabetes to postnatal diabetic care</p>
	<p>Diabetes Australia www.diabetesvic.org.au</p>	<p>Comprehensive guide for health professionals and consumers: Multiple resources on diabetes, including free booklet and DVD resources</p>
	<p>The Women's www.thewomens.org.au/health-professionals/clinical-resources/clinical-guidelines-gps/</p>	<p>Clinical guidelines: Several related to diabetes in pregnancy and labour (2012/2013)</p>
	<p>Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Gestational_diabetes?open</p>	<p>Consumer information: Covers various aspects of diagnosis and management and support for women with gestational diabetes</p>

Topic	Organisation web address	Content summary
Thyroid	<p>RANZCOG</p> <p>www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics</p> <p>Under Routine Antenatal Care</p>	<p>Clinical guideline:</p> <p><i>Testing for Hypothyroidism During Pregnancy with Serum TSH</i> (2015)</p>
	<p>Endocrine Society (US)</p> <p>www.endocrine.org/sitecore%20modules/web/~/_/media/endosociety/Files/Publications/Clinical%20Practice%20Guidelines/Thyroid-Exec-Summ.pdf#search=%22management of thyroid dysfunction during pregnancy postpartum.%22</p>	<p>Clinical guideline:</p> <p><i>Management of Thyroid Dysfunction during Pregnancy and the Postpartum</i> (2012)</p>
	<p>RACGP</p> <p>www.racgp.org.au/afp/2012/august/thyroid-disease-in-the-perinatal-period/</p>	<p>Health professional information:</p> <p>Article on Thyroid disease in the perinatal period (2012)</p>
Hypertension	<p>Society of Obstetric Medicine of Australia and New Zealand (SOMAZ)</p> <p>www.ranzcog.edu.au/doc/somanz-hypertensive-disorders.html</p>	<p>Health professional information:</p> <p><i>Guideline for the management of hypertensive disorders of pregnancy</i> (2014)</p>
	<p>The Women's</p> <p>www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-problems/pregnancy-problems-in-later-pregnancy/pre-eclampsia/</p> <p>thewomens.r.worldssl.net/images/uploads/fact-sheets/Pre-eclampsia.pdf</p>	<p>Consumer information:</p> <p>High blood pressure and eclampsia during pregnancy with a link to Australian Action on Preeclampsia</p> <p>Pre-eclampsia</p>

Topic	Organisation web address	Content summary
Vitamin D	Department of Health and Human Services, Victoria www.health.vic.gov.au/chiefhealthofficer/publications/low_vitamin_d_med.htm	Health professionals information: Low vitamin D in Victoria including a section on 25-hydroxy vitamin D testing and treatment
	The Women’s thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/vitamin-d-testing-management-maternity-patients-newborns.pdf	Clinical guideline: Vitamin D testing and management in maternity patients and newborns (2014)
	RANZCOG www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics Under Routine Antenatal Care	Clinical guideline: Vitamin and Mineral Supplementation and Pregnancy (2014). Includes advice on Vitamin D

Medical history		
Asthma	National Asthma Council Australia www.astmahandbook.org.au/ www.nationalasthma.org.au/publication/pregnancy	Health professional information: Australian Asthma Handbook available for purchase and download Consumer information: Healthy living information for managing asthma in pregnancy. Includes link to an asthma plan
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Asthma_-_pregnancy_and_breastfeeding	Consumer information: Managing asthma during pregnancy and breastfeeding

Topic	Organisation web address	Content summary
Epilepsy	Epilepsy Foundation of Victoria www.epinet.org.au/articles/ndis_-_epilepsy_resources	Health professional and consumer information: Includes access to online epilepsy management plans
	American Academy of Neurology www.neurology.org/content/73/2/142.full	Health professional information: Article on Management issues for women with epilepsy – <i>Focus on pregnancy</i> (2009)
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Epilepsy_lifestyle_issues	Consumer information: Epilepsy and lifestyle
Obesity	RANZCOG www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics Under Routine Antenatal Care	Clinical guideline: <i>Management of Obesity in Pregnancy</i> (2013)
	Department of Health and Human Services, Victoria docs2.health.vic.gov.au/docs/doc/Maternity-and-Newborn-Clinical-Network-Obesity-Guideline-August-2011	Clinical guideline: <i>Maternity and Newborn Clinical Network Obesity Guideline</i> (2011)
Female genital mutilation	The Women's www.thewomens.org.au/health-professionals/sexual-reproductive-health/de-infibulation-clinic www.thewomens.org.au/health-professionals/health-professionals-gynaecology/family-reproductive-rights-education-program-farrep	Health professional information: On services and supports available for women and de-infibulation

Topic	Organisation web address	Content summary	
Common concerns in pregnancy			
General	RACGP www.racgp.org.au/download/documents/AFP/2010/November/201011rio.pdf	Health professional information: Article <i>Does it matter if I'm 'just' pregnant?</i> (2010) outlining how medical problems should be managed differently during early pregnancy	
	The Women's www.thewomens.org.au/health-professionals/clinical-resources/clinical-guidelines-gps www.thewomens.org.au/health-information/pregnancy-and-birth/a-healthy-pregnancy/common-concerns-in-early-pregnancy	Clinical guidelines: Many guidelines and resources related to 3 trimesters of pregnancy Consumer information: Common concerns of early pregnancy and helpful tips to minimise their impact	
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Carpal_tunnel_syndrome www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Restless_legs_syndrome www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Heartburn_is_a_form_of_indigestion www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Morning_sickness?open www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_-_labour?open www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_and_travel?open	Consumer information: Provided by the Victorian Government on: Carpel tunnel syndrome Restless legs syndrome Heartburn Pregnancy and morning sickness Pregnancy and labour Travel during pregnancy	
	Centers for Disease Control and Prevention wwwnc.cdc.gov/travel/yellowbook/2016/advising-travelers-with-specific-needs/pregnant-travelers	Health professional information: Travel during pregnancy	
	Continenace Foundation of Australia www.continenace.org.au/pages/pregnancy.html	Consumer information: Includes a video link and resources specific to pregnancy related bladder and bowel continence issues	
	Travel		
	Incontinence		

Topic	Organisation web address	Content summary
Childbirth	<p>Better Health Channel</p> <p>www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Childbirth_pain_relief_options?open</p> <p>www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Childbirth_medical_interventions?open</p> <p>www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Caesarean_section?open</p>	<p>Consumer information:</p> <p>Provided by the Victorian Government on:</p> <p>Pain relief options during childbirth</p> <p>Medical Interventions during childbirth</p> <p>Caesarean section</p>

Also see:

- » Iodine, Folate, Vitamin D/Diet, Nutrition, Food safety and exercise/Smoking, alcohol and other drugs/ Oral health – [Section 3](#)
- » Infectious Diseases – [Section 8](#)
- » Vaccinations – [Section 9](#)
- » Genetic testing – [Section 10](#)
- » Mental health and wellbeing and intimate partner violence – [Section 13](#)
- » Breastfeeding – [Section 14](#)

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.

At RWH and MHW, anti-D is arranged and administered at the 28-week hospital visit.

At WH and WMH, an appointment is made for the woman by the hospital staff at a woman's first hospital visit, with anti-D administered at the hospital's Pregnancy Day Service. At WH and WMH, there is no antenatal check at this time, with a woman is still required to see her SMCA for a check.

Anti-D at 34 weeks

This is arranged by the hospital.

At RWH, MHW and WMH, the 36-week hospital visit is changed to a 34-week hospital visit so the provision of anti-D can be combined with an antenatal consultation. This does not occur at WH, where a woman must still present to her SMCA for an antenatal consultation at 34 weeks.

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:^{7,8}

- » 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.

7. National Blood Authority guidelines on the prophylactic use of Rh D immunoglobulin (anti-D) in obstetrics, 2003

8. RANZCOG Guidelines for the use of Rh (D) Immunoglobulin (Anti-D) in obstetrics in Australia (2012)

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

Organisation web address	Content summary
National Blood Authority www.blood.gov.au/system/files/documents/glines-anti-d.pdf	Clinical guideline: <i>Guidelines on the prophylactic use of Rh D immunoglobulin (Anti-D) in obstetrics (2003)</i>
RANZCOG www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics Under Red cell Iso-immunisation and Rh(D) prophylaxis	Clinical guideline: <i>Guidelines for the prophylactic use of Rh (D) immunoglobulin (Anti-D) in obstetrics in Australia (2012)</i>

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. See: 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 (at WMH the On Call Obstetrician). 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.
- » If a non-urgent infectious disease appointment is required and the woman is registered for shared maternity care, contact the shared maternity care coordinator and note this in the VMR.
- » 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 the shared maternity care coordinator 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.⁹

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.¹⁰

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 the shared maternity care coordinator. If further management is required, including serial ultrasound, this will be arranged by the hospital and shared maternity care is usually ceased.

9. Department of Human Services. Chicken Pox or Shingles (Varicella/Herpes Zoster), in Blue Book: Guidelines for the Control of Infectious Diseases, 2005. Accessed 15 June 2015 <http://ideas.health.vic.gov.au/bluebook/chicken-pox.asp>.

10. 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.

Resources on infectious diseases

Topic	Organisation web address	Content summary
General infectious diseases in pregnancy	Australasian Society of Infectious Diseases www.asid.net.au/documents/item/368	Clinical guidelines: Comprehensive guidelines (2014) with multiple resources relating to the management of 14 perinatal infections. Endorsed by RANZCOG
	Medical Journal of Australia www.mja.com.au/journal/2002/176/5/1-infections-pregnant-women	Health professional information: Article <i>Infections in pregnant women</i> (2002)
General infectious diseases in pregnancy	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Chlamydia	Consumer information: By the Victorian Government on a number of pregnancy related topics including:
	www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Chickenpox	Chlamydia Chickenpox
	www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Cytomegalovirus_(cmv)	Cytomegalovirus
	www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Hepatitis_C_the-facts	Hepatitis C
	www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Slapped_cheek_disease?open	Slapped cheek disease
	www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Toxoplasmosis_reducing_the_risks?open	Toxoplasmosis
Parvovirus	Department of Health, Australia www.health.gov.au/internet/main/publishing.nsf/Content/cda-pubs-cdi-2000-cdi2403s-cdi24msa.htm	Health professional information: Parvovirus B19 infection and its significance in pregnancy

Also see:

» Vaccinations – Section 9

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 (see **Section 8**) 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.¹¹

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.

11. NHMRC. The Australian Immunisation Handbook, 10th Edition. Canberra: Australian Government, 2013, p.252. Accessed 15 June 2015 <www.health.gov.au/internet/immunise/publishing.nsf/Content/7B28E87511E08905CA257D4D001Jan2014v2.pdf>.

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'.¹²

Hepatitis A

'Hepatitis A vaccine is not routinely recommended for pregnant or breastfeeding women, but can be given where vaccination is considered necessary'.¹³

Typhoid Parental Vi polysaccharide

'Parental Vi polysaccharide vaccines are not routinely recommended for pregnant or breastfeeding women, but can be given where vaccination is considered necessary. (Note the oral live attenuated typhoid vaccine is contraindicated in pregnant women)'.¹⁴

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)'.

12. Ibid p.227.

13. Ibid p.206.

14. Ibid p.421.

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)'.¹⁵

Contraindicated vaccinations

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

Resources on maternal vaccinations

Topic	Organisation web address	Content summary
Maternal vaccinations		
General	Therapeutic Goods Administration www.tga.gov.au/hp/medicines-pregnancy.htm#.VDczumeSzHU	Health professional information: <i>Prescribing medicines in pregnancy database.</i> Information for health professionals planning the medical management of pregnant patients or patients intending to become pregnant
	Department of Health, Australia www.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home	Health professional information: <i>NHMRC Australian Immunisation Handbook 10th edition (2014)</i> Section 3.3.2 contains information related to women who are planning pregnancy, pregnant, breastfeeding and pre-term infants
	Melbourne Vaccine Education Centre www.mvec.vic.edu.au/immunisation-references/maternal-vaccination-during-pregnancy/	Health professional and consumer information: Comprehensive guide with multiple resources related to maternal vaccination during pregnancy with links to other immunisation resources

15. Ibid Table 3.3.1: Recommendations for vaccination in pregnancy. <http://www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part3~handbook10-3-3>

Topic	Organisation web address	Content summary
Influenza	Influenza Specialist Group www.isg.org.au/index.php/	Health professional information: Links to a range of education and resources related to influenza
	Australian Immunisation Handbook www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/ITO150-cnt	Consumer information: Influenza vaccination 2015 Including 13 in LOTE.
	Department of Health, Australia www.health.gov.au/internet/immunise/publishing.nsf/Content/immunise-influenza	Consumer information: Influenza vaccination 2015
	The Women's thewomens.r.worldssl.net/images/uploads/fact-sheets/Pregnancy-Flu.pdf	Consumer information: Pregnancy and flu
Measles, mumps and rubella	Australian Immunisation Handbook www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/IT0167-cnt	Health professional information: From the NHMRC <i>Australian Immunisation Handbook 10th edition</i> (2014)
	Department of Health and Human Services, Victoria www.health.vic.gov.au/immunisation/factsheets/mmr.htm	Consumer information: Measles, mumps and rubella
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Rubella	Consumer information: Rubella
Varicella	Australian Immunisation Handbook www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4~handbook10-4-22	Health professional information: From the NHMRC <i>Australian Immunisation Handbook 10th edition</i> (2014)

Topic	Organisation web address	Content summary
Diphtheria, tetanus and pertussis	<p>Australian Immunisation Handbook</p> <p>Diphtheria www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4~handbook10-4-2</p> <p>Tetanus www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4~handbook10-4-19</p> <p>Pertussis www.immunise.health.gov.au/internet/immunise/publishing.nsf/Content/Handbook10-home~handbook10part4~handbook10-4-12</p>	<p>Health professional information:</p> <p>From the NHMRC <i>Australian Immunisation Handbook 10th edition</i> (2014)</p>
	<p>Department of Health and Human Services, Victoria</p> <p>www.health.vic.gov.au/immunisation/factsheets/diphtheria.htm</p>	<p>Consumer information:</p> <p>Diphtheria, tetanus and pertussis</p>
Also see:		
» Infectious Diseases in Pregnancy – Section 8		

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.

Maternal age at delivery (years)	Chance of having a live-born baby with Down syndrome* ¹⁶	Chance of having a live-born baby with a chromosomal abnormality ¹⁷
20–24	1 in 1411	1 in 506
25	1 in 1383	1 in 476
26	1 in 1187	1 in 476
27	1 in 1235	1 in 455
28	1 in 1147	1 in 435
29	1 in 1002	1 in 417
30	1 in 959	1 in 385
31	1 in 837	1 in 385
32	1 in 695	1 in 323
33	1 in 589	1 in 286
34	1 in 430	1 in 244

16. Morris JK, Mutton DE, Alberman E. Revised estimates of the maternal age specific live birth prevalence of Down syndrome. *J Med Screen* 2002; 9(1):2–6.

17. Hook EB. Rates of chromosomal abnormalities. *Obstet Gynecol* 1981; 58:282–85.

All pregnant women, regardless of age, should be offered a:

- test for Down syndrome, and
- a 19–22 week fetal morphology ultrasound.

In addition

- high risk population-based and carrier screening may be relevant, and
- if there is a personal or family history of genetic problems, a referral to genetics services should be considered.

Maternal age at delivery (years)	Chance of having a live-born baby with Down syndrome ^{*16}	Chance of having a live-born baby with a chromosomal abnormality ¹⁷
35	1 in 338	1 in 179
36	1 in 259	1 in 149
37	1 in 201	1 in 124
38	1 in 162	1 in 105
39	1 in 113	1 in 81
40	1 in 84	1 in 64
41	1 in 69	1 in 49
42	1 in 52	1 in 39
43	1 in 37	1 in 31
44	1 in 28	1 in 24
45	1 in 32	1 in 19

* 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.

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

These are a group of tests 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 hospitals 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

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 weeks 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 β -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 is reported at of ≥ 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 hospitals.

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
- further tests and management may be time sensitive.

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 β -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.

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 >3.5 mm 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.

It is strongly suggested that women are reviewed by the person who ordered the combined first trimester screen one week after the ultrasound to ensure a result has been generated.

If a woman has a high-risk screening result on combined first trimester screening or second trimester maternal serum screening, she may choose to have:

- A Non-invasive pre-natal test (NIPT), or
- A diagnostic test (CVS or amniocentesis), or
- Further counselling.

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 hospitals 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.

Amniocentesis

An amniocentesis is usually performed at 15–18 weeks. If there is an indication for testing, this can be undertaken at the hospitals 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

Arrangements for a CVS or amniocentesis if a woman is high risk vary across the hospitals:

- » At RWH and MHW, GPs and obstetricians can arrange a CVS or amniocentesis directly for high-risk women who are booked for care at the hospital (via the shared maternity care coordinator) as long as the woman has been adequately counselled. Diagnostic tests can only be undertaken for women already booked for care at the hospital, although this may be before the first hospital appointment.
- » At WH, SMCA should refer women directly to the Western Health Maternal Fetal Medicine Unit/genetic services, which arranges counselling and testing.
- » At WMH, SMCA should contact the On Call obstetric via hospital switch to discuss the situation (if required women are then referred to the Western Health Maternal Fetal Medicine Unit/genetic services, which arranges counselling and testing).

At RWH and MHW, when referring directly for a CVS or amniocentesis:

- » provide adequate counselling for the woman (this includes the advantages and disadvantages of diagnostic testing, alternatives to CVS and amniocentesis e.g. NIPT in some cases, the risks involved and implications of possible test results)
- » provide the shared maternity care coordinator directly with a written request and include:
 - » the woman's details and referring doctor's details
 - » the test requested and indication, including any results
 - » EDC, the woman's Rhesus status and hepatitis C status if known
 - » confirmation that consent has been obtained.

The shared maternity care coordinator will contact both the referring doctor and the woman with details of the appointment.

If genetic counselling is required, the SMCA should refer to the hospital Genetics Services (see 'Hospital Genetics Services contact details' below).

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). Also see [Section 6](#).

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. Also see [Section 6](#).

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

At RWH and MHW, to arrange a CVS or amniocentesis directly for a woman booked for care at the hospital, the SMCA (GPs and obstetricians only) should contact the shared maternity care coordinator with the woman's details, the test requested, indication, test results, Rhesus status, hepatitis C status (if known) and confirmation that consent has been obtained.

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
- » to ensure the provision of timely advice, directly contact Genetics Services at the hospital the woman has been referred to
- » for some conditions, tests can also be ordered directly by GPs; include a description of the family member (affected or carrier) relationship, name and date of birth, and details of the type of mutation if known.

Genetic counselling

Also see [Section 11](#).

Health care providers are encouraged to offer early advice and counselling regarding all tests. 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 at WH)
- » 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 if a couple with a high risk of having a child with a genetic condition wishes to discuss prenatal testing, including diagnostic testing
- » 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 eligible for such (if pre-pregnancy), but requirements for access vary.

When ordering investigations for genetic conditions (e.g. thalassaemia, cystic fibrosis, fragile X syndrome) for a woman and her partner, indicate on the investigation form if the woman is pregnant (and partner details for partner testing) so that the results and analysis can be expedited.

If either parent is identified as a carrier, immediate follow up is required; especially if the woman is pregnant, as prenatal diagnosis may be required.

For haemoglobinopathies undertake urgent partner testing (see section 6). Otherwise refer directly to the Genetics service of the hospital for which the woman is booked into care.

Hospital Genetics Service contact details

Mercy Hospital for Women

Phone: 8458 4250

Fax: 8458 4254

The Women's (Parkville and Sandringham)

Phone: 8345 2180

Fax: 8345 2179

Werribee Mercy Hospital

Phone: 8754 3448 (directly 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).

Western Health (Maternal Fetal Medicine Unit and Genetics)

Phone: 8345 1811

Fax: 8345 0700

To ensure the provision of timely advice, if urgent or semi-urgent referral is required, it is best to contact the Genetics Services of units directly and not to utilise the general referral fax systems at hospitals.

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 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; had 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.

As with all investigations, the referring practitioner is responsible for reviewing the result. If advice is required regarding a result, contact the hospital shared maternity care coordinator. In addition, the result should be noted in the results section of the VMR and a copy of the results provided to the woman to bring to her next hospital visit.

Hospital ultrasound service contact details

SMCAs are unable to order ultrasounds at the hospitals to follow-up ultrasound results obtained from an external provider. If follow up or advice is needed or a community ultrasound is required, contact the shared maternity care coordinator.

The following details are provided to obtain results only.

Mercy Hospital for Women

Phone: 8458 4300

The Women's (Parkville)

Phone: 8345 2250

The Women's (Sandringham)

Phone: 9076 1233

Werribee Mercy Health

Phone: 8754 8613

Western Health

Phone: 8345 1664

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.

Resources on testing for fetal abnormalities

Topic	Organisation web address	Content summary
General genetic testing	World Health Organisation www.who.int/genomics/public/geneticdiseases/en/index2.html#ts	Health professional information: Comprehensive site with multiple resources including thalassaemia, cystic fibrosis, Tay-Sachs disease, fragile X syndrome and Huntington's disease
	Victorian Clinical Genetics Services (VCGS) www.vcgs.org.au	Health professional and consumer information: Comprehensive site with multiple resources for genetic testing and support services in Victoria

Topic	Organisation web address	Content summary
General genetic testing	<p>National Health and Medical Research Council</p> <p>www.nhmrc.gov.au/guidelines-publications/e99</p> <p>www.nhmrc.gov.au/_files_nhmrc/file/your_health/egenetics/genetics_in_family_mdicine.pdf</p> <p>www.nhmrc.gov.au/_files_nhmrc/file/your_health/egenetics/practioners/gems/sections/03_testing_and_pregnancy.pdf</p>	<p>Health professional information:</p> <p><i>Medical Genetic Testing: information for health professionals.</i> Comprehensive guidelines guide with multiple resources for genetic testing.</p> <p><i>Genetics in Family Medicine: The Australian Handbook for General Practitioners</i> (2007)</p> <p>Information on a variety of genetic conditions including cystic fibrosis and fragile X syndrome, includes testing in pregnancy</p> <p><i>Genetics in Family Medicine. The Australian Handbook for General Practitioners. Testing and Pregnancy</i> (2007)</p>
	<p>RANZCOG</p> <p>www.ranzcog.edu.au/college-statements-guidelines.html#obstetrics</p> <p>Under Routine Antenatal Care</p>	<p>Clinical guidelines:</p> <p><i>Prenatal Screening and Diagnosis of Chromosomal and Genetic Abnormalities in the Fetus in Pregnancy</i> (2015)</p> <p><i>Prenatal Screening for Fetal Abnormalities</i> (2013)</p>
	<p>Aneuploidy screening tests</p>	
Maternal serum screening	<p>Victorian Clinical Genetics Services</p> <p>www.vcgspathology.com.au/sections/MaternalSerumScreening/?docid=51a81179-f5d3-41ee-8892-992e00efe87d</p> <p>www.vcgspathology.com.au/downloads/YourPregnancy-YourChoice.pdf</p>	<p>Health professional information:</p> <p>Maternal serum screening test</p> <p>Consumer information:</p> <p>Maternal serum screening test</p>
	Combined first trimester screening	<p>www.vcgspathology.com.au/downloads/CombinedFirstTrimesterScreening.pdf</p> <p>www.vcgs.org.au/pathology/downloads/mss/Prenatal_Testing.pdf</p>

Topic	Organisation web address	Content summary
Non-invasive prenatal test (NIPT)	RANZCOG www.ranzcog.edu.au/womens-health/college-communicues/1357-dna-based-noninvasive-prenatal-testing-for-fetal-aneuploidy.html www.google.com.au/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=Fetal%20chromosomal%20site%3Aranzcog.edu.au	Health professional information: RANZCOG communiqué on (<i>NIPT</i>) for <i>Fetal Aneuploidy</i> - reflects emerging clinical and scientific advances (April 2015) Prenatal screening and diagnosis of chromosomal and genetic abnormalities in the fetus
	Victorian Clinical Genetics Services (VCGS) www.vcgs.org.au/perceptNIPT	Health professional and consumer information: Precept NIPT
	Healthscope Pathology www.healthscopepathology.com.au/index.php/advanced-pathology/344/harmony-prenatal-test/	Health professional and consumer information: Harmony NIPT
	Melbourne IVF mivf.com.au/sites/mivf.com.au/files/attachments/panoramatestclinicianfactsheet.pdf	Health professional and consumer information: Panorama NIPT
	Baby Center www.babycenter.com.au/a25011141/what-is-a-non-invasive-prenatal-test	Consumer information: NIPT

Aneuploidy diagnostic tests

Amniocentesis	The Royal Australian and New Zealand College of Radiologists www.insideradiology.com.au/pages/view.php?T_id=69#.VaMLZ1-qpBc	Health professional information: Comprehensive guide with multiple resources related to amniocentesis
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Amniocentesis	Consumer information: Amniocentesis
	Baby Center www.babycenter.com.au/a327/amniocentesis	Consumer information: Amniocentesis

Topic	Organisation web address	Content summary
Chorionic villus sampling (CVS)	The Royal Australian and New Zealand College of Radiologists www.insideradiology.com.au/pages/view.php?T_id=70#.VaMMOV-qpBc	Health professional information: Comprehensive guide with multiple resources related to CVS
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/pregnancy_tests_chorionic_villus_sampling	Consumer information: CVS

Tests for other genetic disorders

Cystic fibrosis	Cystic Fibrosis Victoria www.cfscreening.com.au/	Health professional and consumer information: Comprehensive guide with multiple resources related to cystic fibrosis including carrier testing
	Victorian Clinical Genetics Services (VCGS) www.vcgs.org.au/clinical/sections/Patients/?docid=dab2e102-8143-40f1-ab12-c4ae8e4b9101	Pathology request form and information: <i>Reproductive genetic carrier screen</i> – carrier screening for cystic fibrosis, fragile X syndrome and spinal muscular atrophy
Fragile X	Fragile X Association of Australia fragilex.org.au/resources/information-pack-and-brochure/	Consumer information: Fragile X with links to services and support groups
Thalassaemia	Thalassaemia Australia www.thalassaemia.org.au/health-professional	Health professional information: Haemoglobinopathy carrier screening recommendations

About Down syndrome and other aneuploidies

Down Syndrome	Down Syndrome Australia www.downsyndrome.org.au	Health professional and consumer information: Comprehensive site with multiple resources and contacts
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Topic	Organisation web address	Content summary
Edward syndrome (Trisomy 18)	Centre for Genetics Education www.genetics.edu.au/Publications-and-Resources/Genetics-Fact-Sheets/FactSheet30	Health professional information: Edward syndrome

Ultrasound

	The Women’s thewomens.r.worldssl.net/images/uploads/fact-sheets/Ultrasound.pdf	Consumer information: Ultrasound use in pregnancy
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pregnancy_tests_ultrasound	Consumer information: Ultrasound in pregnancy
	Center Australian Medical Advisory Board www.babycenter.com.au/a557439/ultrasound-variants-in-pregnancy	Consumer information: Ultrasound variants in pregnancy

Also see:

- » Resources on abnormal findings in pregnancy in **Section 12**.

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 the shared maternity care coordinator. The shared maternity care coordinator can assist in obtaining results, organising non-urgent follow-up appointments at the hospital and informing the SMCA of hospital care. Depending on the hospital, the shared maternity care coordinator may also be able to assist with organising non-urgent advice or reassessment of community ultrasound or other pathology results by the relevant department.

If more urgent assessment, care or referral is required, contact the Emergency Department, Pregnancy Assessment Service, Genetics Services and the on-call obstetric registrar. All providers should check that follow-up of any incomplete or abnormal investigation findings occurs. Also see [Section 12](#).

This section contains a variety of support and referral pathways offered at the hospitals.

Pregnancy assessment service hours vary between services but are generally within business hours. Outside these times, women should be referred to the Emergency Department.

Pregnancy assessment service

Each hospital has a pregnancy assessment service that provides obstetric, midwifery and investigations, monitoring and management for maternal and fetal assessment for issues including:

- » high blood pressure or concerns about pre-eclampsia
- » small for dates, poor interval growth or fetal growth restriction
- » decreased fetal movements
- » non-cephalic presentation at ≥ 36 weeks
- » prolonged pregnancy (post-dates)
- » hyperemesis
- » concerns about cholestasis.

Referral to the pregnancy assessment Service is recommended if a woman has:

- » hypertension (when systolic BP is 140 mmHg and/or diastolic BP is 90 mmHg)
- » a small fundal height (2 cm more or less than for dates, significant deviation from growth pattern or concerns on ultrasound)
- » intractable vomiting
- » decrease in fetal movements
- » jaundice or symptoms of cholestasis
- » non-cephalic presentation ≥ 36 weeks gestation.

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.

Pregnancy assessment service contact details and operating hours

SMCAs can refer a woman directly to the pregnancy assessment service (except for WMH – see below). SMCA should detail concerns in the VMR for the woman to take with her and should also phone the service prior to her arrival.

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MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: HOSPITAL SUPPORT SERVICES

Mercy Hospital for Women

Phone: 8458 4266

Mon – Fri: 9.00 am – 5.30 pm

Sat: 8.00 am – 4.30 pm (by appointment only on Sat)

The Women's (Parkville)

Phone: 8345 2184

Monday – Friday: 9.00 am – 5.00 pm

Sat: 8.00 am – 12.00 pm

The Women's (Sandringham)

Phone: 9076 1428 or 9076 1245

Monday, Tuesday, Wed and Friday: 9.00 am – 5.30 pm

Thurs: 12pm – 8.30pm

Werribee Mercy Hospital

WMH has limited facilities, with no direct referrals to pregnancy day service.

The SMCA should contact the On-Call Obstetrician to discuss the situation.

Phone: 8754 3448 (directly to On-Call Obstetrician).

Western Health

Phone: 8345 1029

Monday – Friday: 8.00 am – 4.30 pm

Emergency Department

Each hospital Emergency Department is available 24 hours a day for assessment of urgent antenatal or postnatal problems. Phone advice is also available 24 hours a day for SMCAs and GPs. Referral by phone or letter is appreciated. Presentation to the Emergency Department 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 Emergency Department is recommended if the woman has:

- » first trimester bleeding or pain that cannot be appropriately diagnosed and managed in the community
- » threatened preterm labour (≤ 37 weeks)
- » undiagnosed abdominal pain
- » preterm rupture of membranes
- » antepartum haemorrhage
- » unusual migraines/visual disturbances
- » seizures
- » a requirement for anti-D immunoglobulin following a sensitising event
- » requirement for immunoglobulin post varicella or measles exposure if non immune
- » problems usually seen in the Pregnancy Assessment Service if after hours.

The above list is not exhaustive.

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: HOSPITAL SUPPORT SERVICES

Emergency Department contact details

Mercy Hospital for Women

Phone: 8458 4000 or 8458 4005

Fax: 8458 4205

The Women's (Parkville)

Phone: 8345 2058 (GP Quick Access Number – GP use only)

Fax: 8345 3645

The Women's (Sandringham)

Phone: 9076 1470

Werribee Mercy Hospital

Phone: 8754 3327

Western Health

Phone: 8345 1596 (GP use only)

Fax: 8345 1607

Obstetric registrar/On-call obstetrician

At RWH, MHW and WH the on-call obstetric registrar can be contacted 24 hours a day to discuss urgent or complex clinical issues. During business hours, if contactable, it may be worthwhile to contact the registrar of the pregnancy team the woman is under at the hospital.

To contact the registrar, phone the hospital switchboard and ask for the on-call obstetric registrar or registrar of the woman's pregnancy team.

At WMH the on-call obstetrician can be contacted directly 24 hours a day to discuss urgent or complex clinical issues.

On-call registrar/obstetrician contact details

Mercy Hospital for Women

Phone: 8458 4444 (Page via hospital switchboard)

The Women's (Parkville)

Phone: 8345 2000 (Page via hospital switchboard)

The Women's (Sandringham)

Phone: 9076 1000 (Page via hospital switchboard)

Werribee Mercy Hospital

Phone: 8754 3448 (Direct line to on-call obstetrician)

Western Health

Phone: 8345 1333 (Page via hospital switchboard)

Shared maternity care coordinator

The hospital shared maternity care coordinator is the key person for non-urgent contact for SMCAs and women. The shared maternity care coordinator responds to issues that may arise and ensures that non-urgent queries from SMCAs are dealt with in a timely manner. The shared maternity care coordinator's qualifications and role vary between health services.

At all sites, the shared maternity care coordinator is the point of contact for:

- » updating a woman's contact details
- » organising routine hospital appointments
- » organising extra appointments for additional non-urgent clinical consultation with, for example, obstetric doctors/allied health/psychiatry/genetics/physicians
- » organising hospital follow up for gestational diabetes
- » obtaining non-urgent information about hospital care (e.g. discharge summaries, investigation results)
- » changing shared maternity care providers (if requested by the woman)
- » notifying SMCAs of cessation of shared maternity care.

The shared maternity care coordinator 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
- » arranging CVS/amniocentesis for women booked for care at the hospitals.

Shared maternity care coordinator contact details

Mercy Hospital for Women

Phone: 8458 4120

Fax: 8458 4206

Email: sharedcare@mercy.com.au

The Women's (Parkville)

Phone: 8345 2129

Fax: 8345 2130

Email: sharedcare@thewomens.org.au

The Women's (Sandringham)

Phone: 9076 1554

Fax: 9076 1595

Email: sharedcare.sandringham@thewomens.org.au

Werribee Mercy Hospital

Phone: 8754 3393

Fax: 8754 3467

Email: werribeesharedcare@mercy.com

Western Health

Phone: 8345 1727

Fax: 8345 1691

Email: maternitysharedcare@wh.org.au

The hospital shared maternity care coordinator is the key person for non-urgent contact for both SMCAs and women.

Genetics service

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 eligible for such (if pre-pregnancy), but requirements for access vary.

Some reasons genetic counselling may be required or recommended include:

- » if a woman is unsure about whether to undertake diagnostic testing (or if a woman would like to undertake CVS or amniocentesis at WH)
- » 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
- » if a couple with a high risk of having a child with a genetic condition wish to discuss prenatal testing including diagnostic testing
- » if a health care provider requires secondary advice.

To ensure the provision of timely advice, if urgent or semi-urgent referral is required, it is best to contact the genetics services of units directly and not to utilise the general referral fax systems at hospitals.

Hospital genetics service contact details

Mercy Hospital for Women

Phone: 8458 4250

Fax: 8458 4254

The Women's (Parkville and Sandringham)

Phone: 8345 2180

Fax: 8345 2179

Werribee Mercy Hospital

Phone: 8754 3448 (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 the genetics services for WMH)

Western Health (Maternal Fetal Medicine Unit and Genetics)

Phone: 8345 1811

Fax: 8345 0700

Fetal maternal management service

All hospitals have services that manage women with complicated pregnancies due to high-risk conditions (e.g. heart disease in the woman) or fetal abnormalities. These are called by various names.

If a fetal abnormality is detected on ultrasound, these services can be contacted for referral or advice. This can be done directly or through the shared maternity care coordinator. If urgent or semi-urgent referral is required, it is best to contact the units 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.

Fetal maternal management service contact details

Mercy Hospital for Women – Perinatal Medicine Unit

Phone: 8458 4248

Fax: 8458 4504

The Women's – Fetal Medicine Unit (Parkville and Sandringham)

Phone: 8345 2158

Fax: 8345 2139

Western Health – Maternal Fetal Medicine Unit

Phone: 8345 1811

Fax: 8345 0700

Werribee Mercy Hospital

Phone: 8754 3448 (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 fetal maternal management services for WMH).

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

All providers of shared maternity care have a responsibility to appropriately assess, document and respond to problems that arise during a woman's pregnancy (including any investigations ordered, investigation results, abnormal investigation or clinical findings and action taken). All providers should check that follow up of any incomplete or abnormal investigation or clinical findings occur.

Also see **Section 11** – for further information on hospital support and referral pathways.

This section contains a variety of common scenarios requiring support by and referral to the hospitals.

It is the primary responsibility of the provider ordering the test or noting an abnormal finding to ensure appropriate follow up, communication and management.

High-risk aneuploidy screening result

Follow up of a high-risk aneuploidy screening test result may include a number of options, depending on the woman's preference, the SMCA's level of confidence and the hospitals she is booked into. Options include:

- » Referral of the woman to genetics services for further advice and testing (contact the relevant Genetics Services directly). Also see **Section 11**.
- » Referral for a non-invasive prenatal test (e.g. via Victorian Clinical Genetics Service, private pathology services or several specialist obstetric ultrasound services). A cost is involved. Also see **Section 10**.
- » A diagnostic test – CVS or amniocentesis, also see **Section 10**
 - » at RWH and MHW, the SMCA can arrange a diagnostic test directly via the shared maternity care coordinator, also see **Section 10**
 - » at WH, refer directly to Western Health Maternal Fetal Medicine Unit (MFMU)/Genetics
 - » At WMH, contact the On-Call Obstetrician, who will discuss the referral with the SMCA and then refer to Western Health (which provides genetics/fetal maternal management services for WMH).

High-risk neural tube defect result

Follow-up of a high-risk result for neural tube defects requires a referral to a tertiary centre ultrasound service for diagnosis as soon as possible.

At RWH and MHW, the SMCA can arrange a tertiary ultrasound directly via the shared maternity care coordinator. For WH and WMH, follow-up occurs via Western Health MFMU/Genetics.

Contact genetics services or the fetal maternal management service for advice. Also see **Section 11** and 'Abnormality on ultrasound' below.

Abnormality on ultrasound

For non-urgent situations, the shared maternity care coordinator 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.

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

The shared maternity care coordinator 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 indicators 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 the hospitals, who will also direct any further investigations and follow-up as required. This can be organised via the shared maternity care coordinator (please provide the details and reports as soon as possible to the SMCA).

In the community there are also specialist private obstetric ultrasound services where specialist obstetrician gynaecologist sonologists can perform this.

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.

Marker on ultrasound	Significance if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result	Action if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result
Absent nasal bone	Even when isolated, absent nasal bone and to a lesser degree a hypoplastic nasal bone are major markers for Down syndrome and other aneuploidy	Refer to hospital

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

Marker on ultrasound	Significance if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result	Action if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result
Echogenic bowel	Even when isolated, a major marker of Down syndrome and other problems (e.g. cystic fibrosis, CMV infection)	Refer to hospital
Significantly increased nuchal translucency at 11–13 weeks ≥3.5 mm (>99th percentile) 2.5mm–3.5mm (>95th percentile)	Even when isolated, greatly increased risk of Down syndrome, other aneuploidies and other abnormalities (e.g. heart disease)	Refer to hospital
Choroid plexus cysts	Present in 3% of all fetuses at 16–24 weeks	Reassure If isolated, no significant increase in risk of aneuploidy. (If not isolated or increased risk of aneuploidy – refer to hospital)
Echogenic heart focus/ intracardiac focus	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.	Reassure No increased chromosomal problems (If not isolated, increased risk of aneuploidy – refer to hospital)

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

Marker on ultrasound	Significance if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result	Action if isolated on specialist obstetric ultrasound and low-risk aneuploidy screening result
Pyelectasis	Enlargement collecting system Present in 1% of pregnancies with Boys > girls. >50% get in next pregnancy	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 develops significant renal disease If mild renal pelvis dilatation (4–7mm), then repeat ultrasound at 32 weeks. If still present at 32 weeks, postnatal follow-up will be required. If moderate to severe renal pelvis dilatation (>7mm), then refer to hospital Fetal Maternal Management Service and consider earlier repeat ultrasound at 26–28 weeks) Be vigilant next pregnancy
Single umbilical artery	Present in 2% of pregnancies	If isolated, no significant increase in risk of aneuploidy. (If not isolated or increased risk of aneuploidy – refer to hospital) Even if isolated association with renal problems and may be at increased risk of growth restriction Ensure kidneys checked on ultrasound and are normal Greater surveillance required for fetal growth Growth and wellbeing US in third trimester (generally at 28 and 34 weeks)
Aberrant subclavian artery	There is thought to be an increased risk of Down syndrome, other aneuploidy and cardiac anomalies. There is currently insufficient data to quantify these risks	Refer to hospital

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 shared maternity care coordinator 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

All hospitals have Fetal Maternal Management Services that manage women with complicated pregnancies due to high-risk conditions (e.g. heart disease in the woman) or fetal abnormalities. These are called by various names. Also see [Section 11](#))

If a fetal abnormality is detected on ultrasound, these services can be contacted for referral or advice. This can be done directly or through the shared maternity care coordinator. If urgent or semi-urgent referral is required, it is best to contact the units 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.

RWH and WH provide termination services, but these services are not available at MHW or WMH. MHW provides the 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.

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

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. Fetal movements are usually not altered by intravenous glucose administration, sugary/cold drinks/food or by a recent meal. 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 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 the hospital's Pregnancy Day Service or the SMCA can organise a timely ultrasound at a specialist community service.

Maternal concern overrides any definition of decreased fetal movement based on the number of movements felt.

In the case of a woman reporting decreased or absent fetal movements, organise same-day referral to the hospital for review and a CTG. It is insufficient to perform only a Doppler fetal monitor.

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

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

- » a baby is not biophysically well
- » a baby is ≤ 15 th percentile
- » a baby whose growth pattern is not normal
- » any other concerns.

Depending on the urgency referral to hospital may occur through the shared maternity care coordinator, registrar, Pregnancy Day Service or emergency service.

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 shared maternity care coordinator to organise an outpatient review.

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

Sub-clinical hypothyroidism

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

As β -hCG and TSH have some similar elements, β -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.

Generally, if fundal height is more than 2 cm smaller than expected by dates or there is significant deviation or concern about growth pattern, timely referral or specialist ultrasound is required.

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" nor preconception ($> 30/15$ 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 90mmHg. 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.'¹⁸

Gestational hypertension is a temporary diagnosis for hypertensive pregnant women who do not meet criteria for pre-eclampsia, with the diagnosis changed to pre-eclampsia 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 pregnancy day service for BP monitoring and investigations as appropriate (or to the Emergency Department if the pregnancy day Service is closed). At WMH, call the labour ward consultant to discuss where to send the patient.

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.

If a woman's BP is ≥ 140 mmHg and/or diastolic blood pressure ≥ 90 mmHg, she needs to be reviewed that day at the hospital for BP monitoring and investigations as appropriate.

Referral at lower BPs should occur if there are other symptoms of pre-eclampsia.

It is not appropriate for a SMCA to commence antihypertensive medicine.

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 hospital Emergency Department 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 pregnancy day service or Emergency Department as soon as possible.

18. Lowe SA et al. The SOMAZ guideline for the management of hypertensive disorders of pregnancy 2014, Society of Obstetric Medicine of Australia and New Zealand: somanz.org/documents/HTPregnancyGuidelineJuly2014.pdf

Resources on abnormal findings in pregnancy

Topic	Organisation web address	Content summary
Neural tube defects	Centre for Genetics Education www.genetics.edu.au/Publications-and-Resources/Genetics-Fact-Sheets/Fact%20Sheet%2059	Health professional information: Neural tube defects
	Better Health Channel www.betterhealth.vic.gov.au/BHCV2/bhcArticles.nsf/pages/Birth_defects_central_nervous_system?OpenDocument	Consumer information: CNS birth defects including spina bifida
Termination of pregnancy	Victoria Government www.legislation.vic.gov.au/domino/Web_Notes/LDMS/LTObject_Store/LTObjSt1.nsf/DDE300B846EED9C7CA257616000A3571/69D6C3A5305F935BCA2577610017C10D/\$FILE/08-58a003.pdf	<i>Abortion Law Reform Act 2008</i> , incorporating amendments as of 1 July 2010
	The Women's www.thewomens.org.au/patients-visitors/clinics-and-services/pregnancy-birth/miscarriage-stillbirth-baby-death/	Consumer information: With links to support services for women who need to terminate pregnancy due to genetic or fetal abnormality
Decreased fetal movements	The Australian and New Zealand Stillbirth Alliance www.ranzcog.edu.au/doc/dfm.html	Clinical guideline: <i>Management of Women who report Decreased Fetal Movements</i> (2010). Endorsed by RANZCOG
	RACGP www.racgp.org.au/afp/2014/november/decreased-fetal-movements-a-practical-approach-in-a-primary-care-setting/	Health professional information: Article <i>Decreased fetal movements: a practical approach in a primary care setting</i> (2014)
	Baby Center www.babycenter.com.au/a549375/your-babys-movements-in-pregnancy	Consumer information: Fetal movements during pregnancy and when to contact a health professional for help

MANAGEMENT AND REFERRAL OF ABNORMAL FINDINGS: FOLLOW-UP OF FINDINGS

Small for gestational age	Department of Health and Human Services, Victoria http://www.health.vic.gov.au/neonatalhandbook/conditions/small-for-gestational-age-infants.htm	Health professional information: Neonatal eHandbook Information on small for gestational age infants
	Queensland Government https://www.health.qld.gov.au/qcg/documents/g_sga5-0.pdf	Health professional information: Small for gestational age infants clinical guideline
	Baby Center www.babycenter.com/0_intrauterine-growth-restriction-iugr_1427406.bc	Consumer information: Multiple resources related to babies who are small for dates
Large for gestational age	Merck Manual www.merckmanuals.com/professional/pediatrics/perinatal-problems/large-for-gestational-age-lga-infant	Health professional information: Large for gestational age fetus
Hypertension	Society of Obstetric Medicine of Australia and New Zealand (SOMAZ) www.ranzcog.edu.au/doc/somanz-hypertensive-disorders.html	Health professional information: Guideline for the management of hypertensive disorders of pregnancy (2014)
	The Women's www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-problems/pregnancy-problems-in-later-pregnancy/pre-eclampsia/ thewomens.r.worldssl.net/images/uploads/fact-sheets/Pre-eclampsia.pdf	Consumer information: High blood pressure and eclampsia during pregnancy with a link to Australian Action on preeclampsia Pre-eclampsia
Jaundice and pruritus	Mayo Clinic www.mayoclinic.org/diseases-conditions/cholestasis-of-pregnancy/basics/definition/con-20032985	Consumer information: US information about cholestasis in pregnancy

Also See:

- » Antenatal visits, investigations and findings – **Section 6**
- » Testing for Down syndrome and other fetal abnormalities – **Section 10**

MENTAL HEALTH AND WELLBEING IN PREGNANCY

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/

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.

RWH, MHW and WMH have mental health services that can assess and manage women with mental health issues who are receiving pregnancy care at these hospitals. The capacity at each service varies. WH does not have specialised mental health services associated with maternity services.

To access these services in a non-urgent situation, GPs and SMCA's can:

- » include details and a request in the referral letter for maternity care
- » contact the shared maternity care coordinator 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

Mercy Hospital for Women

Phone: 8458 4444 (switchboard – ask for the psychiatry registrar)

Phone: 8458 4843 (Perinatal Mental Health)

The Women's (Parkville and Sandringham)

Phone: 8345 2071 (Psychiatric consultation liaison nurse)

Werribee Mercy Hospital

Phone: 1300 657 259

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/

They provide a range of services, including urgent community-based assessment and short-term treatment interventions 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.

Adult specialist mental health services contact details (including CAT Teams)

**Northern (Whittlesea, Darebin), North West (Hume, Moreland),
Mid West (Melton, Brimbank), Inner West (Moonee Valley, Melbourne)**

Phone: 1300 874 243

Inner Urban East (Yarra, Boroondara)

Phone: 1300 558 862

South West (Wyndham, Hobson's Bay, Maribyrnong)

Phone: 1300 657 259

North East (Nillumbik, Banyule)

Phone: 1300 859 789

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 are at hospitals such as Melbourne Health, Austin Health, St Vincent's Health and Werribee Mercy Hospital. There are inpatient beds at NH that are managed by Melbourne Health. Similarly, inpatient beds at WH are managed by Mid-West Mental Health Service.

In the postnatal period, both public and private mother and baby services and early parenting centres provide clinical and support services for parents experiencing difficulties (including mental health problems). Where there are concerns about the wellbeing of a child or family, Child FIRST is the referral point for family services in Victoria. Also see:

www.dhs.vic.gov.au/for-individuals/children,-families-and-young-people/family-and-parenting-support/family-services/child-first-child-and-family-information,-referral-and-support-teams

Also see **Section 14**.

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 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

Alcohol and drug use

Each hospital has services 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 GPs and SMCAs.

Alcohol and drug service contact details

Mercy Hospital for Women

Phone: 8458 4100 (Transitions Clinic – GPs 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 demonstrate the seriousness and prevalence of intimate partner violence.¹⁹

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.

19. VicHealth. The Health Costs of Violence: Measuring the Burden of Disease Caused by Intimate Partner Violence. Carlton South, Vic: Victorian Health Promotion Foundation, 2004 (reprinted 2010). Accessed 15 June 2015 <www.vichealth.vic.gov.au/Publications/Freedom-from-violence/The-Health-Costs-of-Violence.aspx>.

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:

Police

Phone: 000

Safe Steps – Family Violence Response Centre – Available 24/7

(previously called Women’s Domestic Violence Crisis Service)

Website: 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.

inTouch Multicultural Centre Against Family Violence

Website: 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

Topic	Organisation web address	Content summary
Mental health and wellbeing	Beyond Blue www.beyondblue.org.au/resources/health-professionals/clinical-practice-guidelines/perinatal-clinical-practice-guidelines www.beyondblue.org.au/the-facts/pregnancy-and-early-parenthood	Comprehensive guide with multiple resources related to perinatal mental health Consumer information: Multiple resources on mental health during pregnancy and early parenthood including where to get help for parents
	Post and Antenatal Depression Association (PANDA) www.panda.org.au/index.php?option=com_content&view=article&id=11&Itemid=31	Comprehensive guide with multiple resources related to perinatal depression and anxiety for parents
	Department of Health and Human Services, Victoria www.health.vic.gov.au/mentalhealth/services/adult/index.htm	Website for adult specialist mental health services (16–64 years) with links to metropolitan and rural support services
	The Women’s www.thewomens.org.au/health-information/pregnancy-and-birth/mental-health-pregnancy/	Consumer information: Multiple fact sheets relating to mental health and pregnancy including baby blues, depression, bi-polar, anxiety, schizophrenia, eating disorders and post-partum psychosis
	Mental Health Association of NSW www.mentalhealth.asn.au	Consumer information: Multiple resources on mental health during pregnancy and early parenthood
	Smiling Mind and Beyond Blue – Mind the Bump www.mindthebump.org.au/?gclid=CI7RufjTx8YCFRADvAodAiiNfg	Free meditation app to help support mental and emotional wellbeing in the journey to parenthood for both individuals and couples

Topic	Organisation web address	Content summary
Medicines	The Women’s Pregnancy and breastfeeding medicines guide thewomenspbmg.org.au/	Health professional information: Comprehensive web based pregnancy and breastfeeding medicines guide developed by the Women’s and available on annual subscription
	Therapeutic Goods Administration www.tga.gov.au/hp/medicines-pregnancy.htm#.VDczumeSzHU	Health professional information: Comprehensive guide with multiple resources including Australian categorisation of risk of drug use in pregnancy and links to the Obstetric Drug Administration Service
	Mercy Health www.mercyhealth.com.au/Documents/psychotropic%20drugs.pdf	Health professional information: <i>Psychotropic Medication in Pregnancy /Lactation</i> (2008)
	The Women’s thewomens.r.worldssl.net/images/uploads/fact-sheets/Medicines-in-pregnancy.pdf thewomens.r.worldssl.net/images/uploads/fact-sheets/Medicines-in-breastfeeding.pdf	Consumer information: Medicine use during pregnancy Medicine use while breastfeeding
Alcohol and drug use	The Women’s www.thewomens.org.au/health-information/pregnancy-and-birth/pregnancy-drugs-alcohol/	Consumer information: Alcohol, cigarette smoking and drug use during pregnancy
Intimate partner violence	Safe steps – Family Violence Response Centre www.safesteps.org.au/	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
	inTouch intouch.asn.au/	Provides phone support to women from culturally and linguistically diverse backgrounds in their primary language. Phone: 1800 755 988 or 9413 6500

Topic	Organisation web address	Content summary
Intimate partner violence	Domestic Violence Resource Centre, Victoria www.dvrcv.org.au/	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
	VicHealth www.vichealth.vic.gov.au/our-work/preventing-violence-against-women	Link to research and resources related to violence and preventing against women
	Domestic Violence Victoria www.dvvic.org.au/	Peak body for family violence services in Victoria. Information on causes, statistics and impacts of family violence with a number of links.
	The Women's www.thewomens.org.au/health-information/violence-against-women/violent-relationships/	Consumer information: Contains multiple multilingual resources relating to family violence and what to do

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*²⁰ (child health record) in hospital. This document is used by parents, maternal child health nurses and GPs 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 – Guthrie test

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 done at the hospital and 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 newborn screening test 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 carried out before the baby leaves hospital and again in the community as soon after 48 hours as possible (by the domiciliary midwife). 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.

20. For further information, see the 'My Health and Development Record' page on the Department of Education and Training website (www.education.vic.gov.au/childhood/parents/mch/pages/record.aspx).

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 RWH (Parkville and Sandringham), MHW, WH, NH and WMH 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 audiology 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
- » 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

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.²¹ 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.²²

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. The hospitals strongly encourage breastfeeding with support and education at each hospital 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 at hospital outpatient clinics 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 within the first 3 months postpartum
- » 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

Mercy Hospital for Women Breastfeeding Support Centre

Phone: 8458 4677 or 8458 4676

The Women's Breastfeeding Service (Parkville and Sandringham)

Phone: 8345 2496 (lactation consultant) or 8345 2400 (to make an appointment at Parkville)

Phone: 9076 1570 (Sandringham)

Werribee Mercy Health

Phone: 8754 3407 or 8754 3428 (lactation consultant)

Western Health Breastfeeding Centre

Phone: 8345 1049 and leave a message or 8345 1767 (maternity ward – if the matter is urgent)

21. World Health Organization. Breastfeeding, n.d. Accessed 16 June 2015 <www.who.int/topics/breastfeeding/en>.

22. Australian Institute of Health and Welfare.

A Picture of Australia's Children 2012, Cat. no. PHE 167, Canberra: AIHW. Accessed 16 June 2015 <www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737423340>.

Postnatal care in the community

In addition to providing immediate postnatal care, the hospitals offer at least one domiciliary midwife visit for all women within the first few weeks after discharge. The hospital also notifies the local Maternal Child Health Service at the time of discharge, with the local Maternal and Child Health Service then undertaking a home visit. Additional services are available through the Maternal and Child Health Service 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.²³ 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. The hospitals encourage all women and their babies to visit their GPs 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 reliving 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).

Source: Adapted from Brown S, Davey M, Bruinsma F. Women's views and experiences of postnatal hospital care in the Victorian Survey of Recent Mothers 2000. *Midwifery*; 21, 109–26, 2005.

23. Goldfeld SR, Wright M, Oberklaid F. Parents, infants and health care: utilization of health services in the first 12 months of life. *J Paediatr Child Health* 2003; 39(4):249–53.

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.

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

- » physical assessment of mother and baby, including feeding and settling
- » developmental assessment of the baby
- » emotional wellbeing of mother and baby
- » opportunity for parents to express concerns
- » relationship and social supports
- » health promotion.

GP guide for postnatal check-up of the mother

The aim of the GP visit is to: assess physical and emotional wellbeing, parenting and relationship issues; follow-up on any issues from pregnancy, birth and the postpartum period; undertake preventative health and health promotion; support breastfeeding and positive parental – child interactions; and, address any additional concerns.

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, arranging a GTT for 6 weeks after birth – this is not done by the hospital and needs to be arranged by a woman's GP. Please discuss and establish ongoing screening and recall systems (generally 2 yearly GTT if normal and yearly if impaired result)
- » 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:

- » physical, social, emotional wellbeing
- » relationships, parenting and supports
- » breastfeeding/infant feeding
- » postnatal depression/adjustment
- » sex, dyspareunia, libido
- » contraception
- » exercise, including pelvic floor
- » 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 and following
- » 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)
- » 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, GPs should arrange a GTT at around 6 weeks after the birth. The hospitals do not routinely arrange a follow-up GTT; this should be arranged by a woman's GP.

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 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, GPs 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 from 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, help with breastfeeding, parenting and social connections, and drop-in centres. Many also have culturally sensitive groups and activity groups. Many services also have a range of multidisciplinary services such as social work,

The hospital, women and GPs 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:

www.education.vic.gov.au/findaservice/Home.aspx

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.

GPs 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

Child FIRST

- Phone: 1300762 125 (Boroondara, Manningham, Monash, Whitehorse)
- Phone: 9450 0955 (Banyule, Darebin, Nillumbik, Whittlesea, Yarra)
- Phone: 1300 138 180 (Brimbank, Melton)
- Phone: 1300 786 433 (Hume, Moreland)
- Phone: 1300 775 160 (Hobson's Bay, Maribyrnong, Melbourne, Moonee Valley, Wyndham)
- Phone: 1300 367 441 (Bayside, Glen Eira, Kingston, Port Phillip, Stonnington)

Website: www.dhs.vic.gov.au/for-individuals/children,-families-and-young-people/family-and-parenting-support/family-services/child-first-child-and-family-information,-referral-and-support-teams for full list of referral numbers.

Mandatory reporting requirements for health professionals

The *Children and Young Persons Act 1989* (Vic.) (s. 64 (1C)) states that certain professionals (including GPs, obstetricians and midwives) must report to Child Protection Services, when, in the course of their professional duty:

- » they 'form the belief on reasonable grounds that a child is in need of protection [because] the child has suffered, or is likely to suffer significant harm as a result of physical injury and the child's parents have not protected or are unlikely to protect, the child from harm of that type'
- » 'the child has suffered, or is likely to suffer, significant harm as a result of sexual abuse and the child's parents have not or are unlikely to protect, the child from harm of that type'.

Child Protection Services contact details

Child Protection Services (to make a notification of child abuse, contact the regional Child Protection Service)

Phone: 1300 664 977 (northern and western suburbs)

Phone: 1300 360 391 (eastern suburbs)

Phone: 1300 655 795 (southern suburbs)

Child Protection Crisis Line

Phone: 13 12 78 (after hours service)

Mother and baby inpatient mental health services

The three public inpatient mother and baby services in Victoria 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. SMCAs can refer a woman through the local Adult Mental Health Service, where an intake worker will assess the woman and arrange admission.

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, SMCAs should contact the facilities directly. All services provide both day and inpatient programs.

Also see [Section 13](#).

Public mother and baby inpatient unit contact details

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

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/

Resources on postnatal care

Topic	Organisation web address	Content summary
Services		
Child FIRST – Child and family protection services	Department of Health and Human Services, Victoria www.dhs.vic.gov.au/for-individuals/children,-families-and-young-people/family-and-parenting-support/family-services/child-first-child-and-family-information,-referral-and-support-teams	Comprehensive guide with multiple resources related to child and family protection services across Victoria including mandatory reporting requirements for child abuse
Maternal and child health services	Maternal and Child Health Services – Department of Health and Human Services, Victoria www.education.vic.gov.au/childhood/professionals/health/pages/maternalchildhealth.aspx	Comprehensive guide with multiple resources for consumers and Maternal and Child Health Service professionals, other health professionals to support them in maintaining high service standards for Victorian families
Child Health Record	Department of Education and Training, Victoria www.education.vic.gov.au/childhood/parents/mch/pages/record.aspx	Comprehensive guide with multiple resources related to <i>My Health and Development Record</i> (the green book given to parents for each child born)
Newborn tests		
Newborn blood screening	Victorian Clinical Genetics Services www.vcgs.org.au/pathology/sections/NewbornScreening/?docid=aa3a4d81-d44b-42ff-8340-99360112c7a7	Health professionals information: Newborn blood screening
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Newborn_screening?open	Consumer information: Newborn blood screening
Newborn hearing screening	The Royal Children’s Hospital www.rch.org.au/vihsp/about_vihsp/About_the_Victorian_Infant_Hearing_Screening_Program_VIHSP	Comprehensive site: Victorian Infant Hearing Screening Program (VIHSP) with links to public, private, metropolitan and rural maternal screening services

Topic	Organisation web address	Content summary
Newborn hip screening and hip Dysplasia	Department of Health and Human Services, Victoria www.health.vic.gov.au/neonatalhandbook/congenital/developmental-dysplasia.htm	Health professional information: The Neonatal eHandbook. Developmental dysplasia of the hip in neonates
	International Hip Dysplasia Institute hipdysplasia.org/for-physicians/pediatricians-and-primary-care-providers/newborn-screening-and-prevention/	Health professional information: The use of US screening for hip dysplasia in infants
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Developmental_dysplasia_of_the_hip_(DDH)	Consumer Information: Developmental hip dysplasia

Newborn Health and Care

Clinical guidelines	Department of Health and Human Services, Victoria www.health.vic.gov.au/neonatalhandbook/index.htm	Clinical guidelines: <i>The Neonatal eHandbook</i> Provides a structured approach to the clinical management of conditions regularly encountered by health professionals caring for newborns. There are guidelines for over 90 newborn conditions that may present during the early newborn period
Immunisation	Department of Health, Australia www.health.gov.au/internet/immunise/publishing.nsf/content/Handbook10-home	Comprehensive guide with multiple resources including the electronic version of <i>The Australian Immunisation Handbook 10th Edn</i>
Hepatitis B	RANZCOG webcache.googleusercontent.com/search?q=cache:nCb9MPHyTsJ:https://www.ranzcog.edu.au/doc/management-of-hepatitis-b-in-pregnancy.html+&cd=7&hl=en&ct=clnk&gl=au	Health professional information: Hepatitis B in pregnancy. Also covers immunisation and testing of the baby

Topic	Organisation web address	Content summary
Jaundice	The Royal Children’s Hospital www.rch.org.au/clinicalguide/guideline_index/Jaundice_in_Early_Infancy/	Health professional information: Clinical Practice Guidelines on Jaundice in Early Infancy
	Better Health Channel www.betterhealth.vic.gov.au/Bhcv2/bhcarticles.nsf/pages/Jaundice_in_babies?open	Consumer information: Jaundice in babies
Birthmarks	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Birthmarks	Consumer information: Birthmarks
Infant feeding and breast care		
Breastfeeding	Australian Breastfeeding Association www.breastfeeding.asn.au/bfinfo/index.html	Comprehensive information: Multiple resources on breastfeeding including the contact details for the Helpline
	Medicines Information Service (MIS) Phone: 8345 3190* *9am to 5pm (excluding public holidays) Email: drug.information@thewomens.org.au	Health professional and consumer information: The MIS provides evidence-based medicines information via telephone and email.
	The Women’s Pregnancy and Breastfeeding Medicines Guide (PBMG) www.thewomens.org.au/pbmg	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.

Topic	Organisation web address	Content summary
	<p>The Women's thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/breast-and-nipple-thrush.pdf</p> <p>thewomens.r.worldssl.net/images/uploads/downloadable-records/clinical-guidelines/breastfeeding-the-healthy-term-baby.pdf</p> <p>www.thewomens.org.au/health-information/breastfeeding/breastfeeding-overview/</p> <p>www.thewomens.org.au/health-information/breastfeeding/</p> <p>www.thewomens.org.au/health-information/breastfeeding/</p> <p>www.thewomens.org.au/health-information/breastfeeding/breastfeeding-problems/</p>	<p>Health professional information: Breast and nipple thrush guideline</p> <p>Breastfeeding the healthy term baby guideline</p> <p>Consumer information: An overview of breastfeeding</p> <p>General breastfeeding information</p> <p>Medicines, drugs and breastfeeding</p> <p>Common breastfeeding problems</p>
	<p>Department of Health, Australia www.health.gov.au/breastfeeding</p>	<p>Comprehensive guide with multiple resources related to National Breastfeeding Guidelines and strategies</p>
Bottle feeding	<p>Raising Children Network raisingchildren.net.au/articles/how_to_bottle-feed.html/context/203</p>	<p>Consumer information: Multiple resources related to bottle feeding babies</p>
Safe sleeping, sudden infant death syndrome		
Safe sleeping, sudden infant death syndrome	<p>SIDS and Kids www.sidsandkids.org/</p>	<p>Comprehensive guide with multiple resources including information on safe sleeping techniques and bereavement support for SIDS</p>
	<p>Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/sudden_unexpected_death_in_infants_(SUDI_and_SIDS)?open</p>	<p>Consumer information: Sudden unexpected death in infants (SUDI and SIDS)</p>

Topic	Organisation web address	Content summary
Maternal care		
General physiotherapy	The Women's thewomens.r.worldssl.net/images/uploads/fact-sheets/Improving-your-recovery-after-birth2.pdf	Consumer information: Physiotherapy advice on improving your recovery after birth
Pelvic floor	The Women's www.youtube.com/watch?feature=player_embedded&v=yb_c9rGv_0o	Consumer video: How to tone your pelvic floor
	Better Health Channel www.betterhealth.vic.gov.au/bhcv2/bhcarticles.nsf/pages/Pelvic_floor?open	Consumer information: Pelvic floor muscles care and exercises
Spinal and epidural	The Women's thewomens.r.worldssl.net/images/uploads/fact-sheets/Epidural-Spinal-advice-for-going-home2.pdf	Consumer information: Care after a spinal or epidural
Contraception	Family Planning Victoria www.fpv.org.au/	Consumer and health professional information: Information on a range of contraception
Parenting		
	Raising Children Network raisingchildren.net.au/	Consumer information: Comprehensive, practical, expert child health and parenting information and activities covering children aged 0-15 years
	The Royal Children's Hospital www.rch.org.au/kidsinfo/fact_sheets/Parent_information_about_newborn_babies_interacting/	Consumer information: Parents interacting with their newborn

Topic	Organisation web address	Content summary
Safety		
General	The Royal Children’s Hospital www.rch.org.au/safetycentre/	Health professional and consumer information: RCH Safety Centre. Comprehensive site with multiple resources on safety – including furniture, dogs, home, water, road. Includes Home Safety Checklist
Child safety – car restraints	VicRoads www.vicroads.vic.gov.au/safety-and-road-rules/vehicle-safety/child-restraints/children-from-birth-to-4-years	Consumer information: Mandatory requirements for appropriate child safety restraints for vehicles, including contact details
Nursery and baby furniture	The Royal Children’s Hospital www.rch.org.au/kidsinfo/fact_sheets/Nursery_and_Baby_Furniture_Safety/	Consumer information: Nursery and baby furniture safety including associated links and contact details
Growing safely	The Royal Children’s Hospital www.rch.org.au/uploadedFiles/Main/Content/safetycentre/fact_sheets/Growing%20Safely%20DL%20brochure_WEB%20secure.pdf	Age specific advice for parents and carers of children from birth to 5 years
Mental health and wellbeing and intimate partner violence – See section 13		



WOMEN'S VOICES

“Shared Care is the best kept secret”

“Thanks! Shared care with my Dr and the hospital was GREAT”

“ ...I could see a doctor I knew, liked and trusted”

“Helped set up a great relationship for my whole family with our local GP”

*“Shared care was excellent, I only waited once for one hour,
at the hospital to see a doctor”*

*“It’s been great bringing my baby back to the doctor
who looked after me when I was pregnant”*

*“My doctor was there throughout the whole thing
which will be my baby’s doctor”*

“We speak the same language”

*“If my GP wasn’t able to assist, she sourced the necessary person
at the hospital to guide and assist me”*

*“Was great for my GP (and I felt comfortable) to see my progress and
if I needed medical attention she was just a phone call away”*

*“Had a long term relationship with GP...she has helped me with
so many things, including when I had trouble getting pregnant...
will be my baby’s doctor”*

“...convenient for my lifestyle”

“I have 3 children so not having to go to the hospital all the time was great”

*“So much more convenient, not having to park
and wait at the hospital every visit”*

“Shared care was a brilliant process and I would recommend it”