

South Australian Perinatal Practice Guidelines

Antenatal Care

Routine Care in Normal Pregnancy

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Note:

This guideline provides advice of a general nature. This statewide guideline has been prepared to promote and facilitate standardisation and consistency of practice, using a multidisciplinary approach. The guideline is based on a review of published evidence and expert opinion.

Information in this statewide guideline is current at the time of publication.

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Health practitioners in the South Australian public health sector are expected to review specific details of each patient and professionally assess the applicability of the relevant guideline to that clinical situation.

If for good clinical reasons, a decision is made to depart from the guideline, the responsible clinician must document in the patient's medical record, the decision made, by whom, and detailed reasons for the departure from the guideline.

This statewide guideline does not address all the elements of clinical practice and assumes that the individual clinicians are responsible for discussing care with consumers in an environment that is culturally appropriate and which enables respectful confidential discussion. This includes:

- The use of interpreter services where necessary,
- Advising consumers of their choice and ensuring informed consent is obtained,
- Providing care within scope of practice, meeting all legislative requirements and maintaining standards of professional conduct, and
- Documenting all care in accordance with mandatory and local requirements

Note: The words woman/women/mother/she/her have been used throughout this guideline as most pregnant and birthing people identify with their birth sex. However, for the purpose of this guideline, these terms include people who do not identify as women or mothers, including those with a non-binary identity. All clinicians should ask the pregnant person what their preferred term is and ensure this is communicated to the healthcare team.

Explanation of the Aboriginal artwork:

The aboriginal artwork used symbolises the connection to country and the circle shape shows the strong relationships amongst families and the aboriginal culture. The horseshoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horseshoe shape depicts a pregnant woman. The smaller horseshoe shape in this instance represents the unborn child. The artwork shown before the specific statements within the document symbolises a footprint and demonstrates the need to move forward together in unison.



Australian Aboriginal Culture is the oldest living culture in the world yet Aboriginal people continue to experience the poorest health outcomes when compared to non-Aboriginal Australians. In South Australia, Aboriginal women are 2-5 times more likely to die in childbirth and their babies are 2-3 times more likely to be of low birth weight. The accumulative effects of stress, low socio economic status, exposure to violence, historical trauma, culturally unsafe and discriminatory health services and health systems are all major contributors to the disparities in Aboriginal maternal and birthing outcomes. Despite these unacceptable statistics the birth of an Aboriginal baby is a celebration of life and an important cultural event bringing family together in celebration, obligation and responsibility. The diversity between Aboriginal cultures, language and practices differ greatly and so it is imperative that perinatal services prepare to respectfully manage Aboriginal protocol and provide a culturally positive health care experience for Aboriginal people to ensure the best maternal, neonatal and child health outcomes.

Purpose and Scope of PPG

This purpose of this practice guideline is to outline routine antenatal care requirements for all women. It is to be used as a general guide for practice in association with other specific Perinatal Practice Guidelines (PPGs), whilst recognising each woman's individual care requirements.



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Summary of Practice Recommendations

Care should be individualised, woman-centred and promote normal reproductive processes and women's inherent abilities.

The first antenatal visit should be undertaken by 10 weeks of pregnancy.

Antenatal care requirements should be assessed at the first visit and reassessed throughout pregnancy with care planned and documented.

Routine health screening should be offered to all women with an explanation of purpose and implications.

Women that require additional targeted screening, referral or consultation should be identified via history and clinical assessment.

Morphology ultrasound should be offered to all women between 18 and 20 weeks with women at increased risk for fetal anomaly referred for tertiary level ultrasound in the first instance.

Influenza and pertussis vaccine are routinely recommended in pregnancy.

Pregnant women should be offered Pfizer mRNA vaccine at any stage of pregnancy.

Health promotion, including antenatal education, nutrition, supplements, medicines, substance use and exercise should commence at the first visit, continue through pregnancy, and be supported with written information wherever possible.

Women should be given information on fetal movements with maternal awareness emphasised at each visit from 20 weeks.

Women should be given information on breastfeeding at the first visit and subsequent visits. Women should be given advice on preventing cytomegalovirus (CMV) at the first visit.

Women should be given information on the benefits of side-sleeping from 28 weeks. Women should be given information on perineal care from 28 weeks.

Consider health literacy from a cultural perspective, including use of interpreters, brochures in other languages (where available) and pictorial-based information (e.g., for use with Aboriginal women).

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Abbreviations

ANRQ	Antenatal Risk Questionnaire
BMI	Body Mass Index
CBP	Complete blood picture
CMV	Cytomegalovirus
CVS	Chorionic villus sampling
EDD/B	Expected Date of Delivery / Birth
EPDS	Edinburgh Postnatal Depression Scale
g	Gram(s)
GBS	Group B Streptococcus
HIV	Human immunodeficiency virus
IM	Intramuscular
LMP	Last Menstrual Period
mg	Milligram(s)
OGTT	Oral glucose tolerance test
PPG	Perinatal practice guideline
RANZCOG	Royal Australian & New Zealand College of Obstetricians and Gynaecologists
SAPR	South Australian Pregnancy Record
WHO	World Health Organisation

Principles of Care

The following *Principles of Perinatal Care*^{1(p30)} developed by the World Health Organization (WHO) should be embedded in all health professionals' approach to perinatal care.

Care for women with a normal pregnancy and birth should promote normal reproductive processes and women's inherent capabilities

Pregnancy and birth should be viewed as a natural process in life and essential care should be provided to women with the minimum set of interventions necessary.

Care should be based on the use of appropriate technology

Sophisticated or complex technology should not be applied when simpler procedures may suffice or be superior.

Care should be evidence-based

Care should be supported by the best available research and by randomised controlled trials where possible and appropriate.

Care should be local

Care should be available as close to the woman's home as possible and based on an efficient system of referral from primary care to tertiary levels of care.

Care should be multidisciplinary

Effective care may involve contributions from a wide range of health professionals, including midwives, general practitioners, obstetricians, neonatologists, nurses, childbirth and parenthood educators.

Care should be holistic

Care should include consideration of the intellectual, emotional, social and cultural needs of women, their babies and families, and not only their physical care.

Care should be woman-centred

The focus of care should be meeting the needs of the woman and her baby. Each woman should negotiate the way that her partner and significant family or friends are involved. Care should be tailored to any special needs the woman may have.

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Care should be culturally appropriate and culturally safe

Care should consider, allow for, and support cultural variations.

Care should provide women with information and support so they can make decisions

Women should be given evidence-based information that enables them to make decisions about care. This should be provided in a format that the woman finds acceptable and can understand.

Care should respect the privacy, dignity and confidentiality of women

All women have the right to be treated with respect and dignity, have their privacy respected, and be assured that all their health information is confidential.

For further expansion of these principles in the Australian context (including pregnancy care for Aboriginal women and other population groups with specific care needs), please refer to the [Australian Government Clinical Practice Guidelines: Pregnancy Care](#).²

Please also refer to the Centre for Remote Health [Minymaku Kutju Tjukurpa Women's Business Manual](#) for information on Aboriginal cultural beliefs, communicating effectively and to guide care for Aboriginal women, particularly in remote communities.³



Women who identify as Aboriginal should be offered the choice to have an Aboriginal Health Professional (Aboriginal health practitioner, Aboriginal midwife, Aboriginal maternal infant care worker or Aboriginal liaison officer) present to ensure cultural safety, appropriateness of care and support. Female caregivers should be offered wherever possible.

Similarly, the WHO identifies the purpose of antenatal care as facilitating a positive pregnancy experience, defined as:

“Maintaining physical and sociocultural normality, maintaining a healthy pregnancy for mother and baby (including preventing or treating risks, illness and death), having an effective transition to positive labour and birth, and achieving positive motherhood (including maternal self-esteem, competence and autonomy).”^{4(p11)}

The Pregnancy SA Infoline

The Pregnancy SA Infoline provides a single point of contact for women booking their first antenatal appointment in public hospitals. The Infoline connects the woman to her closest public maternity service where an appointment can be made. At this first appointment, antenatal staff will discuss suitable birthing options.

Country residents who plan on birthing in the country should contact their local GP or health service to make their first antenatal appointment. Alternatively, country residents who plan on birthing in a metropolitan public hospital should contact their GP or the Pregnancy SA Infoline to book their first antenatal appointment.

Women who require specialist perinatal care may still be required to call the Infoline unless direct referral to specialist services is made by their GP.

Pregnancy SA Infoline:

Monday to Friday, 8.30am to 5.00pm (excluding public holidays)

Phone: 1300 368 820.

Options for Care

Women in South Australia will receive care in both primary and hospital settings and may see a range of health professionals depending on individual needs. Women should be afforded the opportunity to experience continuity of carer (with the same or small group of carers) wherever possible, and/or continuity of care (a shared understanding of care pathways by all professionals involved in care in a collaborative approach), when care needs are more complex.²

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All women should be offered their choice of maternity care from their initial presentation to a health care provider. These options are dependent on local availability of services, the woman's medical and obstetric history or other factors that may affect care. Care options may need to be revised during pregnancy if complications arise. Generally, options include:

- Midwifery Continuity of Carer (e.g., Midwifery Group Practice, Birth Centre Care, Independent Midwife)
- Hospital Antenatal Clinic (e.g., Obstetric Care for women at high or low risk of complications, Midwife Antenatal Clinic)
- Aboriginal Family Birthing Programs
- Obstetric Shared Care with a General Practitioner and Hospital Clinic
- Private Care (Private Obstetrician, General Practitioner, Independent Midwife)
- Maternal Fetal Medicine (may be required but is not offered as a choice).

South Australian Pregnancy Record (SAPR)

SA Health has endorsed the SAPR as the substantive record of a woman's pregnancy. The aim of the SAPR is to assist maintaining continuity of care, women's participation in the care and to promote early and appropriate use of antenatal services, particularly among disadvantaged groups.

The SAPR should be given to the woman at her first antenatal visit, with instruction to carry this with her to each appointment during her pregnancy, including other health professionals or GP appointments separate to the visit schedule or any admission to hospital. The woman should be made aware that the SAPR is the **ONLY** complete medical record maintained for her antenatal care, and it is vital that it is used to record the care given to her at each visit.

The perinatal care provider must record at each visit all relevant antenatal information in the SAPR. Information must be sufficient to meet the care provider's duty of care in diagnostic and treatment decisions. Information need not be duplicated in hospital case notes, but clinicians may do so by choice, particularly if there are pregnancy complexities. Pathology and ultrasound results are to be filled in and included in the SAPR.

The woman should also be aware that the SAPR will become part of the hospital's medical records after the birth of her child. The SAPR will be added to the woman's hospital medical record at admission for birth and will remain the property of the hospital, with a copy being made for the woman upon request.

First Antenatal Visit

The first antenatal visit should be within the first 10 weeks of pregnancy and requires a long appointment.² It should involve the following components:

History

Undertake a comprehensive history:

- current pregnancy (including, any blood or ultrasound results thus far, vaginal bleeding, hyperemesis, multiple pregnancy)
- obstetric (including complications, neonatal outcomes, previous experiences of pregnancy, birth and breastfeeding)
- medical (including allergies, genetic conditions, surgery, medications, pre-existing gynaecological disorders, infectious diseases, immunisations, anaesthetic difficulties, female genital mutilation/cutting, other screening results e.g., cervical smear)
- family (including congenital anomalies or hereditary/genetic disorders on either side of the family, consanguinity, and on the maternal side only, history of pre-eclampsia, deep vein thrombosis, early onset cardiac disease)
- drug dependence or misuse (including tobacco, alcohol, illicit substances, prescribed / non-prescribed medication, opioid dependence including treatment programs)

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- psychosocial (including mental health concerns, social concerns, intellectual disability, current or previous child protection concerns, homelessness, current support networks, cultural requirements)
- sexual health (e.g., partner, previous sexually transmitted infection [STI], risk factors for STI).

Assessment Using Screening Tools

- Complete Edinburgh Postnatal Depression Scale (EPDS) and Antenatal Risk Questionnaire (ANRQ). See *Anxiety and Depression in the Perinatal Period PPG* available at www.sahealth.sa.gov.au/perinatal).
- Complete Smoke-free Pregnancy Assessment and Intervention with referral for smoking cessation interventions (e.g. Quitline 13 78 48) (or complete the online referral form) and encourage women to use tools such as the “Quit for You, Quit for Two” app.
- Undertake screening for domestic violence using a screening tool such as “Ask, Assess and Respond”.

Clinical Assessment

- Current pregnancy (including date of last menstrual period, cycle length, any blood or ultrasound results thus far, vaginal bleeding, hyperemesis, multiple pregnancy) and calculate estimated date of birth (EDB) – refer to [Appendix 1](#) for guidance on calculating EDB.
- Measure height and weight and calculate body mass index (BMI). For women with a BMI ≥ 30 kg/m², refer to *Obese Obstetric Woman – Management in SA 2019 Clinical Directive* available at www.sahealth.sa.gov.au/perinatal).

Note: all women with a BMI ≥ 40 kg/m² require specialist anaesthetic assessment during pregnancy. For women with a BMI ≤ 17 kg/m², refer to *Eating Disorders in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal).

- Measure blood pressure (refer to Hypertensive Disorders in Pregnancy PPG available at www.sahealth.sa.gov.au/perinatal).
- Palpate fundus (if ≥ 12 weeks) and assess maternal body habitus (may need to consider addition of ultrasounds to assess fetal growth).
- Auscultate fetal heart if after 12 weeks gestation with a Doppler.
- Sexual health (e.g., dysuria, vaginal discharge or bleeding, pelvic pain and anal/genital itch, lumps or sores).
- Breast history and assessment: all women must be asked if they have any concerns about their breasts; particular attention paid to concerning symptoms, such as lumps, unilateral breast pain, thickening or ridge of breast tissue, breast or nipple asymmetry, skin changes such as dimpling or redness, nipple changes or discharge.¹⁴
- Any reported symptoms or breast concerns must be investigated further using the Royal Australian College for General Practitioners ‘triple test approach to diagnosis’, which includes.¹⁴
 - Medical history and clinical breast examination (inspection and palpation).
 - Details of breast changes including size, shape, consistency, mobility, tenderness, fixation, and exact position must be recorded in woman’s case notes or medical record.¹⁴
 - Imaging – ultrasound and/or mammography (consult with radiologist or breast surgeon about the most appropriate test for individual cases).¹⁴
 - Non-excisional biopsy – core biopsy and/or fine needle aspiration (FNA) cytology for suspicious lesions or when additional information is needed (see ‘*investigation of a new breast symptom guide*’ available at <https://www.racgp.org.au/>).¹⁴
- Referral to specialist breast surgeon or multidisciplinary breast clinic service is recommended if any one of the triple test is positive, a cysts aspiration is incomplete (blood in aspirate or lump continues post-aspiration) or a spontaneous unilateral (bloody or serous) discharge from a single duct.¹⁴

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Routine Health Testing

Following appropriate explanation, verbal consent for the following tests should be obtained and consent recorded in the SAPR. Refer to the [SA Pathology Collection Guide](#) for testing information.

- Complete blood picture and send with completed SA Pathology Family of Origin Questionnaire – “Antenatal thalassaemia/haemoglobinopathy screening programme”.
- Ferritin.
- Blood group and antibody.
- Rubella titre.
- Syphilis.
- Hepatitis B & C.
- Human immunodeficiency virus (HIV).
- Asymptomatic bacteriuria.

Note: Omega-3 testing is available to women in the first trimester of singleton pregnancies (provided by SAHMRI) as part of the SAMSAS program only, but is not yet endorsed as ‘routine’.

Additional Targeted Screening at First Visit

- OGTT or HbA1c for women at risk of diabetes (see *Diabetes Mellitus and Gestational Diabetes* PPG available at www.sahealth.sa.gov.au/perinatal).
- Vitamin D level for women with identified risk factors (see *Vitamin D Status in Pregnancy* PPG available at www.sahealth.sa.gov.au/perinatal).
- Cytomegalovirus for women who have frequent contact with large numbers of very young children (see *Cytomegalovirus in Pregnancy* PPG available at www.sahealth.sa.gov.au/perinatal).
- Chlamydia testing for all women < 25 years and for women at higher risk of STI (see [STI risk group](#) below).
- Gonorrhoea testing for women at higher risk of STI (see [STI risk group](#) below).
- Human papilloma virus for women aged over 25 years who have never had a cervical screening test or have not had one within the last 5 years or with a low-grade abnormality without a follow-up smear 12 months afterwards.
- Bacterial vaginosis for women who have symptoms (vaginal discharge with smell).
- Trichomoniasis for women who have symptoms (genital itching, burning, redness or soreness, discomfort with urination, change in vaginal discharge) and for Aboriginal women who reside in, or have travelled through, an area of increased prevalence.
- Tuberculin skin test (TST) for women with a history of recent tuberculosis contact (e.g., Household) or are HIV positive (see *Tuberculosis in pregnancy* PPG available at www.sahealth.sa.gov.au/perinatal).
- Thyroid function testing for women who have symptoms or high risk of thyroid dysfunction (see *Thyroid Disorders in Pregnancy* PPG available at www.sahealth.sa.gov.au/perinatal).
- Vitamin B12 – consider testing women who are vegan, have a family history of vitamin B12 deficiency or pernicious anaemia, have a gastrointestinal disorder (e.g., coeliac disease, Crohn’s disease), have increased mean corpuscular volume (MCV) > 100fL or falling platelet count (< 100 x 10⁹/L).

Sexually Transmitted Infection (STI) Risk Group

Includes women:

- who are of Aboriginal origin who reside in, or have travelled through an area of increased prevalence
- whose partners are of Aboriginal origin who reside in, or have travelled through an area of increased prevalence
- with a history of STI (current or within the previous 12 months)
- who have had sex with men who have sex with men and women
- who have practised commercial sex work
- with overseas sexual contacts, especially from countries with high prevalence of STI(s)

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- who are transgender, non-binary or gender diverse
- with substance use, particularly methamphetamine (ICE) and/or other injecting drug use
- who are adolescents
- with late or no antenatal care
- with new sexual partner/s since they became pregnant.

Health Promotion

See section in PPG for detailed description of health topics for discussion in pregnancy, to be commenced at the first visit.

Referral for Specialist Care

Midwives undertaking first antenatal visits must consider the need for referrals based on the *ACM Midwifery Guidelines for Consultation and Referral*⁵ and according to local health policies and procedures.

General practitioners and other medical officers undertaking first antenatal visits must consider the need for referrals based on the *Standards for Maternal and Neonatal Services in South Australia* (available at www.sahealth.sa.gov.au/perinatal) and according to local policies and procedures.

Referrals include but are not limited to:

- Specialist obstetrician / Maternal Fetal Medicine (MFM) (+/- different health service)
- General Practitioner (GP)
- Obstetric physician
- Anaesthetist
- Aboriginal Maternal Infant Care Worker
- Credentialed diabetes educator
- Mental health team
- Clinical genetics team
- Physiotherapist
- Dietitian
- Lactation consultant
- Refugee Health Service
- Non-Government Organisations such as STTARS (Supporting survivors of torture and trauma)

Note: Women identified at increased risk of preterm birth (see Preterm Labour and Birth PPG available at www.sahealth.sa.gov.au/perinatal), may benefit from targeted assessment and interventions and/or referral (e.g., MFM).

Screening for Chromosomal and Structural Fetal Anomalies

Women should be offered screening for Down syndrome, Trisomy 18, and some other pregnancy pathologies following discussion of age-based risk and personal preferences. For maternal age-related risk of Down syndrome see the SAMSAS Age Specific Performance Data and Counselling Aid ([Update 15 T21 and T18 Supplement \(wchn.sa.gov.au\)](http://www.wchn.sa.gov.au)).

Requesting First Trimester Screening (FTS):

Blood Analysis

5-10 mL clotted blood sample, taken between 9- and 14-weeks' gestation is required.

A list of collection centres is provided on the reverse of the SAMSAS request form.

Complete SAMSAS request form:

- gestational age information (the gestation must be between 9 weeks and 0 days – 14 weeks and 0 days)

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- include weight, ethnicity, other clinical information (e.g., Multiple pregnancy, IVF)
- specify the ultrasound practice performing the nuchal translucency scan.

Refer woman to the Privacy Disclosure on the SAMSAS request form and give the woman the SAMSAS pre-test information sheet.

Ultrasound

Book a Nuchal Translucency scan with the imaging group of choice. The fetus must be between 11 weeks and 0 days – 14 weeks and 0 days gestation at the time of the scan.

Complete an ultrasound request form, specifying “*risk of fetal abnormality*”; and “*Copy to SAMSAS*”.

Requesting Second Trimester Screening (STS)

Screening for Down syndrome should only be offered if the woman presents too late for FTS. If FTS has been undertaken, the screen is for neural tube defects only.

1. 5-10 mL clotted blood specimen is required on or after 14⁺¹ weeks.
2. Complete SAMSAS request form:
 - gestational age information (weeks + days and EDB). This will be amended, if necessary, by SAMSAS when the ultrasound scan information is available.

Non-Invasive Prenatal Testing (NIPT)

NIPT is a screening test which uses cell-free fetal DNA of placental origin in maternal serum to screen for fetal aneuploidy (specifically trisomy’s 13, 18 and 21). It has a high degree of accuracy but is not 100%. A definitive diagnosis of a chromosomal anomaly can only be achieved via an invasive test such as chorionic villus sampling (CVS) or amniocentesis.

NIPT is available through private providers from 9 weeks’ gestation at a cost to the woman (No Medicare rebate available). It may be offered to the woman following a raised FTS or STS, but it remains a cost to the woman.

Morphology Ultrasound

Women should be offered a morphology ultrasound to screen for structural anomalies within the fetus between 18- and 20-weeks’ gestation to ensure sufficient time for appropriate follow-up investigations should an issue be identified.

Women with risk factors for preterm birth should have a cervical length measured as part of morphology ultrasound (see *Preterm Labour and Birth* PPG available at www.sahealth.sa.gov.au/perinatal).

The completed request form should be given to the woman for an imaging provider of her choice unless a tertiary level ultrasound is required.

The following women are at increased risk of fetal anomaly and consideration should be given to tertiary level morphology ultrasound in the first instance:

- Pre-existing diabetes type 1 or 2
- Epilepsy (depending on medication)
- Multiple pregnancy
- Maternal or paternal chromosome translocations
- Known genetic disorders in parents or previous children/pregnancies
- Maternal cardiac conditions
- Previous fetal anomaly/chromosomal condition
- Previous severe early onset IUGR or confirmed maternal antiphospholipid syndrome
- Maternal Anti Ro or Anti La antibodies
- Known maternal substance misuse
- Certain prescribed antipsychotic medications

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When women have a high BMI, visualisation of fetal structures is frequently more difficult, thus plan ultrasound for 19+ weeks gestation. For this group, it is important to note the following:

- these women are at increased risk of diabetes and resultant fetal anomaly
- if structures are not visualised, re-scheduling the ultrasound for later in pregnancy should not be done past 21+0 weeks' gestation as this limits available time for referral and investigation prior to decision-making re possible termination of pregnancy
- consider prompt referral for tertiary level ultrasound if structures are not visualised at first local ultrasound.

Subsequent Antenatal Visits

Frequency

The needs of each pregnant woman differ and are affected by pregnancy complications (previous and current), parity, maternal education and age and caregiver.⁶ Therefore, antenatal care requirements should be assessed at the woman's first visit and reassessed throughout pregnancy with care planned accordingly.

It is recommended that for a woman's first ongoing pregnancy without complications, a schedule of 10 visits is appropriate, but for subsequent uncomplicated pregnancies, only 7 visits may be required.²

Suggested minimum antenatal visits are: 10 week first/booking visit; 20 weeks (following morphology ultrasound), [24], 28, 32, 36, 38 and 40 weeks. Women in their first pregnancy will require more visits.

See [Appendix 2](#) for schedule of visits, screening and suggested topics for discussion as per the SAPR.

Assessment and Documentation at Subsequent Visits

At each visit, the following details must be documented in the SAPR +/- hospital case notes / medical record in accordance with local policy:

- Date of attendance
- Gestation in completed weeks
- Symphysis-fundal height in centimetres, also recorded on graph in SAPR. Where the symphysis-fundal height measurement measures <10th centile or slowed/static growth is suspected, the woman should be referred to a MO +/- growth and AFI ultrasound.⁷
- Weight (repeated weighing is required only in circumstances that are likely to influence clinical management e.g., very low or very high BMI or excessive weight gain during pregnancy)
- Blood pressure (measured on the right arm with the woman seated) using an appropriate sized cuff
- Fetal heart rate and fetal movements (after 20 weeks)
- After 36 weeks gestation, presentation, and station
- Laboratory test results
- Vaccination administration
- Rhesus D immunoglobulin (Anti-D) who have no preformed Rhesus D Antibodies (see Anti-D Prophylaxis PPG available at www.sahealth.sa.gov.au)
- Document in the medical record and SAPR any deviation from normal or concerns about the woman's clinical condition and arrange referral to the appropriate service
- Signature with legible name and designation
- Name and language of interpreter if present
- Date of next attendance.

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Screening Tests at Subsequent Visits

A number of screening tests (either routine or targeted) are required later in pregnancy. All investigations must be preceded by appropriate discussion and informed consent. Each test should be documented when ordered/performed along with the result when available.

Routine Screening 28 weeks:

- Complete Blood Picture, including ferritin
- Blood group antibodies
- Gestational diabetes (oral glucose tolerance test [OGTT] preferred)
- EPDS score.

36 weeks:

- Group B Streptococcus.

Targeted Screening 28 weeks:

- Vitamin D if previous insufficiency diagnosed
- Syphilis if in STI risk group or from an area of high prevalence or outbreak area (see Enhanced Syphilis Testing below).

36 weeks:

- Syphilis if in [STI risk group](#) or from an area of high prevalence
- Gonorrhoea and chlamydia if in STI risk group.

Enhanced Syphilis Testing

Women at increased risk of syphilis in pregnancy include Aboriginal women usually residing in, or travelling through, outbreak areas, or women with partners from outbreak areas. Outbreak areas are described on the [SA Health website](#).

Offer additional syphilis screening at 28 weeks, 36 weeks, birth and 6 weeks postnatal. The woman should be informed of this recommendation with corresponding documentation in the woman's SAPR. See the *Syphilis in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal.

Vaccinations Recommended in Pregnancy

Three vaccinations are recommended in pregnancy. Information should be provided to women in the visit prior to scheduled vaccination. Documentation of vaccinations should be recorded in the SAPR.

For full details, see the *Vaccines Recommended in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal.

Influenza

Timing of the influenza vaccination should be considered in relation to the influenza season and vaccine availability.

Pertussis

Optimal timing of the pertussis vaccination is between 20- and 32-weeks' gestation.

COVID-19

Women should be routinely offered Pfizer mRNA vaccine at any stage in pregnancy as the risk of severe outcomes due to COVID-19 are increased for women and their babies.⁸ Refer to the RANZCOG [website](#) for details.

Anti-D Prophylaxis

Routine anti-D prophylaxis is recommended at 28 and 34 weeks for Rhesus D negative women without preformed antibodies. See *Anti-D Prophylaxis PPG* available at www.sahealth.sa.gov.au/perinatal for details.

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Health Promotion

Antenatal Education

The needs of each pregnancy and woman differ, thus antenatal care and education requirements should be reassessed throughout pregnancy and provided during antenatal visits and/or via specific education platforms. Written information, where available, should be given to women to reinforce health messages. Suggested topics include but are not limited to:

- diet and exercise
- breastfeeding
- fetal movements
- when to contact their maternity care provider (including when to come into hospital for labour)
- planned length of stay in hospital
- newborn topics such as vitamin K, hepatitis B vaccination, newborn screening tests, prevention of SIDS etc.
- psychological preparation for parenting
- community supports (e.g., mental health, breastfeeding, parenting).

Structured antenatal education in the form of classes, groups or one-on-one sessions have been shown to increase women's knowledge and feeling of being prepared for childbirth and parenting.² Refer women to structured sessions as per local resources.

Birth Plan

Perinatal care providers should be involved in the development of realistic birth plans in partnership with women. A discussion of the purpose of the birth plan and when plans may need to change and why should be undertaken. See *Labour and Birth Care: Routine care in normal labour and birth* PPG available at www.sahealth.sa.gov.au/perinatal for more detail.

Nutrition in Pregnancy

The [Australian Dietary Guidelines](#)⁹ provide recommendations based on evidence for healthy eating throughout the lifespan, including pregnancy. There are 3 main dietary considerations in pregnancy, and all should be discussed with women at the first antenatal visit and as required thereafter:

- 1) To ensure that the woman's nutritional requirements are met, essential for her own health and wellbeing as well as the development and growth of the fetus.
- 2) Appropriate weight gain as inadequate intake increases the risk of a low-birth-weight infant and complications of nutrient insufficiencies; whereas excess weight gain is associated with obesity, diabetes and other metabolic disorders in both the women and their infants later in life.²
- 3) Food safety related to infectious agents (e.g., listeriosis) or toxins (e.g., mercury accumulation in some fish species). Fetal exposure is associated with pregnancy complications (e.g., miscarriage) and congenital anomalies in the fetus (e.g., developmental delays from mercury or CMV)

The Australian Government has produced a [printable brochure](#) for women summarising this information titled, *Healthy eating during your pregnancy. Advice on eating for you and your baby*.

The Women's and Children's Hospital has also produced a [printable fact sheet](#) with details on recommended nutrition, supplements and weight gain along with food safety information titled *Nutrition for Pregnancy*.

Vitamin and Mineral Supplements Recommended for All Women in Pregnancy

Folate (folic acid)

Folic acid 0.5 mg/day should be taken routinely by all women at least one month before conception and until 12 weeks' gestation to prevent fetal neural tube defects (NTD).²

Note: Prevalence of NTD in Aboriginal babies is increased when compared with the non-indigenous population. Specific promotion of folic acid supplementation should be provided to Aboriginal women.

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A higher dose of 5mg/day is recommended for women who have an increased risk of fetal NTD, including:

- taking certain anticonvulsant medication (see *Epilepsy in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal)
- family history of NTD or previous affected child
- pre-existing diabetes mellitus (see *Diabetes Mellitus and Gestational Diabetes PPG* available at www.sahealth.sa.gov.au/perinatal)
- women with a BMI > 35kg/m².

Women at increased risk of folate deficiency should take folic acid 5mg/day throughout pregnancy, including women with:

- haemolytic anaemia
- malabsorption disorders (e.g., inflammatory bowel disease)
- hyperhomocysteinaemia
- haemoglobinopathy.

Iodine

Iodine is essential for synthesis of certain thyroid hormones, with maternal deficiency in pregnancy linked to adverse effects on early brain and nervous system development in the fetus.²

Supplementation with iodine 150 micrograms daily is recommended in all women who are pregnant, breastfeeding or considering pregnancy. Women with pre-existing thyroid disorders should be referred for medical review prior to commencement.

Clinicians may recommend a pregnancy multivitamin that contains the recommended amount of iodine.

Vitamin D

All women should be screened for risk factors for vitamin D deficiency at their first antenatal visit.

All women not at risk of vitamin D deficiency should commence colecalciferol 400 units daily as part of routine supplementation. Clinicians may recommend a pregnancy multivitamin that contains the recommended amount of colecalciferol.

Women at risk of vitamin D deficiency should commence 1,000 units (25 micrograms) of colecalciferol per day with subsequent management dependent on 25-OHD levels. See *Vitamin D Status in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal.

Supplements Recommended for Specific Women

Nutrition is integral to a healthy pregnancy outcome and even in a high resource setting such as South Australia, some groups of women are at risk of malnutrition. Women with extremes of BMI (low and high), a history of bariatric procedures, inflammatory bowel disease, those who follow a vegan or vegetarian diet, recent migrants and women of low socioeconomic status are at particular risk of micronutrient insufficiencies in pregnancy.

Iron

Demand for iron increases during pregnancy with dietary insufficiency linked to anaemia which can impact perinatal outcomes with increased risk of postpartum haemorrhage, low birth weight and preterm birth.¹⁰

Supplemental iron will only be required after proof of iron deficiency (see *Anaemia in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal).

Calcium

The use of calcium supplementation has been demonstrated to significantly reduce the risk of preeclampsia, particularly in high-risk women and those with low dietary calcium intake. Calcium supplementation (1.5 g/day) should therefore be offered to women with moderate to high risk of preeclampsia, particularly those with a low dietary calcium intake; commenced by 20 weeks (see *Hypertensive Disorders in Pregnancy PPG* available at www.sahealth.sa.gov.au/perinatal).

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Omega 3 Fatty Acids

Women who do not eat fatty fish such as salmon, herring, mackerel and sardines once a week or any fish 2-3 times a week should consider supplementing with a good quality marine (fish or algal) omega 3 source to reduce the risk of preterm birth (see *Preterm Labour and Birth* PPG available at www.sahealth.sa.gov.au/perinatal).

Omega-3 quantitative testing is available in association with SAMSAS. If selected a report will be issued with advice on whether to commence supplementation.

Vitamin B12

Vitamin B12 is essential for infant neurodevelopment. Food sources of vitamin B12 include red meat, poultry, fish, eggs and milk. Targeted screening for women at risk of vitamin B12 deficiency is described [above](#).

Serum B12 levels should be interpreted in relation to clinical symptoms.

Supplementation with IM hydroxocobalamin or IM / oral cyanocobalamin is safe during pregnancy, with IM administration preferred.

If vitamin B12 deficiency is associated with severe anaemia or neurological symptoms, give vitamin B12 in high doses without delay. Various regimens have been reported but a total IM dose of 3 to 10 mg should be given over 2 to 4 weeks.

A suitable regimen is hydroxocobalamin/cyanocobalamin 1 mg IM, on alternate days for 2 weeks.

For maintenance or prevention of a Vitamin B12 deficiency (inadequate dietary intake e.g., strict vegans):

➤ Hydroxocobalamin/cyanocobalamin 1 mg IM may be given once every 2 to 3 months.

Alternatively, for those with inadequate dietary intake of Vitamin B12 who do not have impaired absorption:

➤ Cyanocobalamin 50 - 200 micrograms orally, may be given daily between meals.

Other Vitamins, Minerals and Micronutrients

There is little evidence to support routinely recommending other dietary supplements, although the importance of consuming a wide variety of nutritious foods in pregnancy is essential to meet the requirements of both the woman and the fetus.² It may be reasonable to consider nutritional supplements if dietary intake is inadequate or there is a proven insufficiency.

Supplements Not Recommended in Pregnancy

Vitamin A

Supplementation over the Recommend Dietary Intake (RDI) is not routinely recommended.

High intake of vitamin A either through supplementation or diet (e.g., consumption of liver) in the first 60 days following conception has been associated with fetal congenital malformations.¹¹

Vitamin E

Studies investigating vitamin E supplements in pregnancy have found no benefit, with increased risks of abdominal pain and term prelabour rupture of the membranes.¹²

Breastfeeding

Breastfeeding should be discussed at the first antenatal visit and in subsequent visits. The woman's intention re infant feeding should be documented in the case notes. If required, a plan to support breastfeeding based on history and clinical assessment should also be documented. Women should be provided with information about the benefits, initiation and management of breastfeeding in the antenatal period (see *Breastfeeding* PPG available at www.sahealth.sa.gov.au/perinatal for details).

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Fetal Movements

All women should be routinely provided with verbal and written information regarding normal fetal movements during the antenatal period with maternal awareness of fetal movements emphasised at each visit from 28 weeks.⁷ If the woman is concerned about changes in their fetal movement pattern they should be advised to contact their maternity care provider immediately (see *Decreased Fetal Movements* PPG available at www.sahealth.sa.gov.au/perinatal for further information and printable information for women).

Side Sleeping

Inform women that going to sleep on their side from 28 weeks of pregnancy can halve their risk of stillbirth, compared to going to sleep on their back. Reassure women that it is normal to move during sleep and if they wake on their back not to be concerned but roll to their side if planning further sleep.⁷

Substance Use in Pregnancy

The adverse effects on fetal development of alcohol and other drugs such as tobacco, psychostimulants and opioids are well known. Women who are pregnant or who may become pregnant are therefore a high priority for interventions to reduce drug use. It is also possible that women may be more prepared to change drug using behaviour if they are pregnant or may become pregnant, which can improve the success of appropriate interventions. All women need to know the risks associated with drug use. In assessing a pregnant woman, where episodic binge use or regular drug use may be an issue, it is important to consider the woman's social supports and emotional well-being as well as drug use.

Information about drug use and its effects may be provided by a range of services, including general practitioners, women's health providers, maternity services, Aboriginal health services, public health information services or schools. For further information see the *Substance Use in Pregnancy* PPG available at www.sahealth.sa.gov.au/perinatal.

Clinicians should specifically advise women that the safest option is to avoid alcohol completely during pregnancy as even a small amount of alcohol may harm fetal development and have lifelong effects. The Australian Government has a [health topic page](#) dedicated to alcohol in pregnancy and includes information on fetal alcohol syndrome and how to reduce or quit alcohol through initiatives such as the Pregnant Pause.

Specific interventions for smoking are detailed [above](#). Women who smoke should be provided with brief advice about the benefits of quitting and offered help at every antenatal visit.⁷

Cytomegalovirus (CMV)

CMV is shed in saliva, urine of those infected and can easily be transmitted to mucosal surfaces such as the mouth from child to mother.

Simple hygiene measures have shown to reduce the risk of maternal CMV infection in pregnancy. Advise all pregnant women about simple infection control precautions:¹³

- hand washing after contact with soiled nappies or respiratory secretions
- do not share food, drinks or utensils used by children less than 3 years of age
- do not put a child's dummy/soother in your mouth
- avoid contact with saliva when kissing a child
- clean toys and counter tops and surfaces that have come in contact with a child's urine or saliva.

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Medicines

Discuss the use of medicines with women. Explain that while avoiding unnecessary use of medicines during pregnancy is advised, there are many medicines that can be safely taken when needed in some situations. Often the risk of the untreated condition (e.g., diabetes) presents a greater risk to the woman and/or baby. Before taking medicines, women should speak with their doctor, pharmacist or midwife. Advise women to tell the pharmacist that they are pregnant when buying over-the-counter medicines.²

The Women's and Children's Hospital provides a state-wide Pharmacy Medicines Information Service specialising in pregnancy and breastfeeding:

Phone: 8161 7555

Email: medinfo@sa.gov.au

Website: www.salus.sa.gov.au/SAPharmacy

Inform women that most herbal preparations have not been established as safe in pregnancy. In particular herbal medicines should be avoided in the first trimester.²

Exercise

Advise women that low to moderate physical activity during pregnancy has been associated with a number of benefits; for example:²

- improved or maintained fitness
- improved perception of health status
- reduced perceived stress, with possibly fewer depressive symptoms.

Advise women that physical activity that involves the risk of abdominal trauma should be avoided (e.g., contact sports).

Dental Health Advice in Pregnancy

Pregnant women are at risk of developing oral health problems such as tooth decay and gum disease. Advise women to have oral health checks and dental treatment if required during pregnancy. It is safe to do so if the dentist is informed of the pregnancy with potential benefits in improved dental health for children.² For more information please see *Pregnancy Advice* at [SA Dental](http://www.dental.sa.gov.au/advice/pregnancy) website (www.dental.sa.gov.au/advice/pregnancy).

Sexual Activity

Advise women without complications (such as placenta praevia, antepartum haemorrhage, other risk factors for preterm birth), that sexual activity in pregnancy is safe.²

Perineal Care

Offer all women information and antenatal education on measures that may have a protective effect against perineal morbidity. See *Perineal Care PPG* at www.sahealth.sa.gov.au/perinatal for details).

Undertake perineal assessment early in the antenatal period by detailed history taking and consult with an obstetrician if a history of anal sphincter injury or genital mutilation is identified (see *Third and Fourth Degree Tear PPG* and *Female Genital Mutilation PPG* at www.sahealth.sa.gov.au/perinatal).

Travel

Inform women about the correct use of seatbelts (i.e., above and below the 'bump') but not over it.

If women are planning travel to an area where there is a high prevalence of an infectious disease(s), additional measures may be necessary, such as reducing risk of mosquito bites or vaccination. See the [Australian Immunisation Handbook](#) for specific details for women who are planning pregnancy, pregnant or breastfeeding.

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Common Conditions During Pregnancy

Summary of advice for women about common conditions during pregnancy.^{2(p320)}

Nausea and Vomiting

Although distressing and debilitating for some women, nausea and vomiting usually resolves spontaneously by 16 to 20 weeks' pregnancy and is not generally associated with pregnancy complications.

Discontinuing iron-containing multivitamins may be advisable while symptoms are present.

Note: See the *Nausea and Vomiting in Pregnancy and Hyperemesis Gravidarum* PPG available at www.sahealth.sa.gov.au/perinatal for guidance on assessment, including use of the *Motherisk PUQE-24 scoring system* and possible treatment recommendations.

Constipation

Increasing dietary fibre intake and taking bran or wheat fibre supplements may relieve constipation.

Stimulating laxatives are more effective than preparations that add bulk but are more likely to cause diarrhoea or abdominal pain.

Reflux

Heartburn may be improved by having small frequent meals and reducing foods that cause symptoms on repeated occasions.

Medications may also be considered for relieving heartburn.

Haemorrhoids

Haemorrhoids may be improved by increasing fibre in the diet and drinking plenty of water; standard haemorrhoid creams can be considered if symptoms continue.

Varicose Veins

Varicose veins will not generally cause harm to the woman or baby and usually improve after the birth.

Pelvic Girdle Pain

Pregnancy-specific exercises, physiotherapy, acupuncture or use of a support garment may provide some relief from pelvic girdle pain.

Carpal Tunnel Syndrome

There is little evidence on the effectiveness of treatments for carpal tunnel syndrome.

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Resources

- > **SAPPGs Web-based App:**
[Practice Guidelines \(sahealth.sa.gov.au\)](https://sahealth.sa.gov.au)
- > **Medicines Information:**
[Medicines Information Homepage - SA Pharmacy Medicines Information Service - LibGuides at South Australian Health Library Service \(sahealthlibrary.sa.gov.au\)](https://sahealthlibrary.sa.gov.au)
- > **SA Health Pregnancy:**
[Pregnancy | SA Health](https://sahealth.sa.gov.au)
- > **Australian Government Pregnancy, Birth and Baby:**
(www.pregnancybirthbaby.org.au) [Pregnancy, Birth and Baby | Pregnancy Birth and Baby \(pregnancybirthbaby.org.au\)](https://www.pregnancybirthbaby.org.au)

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Appendix 1: Establishing an Expected Date of Birth (EDB)

There are three ways to establish an EDB. This is by using the women's known date of ovulation, the date of her last menstrual cycle or by diagnostic ultrasound.

Calculating the EDB

The ability to estimate the range of dates during which birth may occur is influenced by the regularity and length of a woman's menstrual cycle, whether the date of ovulation (rather than that of intercourse) is known and the timing of any ultrasound assessment. Selection of the better estimate of the date of birth is based on the following criteria:

- > if the ultrasound was performed between 6 and 24 weeks of pregnancy and the LMP was not certain or menstruation irregular, use the ultrasound estimate.
- > if the LMP was certain and menstruation regular and no ultrasound was performed between 6 and 24 weeks of pregnancy (or none with a heartbeat), use the LMP estimate.
- > if the LMP was certain and menstruation regular, compare the LMP estimate to the ultrasound estimate: ultrasound performed between 6 and 13 weeks of pregnancy — if the two dates differ by 5 days or less, use the LMP estimate; if the dates differ by more than 5 days, use the ultrasound estimate.
- > ultrasound performed between 13 and 24 weeks of pregnancy — if the two dates differ by 10 days or less, use the LMP estimate; if the dates differ by more than 10 days, use the ultrasound estimate.

PRACTICE NOTE: *The timeframe for ultrasound assessment of gestational age overlaps with that for assessment of nuchal translucency thickness as part of screening for fetal chromosomal abnormalities (11 weeks to 13 weeks 6 days), which may enable some women to have both tests in a single scan. This should only occur if women have been provided with an explanation of both tests and have given their consent to them both.*

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Appendix 2: Schedule of Visits from SAPR (2021)

Note: The SAPR is reviewed and updated annually. Please refer to subsequent updates after 2021

<p>SCHEDULED VISIT <i>for Low Risk Women</i> 1st visit may be with GP Preferably before 10 weeks</p> <p><i>NB More visits may be required to monitor the woman's clinical condition</i></p>	<p>OUTLINE OF ASSESSMENT / TASKS REQUIRED</p> <ul style="list-style-type: none"> <input type="checkbox"/> Calculate EDC by dates and cycle. If uncertain, order dating ultrasound <input type="checkbox"/> Order routine blood and urine tests (copy to the hospital) <ul style="list-style-type: none"> <input type="checkbox"/> Complete blood picture (CBP) <input type="checkbox"/> Blood group and antibody <input type="checkbox"/> Rubella titre <input type="checkbox"/> Syphilis serology <input type="checkbox"/> Hepatitis B <input type="checkbox"/> Chlamydia (if <25 yrs or <30 yrs if high risk) <input type="checkbox"/> Hepatitis C <input type="checkbox"/> Human Immunodeficiency Virus (HIV) <input type="checkbox"/> Mid-Stream Specimen Urine (MSSU) <input type="checkbox"/> Vitamin D (for at risk women) <input type="checkbox"/> Oral Glucose Tolerance Test (OGTT) – for women who meet the screening criteria <input type="checkbox"/> Screen for perinatal mental health <input type="checkbox"/> Discuss and recommend prophylactic Flu (influenza) vaccination <input type="checkbox"/> Commence Iodine supplement <input type="checkbox"/> Commence Vitamin D regime <input type="checkbox"/> Discuss breastfeeding and antenatal education and the monitoring for changes in fetal movement <input type="checkbox"/> Offer combined first trimester screening (11 – 14 weeks) and discuss non-invasive pregnancy test (NIPT) <input type="checkbox"/> Discuss options of Chorionic Villus Sampling (CVS) and / or amniocentesis to women at increased risk <input type="checkbox"/> Offer second trimester serum screening if woman 14⁺ – 20⁶ <input type="checkbox"/> Book morphology ultrasound for 18-20 weeks <input type="checkbox"/> Discuss congenital CMV prevention and screening <input type="checkbox"/> Discuss risk of alcohol, smoking and illicit drug use in pregnancy <input type="checkbox"/> Discuss prophylactic Anti-D with Rh negative women
20 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Discuss maternal blood screening, morphology & ultrasound results & refer as appropriate <input type="checkbox"/> Discuss and recommend Whooping Cough (Pertussis) vaccination
28 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Order (copy to the hospital) <ul style="list-style-type: none"> <input type="checkbox"/> Complete blood picture (CBP) <input type="checkbox"/> Oral glucose tolerance test (OGTT) <input type="checkbox"/> Blood group antibodies <input type="checkbox"/> Syphilis (if indicated) <input type="checkbox"/> Vitamin D (if previously deficient) <input type="checkbox"/> Administer prophylactic Anti-D to Rh negative women as per protocol for Rh negative women <input type="checkbox"/> EPDS Score – to be repeated <input type="checkbox"/> Confirm booking at the intended site for birth
32 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Routine assessment <input type="checkbox"/> Discuss breastfeeding
34 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Administer prophylactic Anti-D as per protocol for Rh negative women
36 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Discuss birthing plan with notation in Management Plan section <input type="checkbox"/> Repeat CBP if anaemic <input type="checkbox"/> Syphilis (if indicated) <input type="checkbox"/> Undertake Group B streptococcus (GBS) screening (copy to GP if GP Shared Care)
38 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Routine assessment
40 weeks	<ul style="list-style-type: none"> <input type="checkbox"/> Discuss induction of labour

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