South Australian Perinatal Practice Guideline

Multiple Pregnancy

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. 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 horse shoe shape design shown in front of the generic statement symbolises a woman and those enclosing a smaller horse shoe shape depicts a pregnant woman. The smaller horse shoe 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

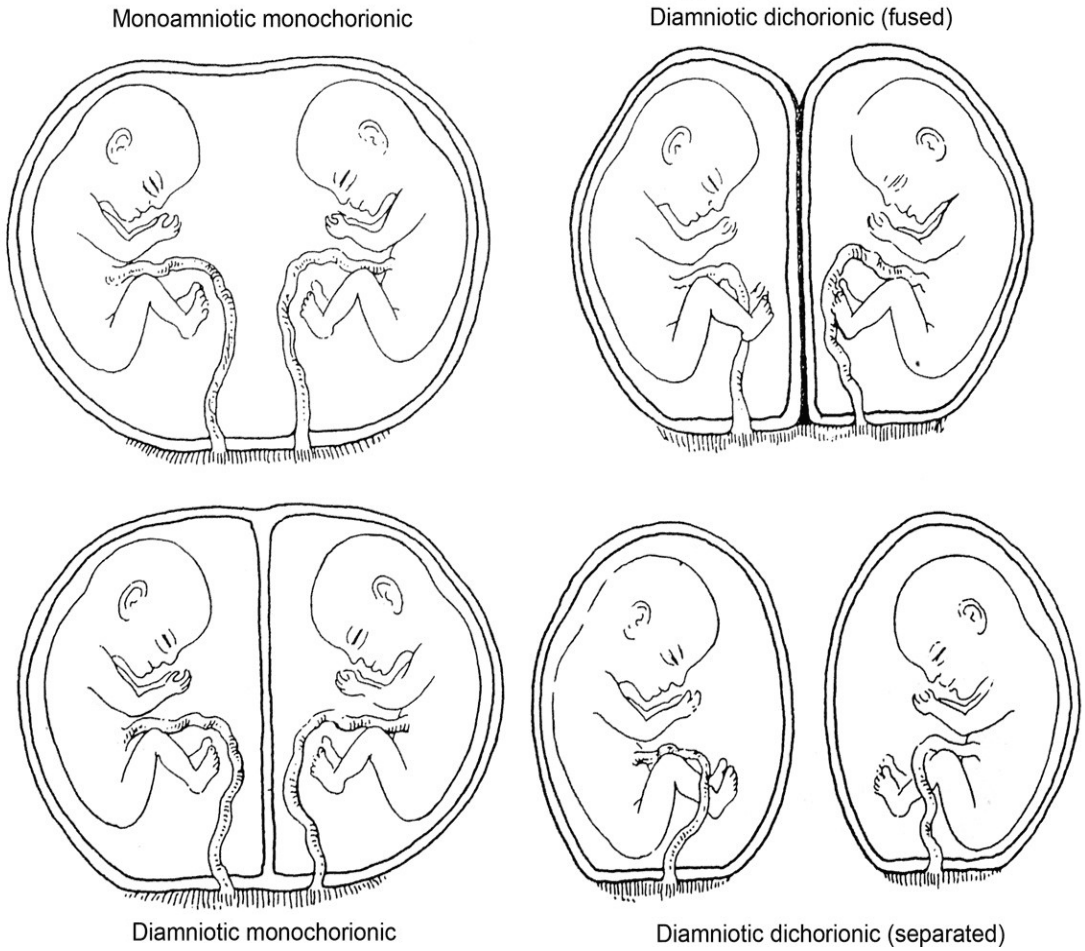
The purpose of this guideline is to provide clinicians with information on the management of women with multiple pregnancy. It details potential complications, antenatal and labour management based on chorionicity and services required as well as general principles of care. Information on twin-to-twin transfusion syndrome is also provided.

Flowchart 1– Suggested care schedule for twin pregnancy in the absence of additional complications

Gestation	DCDA Twins	MCDA Twins
11-14 weeks	Dating, labelling, Chorionicity screening.	Dating, labelling, Chorionicity screening.
16 weeks	Offer review without US to discuss plan for pregnancy care and surveillance of risks.	Fetal growth, DVP, Doppler. Discuss plan for pregnancy care and surveillance of risks.
18 weeks		Fetal growth, DVP, Doppler.
20 weeks	Detailed anatomy and biometry, amniotic fluid volume.	Detailed anatomy and biometry, DVP and Doppler assessment.
22 weeks		Fetal growth, DVP, Dopplers.
24 weeks	US fetal growth, DVP, Doppler.	Fetal growth, DVP, Dopplers.
26 weeks		Fetal growth, DVP, Dopplers.
28 weeks	US fetal growth, DVP, Doppler. Routine screening for anaemia, blood group antibodies and GDM. Prophylactic Anti-D if required.	Fetal growth, DVP, Dopplers. Routine screening for anaemia, blood group antibodies and GDM. Prophylactic Anti-D if required.
30 weeks		Fetal growth, DVP, Dopplers.
32 weeks	US fetal growth, DVP, Doppler.	Fetal growth, DVP, Dopplers. Discuss preferences for mode of birth and plan timing.
34 weeks	Offer additional review without ultrasound to discuss preferences for mode of birth. Prophylactic Anti-D if required. Discuss and plan timing of birth.	Fetal growth, DVP, Dopplers. Prophylactic Anti-D if required. **Plan timing of birth.**
36 weeks	US fetal growth, DVP, Doppler. **Plan timing of birth.**	Fetal growth, DVP, Dopplers. **Plan timing of birth.**

DVP = deepest vertical pocket of amniotic fluid *Dopplers = umbilical artery doppler*

Figure 1 | Twin Chorionicity



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Summary of Practice Recommendations

Early assessment of chorionicity by ultrasound is essential in the management of multiple pregnancy.

Refer women with twin pregnancies to a level 4 or higher unit (include referral to additional support services such as lactation support and access to community and social work).

Women with triplets or higher pregnancy should be referred to a level 6 tertiary centre given the additional complications and likelihood of birth < 34 weeks. Referral needs to occur in a timely manner. If counselling regarding fetal reduction is considered, then referral should be made as soon as possible following diagnosis of multiple pregnancy.

Aboriginal women and families often become lonely, disconnected, and distrustful when they are separated from their communities, families, and country. Consult with the Aboriginal Health Professional or Aboriginal Liaison Officer to ensure culturally safe and responsive care for Aboriginal consumers and families.

Women need to be informed of the increased risks associated with multiple pregnancy (see major challenges).

Consider low dose aspirin for preeclampsia prophylaxis depending on additional risk factors.

Consider frequent screening for iron deficiency and anaemia with supplementation as needed given the higher risk of antenatal anaemia and post-partum haemorrhage.

Aboriginal women should be consulted about any decisions regarding their care in the first instance and offered support from an Aboriginal Health Professional.

Antenatal visits may need to be more frequent than in singleton pregnancies for the timely detection and treatment of medical or obstetric complications (see flowchart 1).

Multiple pregnancy requires additional ultrasound monitoring. The frequency of this is determined by chorionicity and fetal growth patterns. Discordant fetal growth requires further investigation and/or referral to specialist services within one week of identification.

40–50% of Monochorionic (MC) twin pregnancies have significant perinatal complications, as such MC Twin ultrasound examinations **should be performed** at Obstetric Ultrasound providers experienced in MC evaluation and surveillance. A referral to these experienced ultrasound providers should be sent soon after the diagnosis of MC is made, or if chorionicity and amnionicity is uncertain at initial examinations. Consider referral to **Maternal Fetal Medicine**.

For rural and regional centres consider early referral to tertiary hospital for ultrasound and pregnancy care planning and discussion of sharing care with local birth services where appropriate.

Monochorionic twins require fortnightly ultrasounds to assess for twin-to-twin transfusion syndrome (TTTS) from 16 weeks gestation. If TTTS/s IUGR/TRAP/TAPS is suspected, refer woman to a Maternal Fetal Medicine specialist immediately.

Women with an uncomplicated twin pregnancy, with a leading twin in a cephalic position and no other obstetric indication for a caesarean should be offered a planned vaginal birth or planned caesarean birth and be reassured that both are safe choices for them and their babies.

Timing of birth is dependent on chorionicity:

- monochorionic twin pregnancies should be offered elective birth from 36^{+0} weeks dependent of clinical findings
- dichorionic twin pregnancies can be offered elective birth from 37^{+0} weeks. Birth will always be based on clinical situation.

Birth of twins should occur in a centre with appropriate experience and access to theatre, blood products and Neonatal support should the need arise.

Continuous electronic fetal monitoring is indicated in labour.

Birth of twin 1 should be no different to singleton birth except prophylactic oxytocic for third stage should be withheld.

The lie and presentation of the second twin should be determined immediately after the birth of the first twin. External version or internal podalic version may be used to achieve a longitudinal lie.

If the fetal heart rate is normal, birth of the second twin can be awaited but there is evidence that the perinatal risks rise beyond a 30-minute inter-twin delivery interval.[1]

If the uterine contractions are inadequate, an IV oxytocin infusion should be commenced.

Consider additional prophylaxis for postpartum haemorrhage following birth of the second twin.

Abbreviations

>	Greater than
≥	Equal to or greater than
<	Less than
≤	Equal to or less than
CCT	Controlled cord traction
DVP	Deepest vertical pocket of amniotic fluid
DCDA	Dichorionic, diamniotic
EFM	External fetal monitoring
EFW	Estimated fetal weight
Doppler(s)	Umbilical artery Doppler
et al	And others
IU	International units
IV	Intravenous
MCDA	Monochorionic, diamniotic
MCMA	Monochorionic, monoamniotic
mL	Milliletre(s)
NICE	National Institute for Health and Care Excellence
PPH	Post-partum haemorrhage
sFGR	Selective fetal growth restriction
TAPS	Twin anaemia-polycythemia sequence
TRAP	Twin reversed arterial perfusion
TTTS	Twin-to-twin transfusion syndrome

Definitions

Zygosity	Refers to whether the twins arose from one (monozygous) or from two fertilized eggs (dizygous).
Chorionicity	Refers to the number of outer membranes that surround the fetus in a multiple pregnancy and corresponding placentation.
Amnionicity	Refers to the inner membrane layers that do or do not separate the gestational sacs of the twins (see figure 1).
Monochorionic Monoamniotic (MC/MA)	Have no separating membrane.
Monochorionic Diamniotic (MC/DA)	Have a separating membrane consisting of amnion only (two layers).
Dichorionic Diamniotic (DC/DA)	Have a separating membrane consisting of both amnion and chorion. They may or may not have separate (or fused) placentae.
Dizygotic twins	Have separate placentae although these can be fused together (dichorionic diamniotic).

Multiple Pregnancy

Introduction

The family with a multiple pregnancy requires extra support not only in pregnancy, but in the first few years after birth. There are many practical challenges in caring for multiple babies/infants simultaneously. Valuable sources of support include multiple birth coordinators at public hospitals, Multiple Birth South Australia, Australian Multiple Birth Association, and Child and Family Health Service (CaFHS). Family planning and breastfeeding advice are also important.

Care for multiple pregnancy is likely to require level 4, 5 or 6 facilities (see *Standards for Maternal and Neonatal services in SA* available at www.sahealth.sa.gov.au/perinatal).

A twin pregnancy ≥ 34 weeks should be managed at a Level 4, 5 or 6 health unit. Level 4 health units are further restricted to only managing those uncomplicated twin pregnancies which are at term and have a predicted birth weight ≥ 2000 grams, and no other multiple high order gestations.

Level 5 health units are further restricted to managing those twin pregnancies ≥ 34 weeks gestation where the neonates have an anticipated birth weight of > 1500 grams, and no other multiple high order gestations.

Level 6 perinatal health units should manage Twin pregnancies < 34 weeks gestation, and any neonate(s) with an anticipated birth weight of < 1500 grams and all multiple high order gestations.

Major Challenges

Early assessment of Chorionicity by ultrasound before 14 weeks is essential in the management of multiple pregnancies, as it is more difficult to delineate after this.

Perinatal mortality and morbidity are significantly higher in twin than in singleton pregnancies at each week of gestational age.[2] Particularly at earlier gestational ages, this often relates to:

- preterm birth
- intrauterine growth restriction
- increased incidence of obstetric complications including pre-eclampsia
- twin to twin transfusion in monochorionic twins
- antepartum death of one of the twins.

Twin pregnancies are associated with a higher frequency and higher severity of maternal symptoms (e.g., nausea and vomiting in early pregnancy, musculoskeletal discomfort).

Conditions that are considerably more frequent in twin pregnancies than in singleton pregnancies, that should be discussed with women and their support person include:

- miscarriage or intrauterine demise of one of both twins
- anaemia
- pre-eclampsia
- gestational diabetes
- congenital anomalies (more common in monozygotic twins)
- preterm birth
- malpresentations
- postpartum haemorrhage.

There is also an increased frequency of long-term adverse infant outcomes including cerebral palsy, even after accounting for gestational age at birth.[3]

All monochorionic twin pregnancies carry a substantial risk of twin-to-twin transfusion.

Conjoined twins and twin-reversed arterial perfusion (TRAP sequence) are a rare subset of monochorionic twins. If concern for these complications twins is raised on ultrasound, the woman should be referred to a Maternal Fetal Medicine subspecialist for tertiary ultrasound and counselling about prognosis and options.

Incidence

The prevalence of spontaneous twin pregnancies ranges from approximately 0.6% of pregnancies in Asia and 2–3% in Australia,[4] Europe and the USA to about 4% in Africa.

The incidence of monozygotic twins is roughly similar among populations, but the frequency of dizygotic twins varies widely with geography, ethnicity, parity and maternal age, as well as use of assisted reproduction.[5]

Worldwide there is an increasing rate of twin pregnancies attributed predominantly to increasing maternal age at conception and use of assisted reproductive techniques.

The rate of monozygotic twins is 2.25 times higher in assisted conceptions than natural conceptions.[6]

Dizygotic twins are always dichorionic.

Monozygotic twins have a chorionicity that relates to how early the fertilized egg splits.

Of live born twins:

- 70% to 75% are monochorionic diamniotic (splitting day 3–8)
- 25% to 30% are dichorionic diamniotic (splitting day 1–3)
- 1% are monochorionic monoamniotic1 (splitting day 8–13).[5]

Antenatal Care in Early Pregnancy

Ultrasound evaluation and surveillance is the cornerstone of improving perinatal outcomes and requires quality assessment (prior to 14 weeks) for:

- dating of the pregnancy (determining gestational age)
- assessment of chorionicity and amnionicity
- assign nomenclature to babies (for example, upper and lower, or left and right) and document this clearly in the woman's notes to ensure consistency
- screening for structural abnormalities
- screening for fetal growth restriction.

Screening and prenatal diagnosis for aneuploidy – statistically the risks are double for at least one fetus to be affected in any twin pregnancy.

Screen for structural abnormalities.

There is a 2–3 times increased risk of fetal structural abnormalities in monozygotic twins. In natural conception twins, 1/3 of DCDA twins are monozygotic and thus potentially still increased risk of structural abnormalities.

Risk of structural abnormalities overall by chorionicity:

- 1 in 25 in DCDA Twins
- 1 in 15 in MCDA Twins
- 1 in 6 in MCMA Twins

Encourage women with a multiple pregnancy to attend antenatal education specific to multiple birth and to join the South Australian Multiple Birth Association.

For Aboriginal women, consider imagery or pictorial images to support education on multiple pregnancy. Some Aboriginal women may not have English as their first language. Consult with an Aboriginal Health Professional or Aboriginal Maternal Infant Care Worker to ensure culturally sensitive and appropriate education for Aboriginal women with multiple pregnancy.

Consider the initiation of low dose aspirin prior to 16 weeks depending on other risks for preeclampsia (see **antiplatelet agents** in *Hypertensive Disorders in Pregnancy PPG* found in the A-to-Z index at www.sahealth.sa.gov.au/perinatal).

For Aboriginal women, discuss eligibility for Closing the Gap Medicines Access Program to support affordable access to medications in pregnancy.

Unlike a singleton pregnancy there are not accurate method for screening for aneuploidy in twin/ multiple pregnancies.

- Combined first trimester screening can be used, which will calculate a risk specific to each fetus. It is possible that a fetus with a chromosomal abnormality would be masked by the averaging of serum biomarkers to calculate this risk.
- Non-invasive prenatal testing gives a risk for the pregnancy overall but with a higher no call rate than in singleton pregnancies.[8]
- Non-invasive prenatal testing may be falsely positive in the setting of early demise of a twin.
- Chorionic villus sampling or amniocentesis can be used as diagnostic tests. However, reported loss rates are greater in sampling a twin pregnancy (possibly due to double puncture) and there is a possibility of inaccurate diagnosis due to sampling the same sac twice.[9]

Fetal reduction or termination can be offered in cases of congenital anomaly in one or both twins. Referral to Maternal Fetal Medicine should be offered in a timely manner to ensure appropriate counselling regarding abnormality and ongoing care.

Aboriginal people experience high levels of grief and loss in communities. Stillbirth or fetal loss demands ceremonial acknowledgement. Consult with an Aboriginal Health Professional, Aboriginal Liaison Officer or AMIC Practitioner to ensure cultural beliefs and practices are considered.

Subsequent Care in Pregnancy

Twin pregnancies require specialist antenatal care in hospitals with adequate facilities. There is currently no evidence to support interventions aimed at prevention of preterm birth in twins, including progesterone, cervical cerclage, hospitalization, bed rest or prophylactic tocolytics.

Advice about work cessation should be considered at an earlier than singleton pregnancies.

Indications for Anti-D Prophylaxis for Rhesus negative are the same as for singletons:

- a dose of 625 international units should be used even in first trimester in a multiple pregnancy.

Frequent ultrasound monitoring is indicated to screen for selective growth restriction in all pregnancies, and for twin-to-twin transfusion (TTTS)/s IUGR and twin anaemia-polycythemia sequence (TAPS) in monochorionic twins (see below).

The suggested antenatal schedule of visits depends on Chorionicity:

- for uncomplicated DCDA twins, antenatal appointments should occur between 11-14 weeks gestation in the first instance then with ultrasounds at 20, 24, 28, 32 and 36 weeks and the offer of additional appointments without scans at 16 and 34 weeks[10]
- for uncomplicated MCDA twins, antenatal appointments should occur with ultrasound between 11-14 weeks gestation then at 16, 18, 20, 22, 24, 26, 28, 30, 32, 34 weeks.[10]

Singleton ultrasound charts are commonly used in twin pregnancies.

Where the estimated fetal weigh (EFW) discordance is more than 20%, the EFW of either twin is < 10th centile, or if the abdominal circumference is < 10th centile in a monochorionic twin pregnancy, increased surveillance and specialist review should be considered.[11]

Death of One Twin

Twin pregnancies have high incidences of fetal demise of one twin, in particularly the first trimester. Fetal demise rates of one twin in MCDA and DCDA pregnancies are 41% and 22% respectively. After 13 weeks, the fetal loss rate is 1.2% in DCDA twins and 3.5% in MCDA twins.[12]

In early pregnancy, there is usually some extent of resorption of the fetus and placenta. The perinatal risk for the remaining fetus remains higher than it would have been for a singleton pregnancy, mainly when the loss occurs in the second trimester or later.[13]

In MCDA twin pregnancy, death of one fetus later in pregnancy is associated with a higher risk of death and subsequent disability for the other fetus. Fetal demise after 20 weeks gestation may carry a risk of death or disability for the remaining fetus of up to 20% in MCDA pregnancies. For DCDA twin pregnancies, the risk of cerebral damage is approximately 1%.[14]

At the time of birth, identify any remains of the demised twin and ensure the remains are identified and sent to Histopathology.

Referral to appropriate social support needs to be considered. Fetal demise > 20 weeks will require the baby to be registered as a birth and a death.

Aboriginal people experience very high levels of grief and loss in their communities. Stillbirth demands ceremonial acknowledgement Discuss with their nominated Aboriginal Health Professional, AMIC Practitioner or Aboriginal Liaison Officer.

Preterm Labour

There is no evidence to support routine use of prophylactic corticosteroids or vaginal progesterone for women with a multiple pregnancy despite the increased risk of preterm birth.

Based on the data from the benefits in singleton pregnancies, corticosteroids are recommended to women < 34^{+0} weeks with twin pregnancies at risk of preterm birth within the next 7 days.

The wellbeing of both twins should be ascertained by cardiotocography before tocolytics are considered.

If inhibition of labour is indicated follow the guidelines for tocolysis in preterm labour (see the Nifedipine section *for Preterm Labour & Birth Prevention, Diagnosis & Management PPG* found in the A-to-Z index at www.sahealth.sa.gov.au/perinatal).

There is limited evidence supporting the delayed delivery of twin 2 in cases of preterm labour in viable gestations, as such it is recommended that care needs to be individualised and carefully managed by senior obstetric teams.

Timing and Mode of Birth

Given the risk of preterm birth in twin pregnancies, it is recommended that discussions about preferences for mode of birth occur by 32 to 34 weeks.

Planning birth in twin pregnancies should balance the risks of prematurity with the risks of continuing the pregnancy. The stillbirth rate in twin pregnancies trends upwards from 36 to 38 weeks.[2] There is evidence from a multicentre randomised controlled trial that planned birth at 37 weeks in an uncomplicated twin pregnancy is associated with a reduction in adverse neonatal outcomes when compared to waiting to plan birth until 38 weeks.[15]

Need to consider social implications:

- rural/regional families
- non–Medicare

In a randomized controlled trial that involved multiple centres across different countries, researchers evaluated the risk of planned caesarean birth versus planned vaginal delivery for twin 1 who presented cephalic and had no contraindications to vaginal birth after 32 weeks gestation. The study showed that there was no significant difference in the risk of fetal or neonatal death or serious neonatal morbidity between the two delivery modes.[16]

Recommended Counselling for Women with Twin or Multiple Pregnancies
The National Institute for Health and Care Excellence[10] recommends the following information be discussed with women with twin or multiple pregnancy:

- for women who have an uncomplicated DCDA twin pregnancy, it is important to understand that planned birth from 37^{+0} weeks does not seem to increase the risk of serious neonatal complications. However, continuing the pregnancy beyond 37^{+6} weeks can increase the risk of fetal death.

- explain to women with an uncomplicated twin pregnancy planning their mode of birth that planned vaginal birth and planned caesarean section are both safe choices for them and their babies if the following apply:
  - the pregnancy remains uncomplicated and has progressed beyond 32 weeks
  - there are no obstetric contraindications to labour
  - the presenting twin is cephalic
  - there is no significant size discordance between the twins.
- there is a small (4–5% risk) of caesarean section for the second twin after a vaginal birth of the first twin.

Intrapartum Management

Equipment

- Portable ultrasound to confirm presentation and heart rate of both twins.
- Continuous electronic fetal monitoring (EFM) for both twins.
  - Consider fetal scalp electrode for twin one if technical difficulties with external monitoring.
- Extra birth bundle for second twin plus amnihook.
- IV oxytocin 10 units in one litre Hartmann's (or 0.9% sodium chloride) infusion.
- forceps (Neville Barnes, Simpsons, Kjellands) and Ventouse.
- Extra cord blood syringe (20 mL), blood sample tubes, container to receive cord blood, cord gas syringes and needles.
- Extra cord clamp for twin 2 (and to identify placental cords 1 and 2).
- Extra drying towel (cloth napkin) and warm wraps.

Considerations

- Ensure that appropriately skilled and experienced staff from multidisciplinary team including Obstetrics, Neonatal/ Paediatrics and Anaesthetic staff are available for the birth.
- Access to operating theatres and blood products for transfusion.
- Gain intravenous access with consent and collect Group and Save and full blood examination (FBE) blood specimens.
- Delivery of the first twin may be conducted as for normal vaginal birth. Ensure adequate preparation has been made in case of complications with the second twin.
- Early placement of effective epidural anaesthesia at birth may be useful if interventions for the birth of the second twin are needed.
- Consideration of oxytocic for active management of third stage (**after delivery of twin two**) given the high risk of PPH.

Birth of First Twin

- Birth of twin one as per normal vaginal birth, but withhold oxytocic for third stage.
- If possible, a nuchal cord should not be clamped and cut until after the birth of twin one (lift over the fetal head as rarely the cord may be that of twin two).

Birth of Second Twin

- Immediately after the birth of twin 1, perform an abdominal and vaginal examination to determine the lie and presentation of the second twin, confirm with ultrasound if needed.
- Continuous electronic fetal monitoring.
- If the fetal heart rate is normal, birth of the second twin can be awaited, however perinatal risks for the second twin start to rise after 30 minutes.
- External version or internal podalic version by an experienced obstetrician may be used to achieve a longitudinal lie.
- If the uterine contractions are inadequate an IV oxytocin infusion should be commenced.
- Encourage the woman to commence active pushing after adequate contractions have been achieved.

- Amniotomy should not be performed unless the fetus is in a longitudinal lie and well applied in the pelvis or as part of planned internal podalic version.
- Be aware of the risk of cord prolapse.
- If signs of fetal compromise occur, birth can be expedited with an instrumental delivery, breech extraction or caesarean section.
- Give a prophylactic oxytocic after the anterior shoulder of the second twin has been delivered.
- Obtain cord blood for group, and blood gases for both twins.
- Perform active management of third stage by controlled cord traction (see 'active management of third stage' section in the *Labour and Birth Care PPG* found in the A-to-Z index at www.sahealth.sa.gov.au/perinatal).
- After delivery of twin 2 and the placenta and membranes, commence a 40 units oxytocin infusion (in 500 mL 0.9% sodium chloride) at 125 mL/hour for PPH prophylaxis as indicated.

Elective Caesarean Section

- Twin pregnancies with breech presentation of twin one or other major obstetric risk factors may require birth by elective caesarean section.[17]
- Breech presentation of the second twin is not a contraindication to vaginal birth.

Paediatric Consultation

- The babies should be checked immediately by the paediatrician because of the increased risk of anomalies, IUGR, anaemia, polycythaemia, hypoglycaemia, and coagulopathy.

Aboriginal woman and families should be consulted on the care of the newborn baby and/or babies in the first instance. Please consult with the preferred Aboriginal health professional, AMIC Practitioner or Aboriginal Liaison Officer to ensure culturally safe, sensitive, and responsive care for Aboriginal women and families.

Postnatal Management

- In all cases extra observations are required to ensure the uterus remains contracted to reduce postpartum haemorrhage.
- Further oxytocin may be required, an intravenous oxytocin 40-unit infusion may be set up at 10 units per hour for 4 hours after delivery.
- Fused placentae of same sex twins should be sent unfixed for pathological examination to help confirm chronicity with labelling of twin 1 and twin 2 with clamps (i.e., one clamp for twin one's cord; two clamps for twin two's cord).
- Additional breastfeeding support should be offered and timely referral to additional social supports.

Aboriginal women and families should be consulted on any follow up plans and supported with an Aboriginal Health Professional, AMIC or Aboriginal Liaison Officer. Clinicians should discuss primary carer or health service back in community or country to ensure timely and adequate follow up can occur.

Complications Specific to Monochorionic Twins

As 40–50% of MC Twin Pregnancies have significant perinatal complications, these MC Twin ultrasound examinations **should be performed** at Obstetric Ultrasound providers experienced in MC evaluation and surveillance. Suggest tertiary referral. A referral to these tertiary providers should be sent soon after the diagnosis of MC is made or if chorionicity and amnionicty is unsure at initial examinations.

In addition to the complications associated with any twin pregnancy, there are several complications that can occur almost exclusively with mono chorionic twins due to unequal placental sharing

resulting in selective fetal growth restriction (sFGR) or unequal sharing of blood through vascular anastomoses in the placenta; twin to twin transfusion (TTTS) or twin anaemia polycythemia sequence (TAPS).

The death of one twin has significant implications in monochorionic twin pregnancy where there is a shared placental circulation due to acute hypotension in the co-twin.[18]

Need to consider Social Work involvement and implications of multiple birth > 20 weeks.

Twin to Twin Transfusion Syndrome (TTTS)

10–15% of monochorionic twin pregnancies show clinical evidence of twin-to-twin transfusion syndrome (TTTS). If TTTS is suspected, a Maternal Fetal Medicine specialist should be consulted.

TTTS may present with sudden maternal abdominal swelling or back pain, a tense uterus and threatened or premature labour caused by the increased volume of amniotic fluid in the recipient twins sac. Is important for all women with MC Twin Pregnancies to be informed of these symptoms and advised to present for review if these occur.

TTTS should be screened through fortnightly ultrasounds from 16 weeks as delayed detection is associated with poorer outcomes.

The main ultrasound finding in TTTS is a discordance in the deepest vertical pocket (DVP) measurements between the twins. The Quintero system is used to stage TTTS.[19]

Fetoscopic laser ablation of placental vascular anastomoses in the second trimester of pregnancy has been found to improve infant outcome compared with serial amnioreduction.[20] The fetoscopic laser ablation procedure requires referral of the woman to interstate Maternal Fetal Medicine units.

Twin Anaemia Polycythaemia Sequence (TAPS)

TAPS occurs in approximately 5% of monochorionic twins, and in 10% of twins after laser treatment for TTTS. The pathophysiology is of slow transfusion from donor to recipient which doesn't cause the same fluid shifts and changes in amniotic fluid levels as in TTTS but instead causes a progressive anaemia in the donor twin and polycythemia in the recipient twin. This can occur as early as 16–18 weeks gestation and can only be detected by discordance in the middle cerebral artery (MCA) peak systolic velocity (PSV). Commonly there are no other ultrasound features present.

Fetal Surveillance

Ultrasound examination in monochorionic twins should include biometry, DVP of amniotic fluid, the visibility of the bladder of each twin, umbilical artery and, preferably, middle cerebral artery Doppler wave forms.[10]

Ultrasound findings that warrant specialist review include:

- early discordance in fetal size and or nuchal translucency measurement
- discordance in fetal growth / size (alone or with associated poly/oligohydramnios)
- discordance in DVP of amniotic fluid with one twin DVP ≤ 8 and the other DVP < 2
- inability to visualize fetal bladder
- umbilical artery Doppler abnormalities
- discordance of MCA PSV with one twin MCA PSV > 1.5 MoM and the other < 0.8 MoM or a discordance of ≥ 1 MoM between the twins.

Additional Resources

Multiple Birth SA: (www.multiplebirthsa.org.au) - Multiple Birth SA

Australian Government Pregnancy, Birth and Baby: Pregnancy, Birth and Baby | Pregnancy Birth and Baby (pregnancybirthbaby.org.au)

Medicines Information: Medicines Information Homepage - SA Pharmacy Medicines Information Service - LibGuides at South Australian Health Library Service (sahealthlibrary.sa.gov.au)

Raising Children – Pregnancy and Birth: Pregnancy and Birth | Raising Children Network

SA Health Pregnancy: Pregnancy | SA Health

SAPPGs Web-Based App: Practice Guidelines (sahealth.sa.gov.au)

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05/07/2018	V5.1	SA Health Safety and Quality Strategic Governance Committee	Review date extended to 5 years following risk assessment. New template.
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