Management of Multiple Pregnancy Guideline

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Brief Summary of Document:	This guideline covers the care that should be offered to women with a twin or triplet pregnancy in addition to the routine care that is offered to all women during pregnancy. It aims to reduce the risk of complications and improve outcomes for women and their babies.
Scope	Health care professionals caring for women with a twin or triplet pregnancy and their families

To be read in conjunction with:	• NICE Twin and Triplet Pregnancy (NG137) 2019 https://www.nice.org.uk/guidance/ng137/resources/twin-and-triplet-pregnancy-pdf-66141724389829 • NICE Guideline on Antenatal Care for Uncomplicated Pregnancies • Threatened Preterm and Preterm Birth Guideline • 667 – Management of Induction of Labour • Administration of Aspirin • Thromboprophylaxis in the Antenatal and Postnatal Period Guideline • Continuous Electronic Intrapartum Fetal Monitoring Guideline

	• Management of Postpartum Haemorrhage Guideline
Patient Information	• RCOG, 'Multiple Pregnancy: Having More than One Baby' (2016) https://www.rcog.org.uk/en/patients/patient-leaflets/multiple-pregnancy-having-more-than-one-baby/

Owning group	Obstetric Guideline, Audit and Research Group Approved 26/05/2020

Reviews and updates		
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1	New guideline	14/09/2017
2	reviewed	26/05/2020

Glossary of terms

Term	Definition
EFW	Estimated Fetal Weight
CLC	Consultant-led care
CTG	Cardiotocograph
NICU	Neonatal Intensive Care Unit
TAPS	Twin anaemia polycythaemia sequence

Keywords	Multiple pregnancies, chorionicity, amnionicity, antenatal, intrapartum, monitoring, NICU, tertiary unit, referral

1. INTRODUCTION

- **All women with multiple pregnancies must be booked under the care of a Consultant.**
- **Women with a triplet pregnancy will be referred to the nearest available Consultant-led Unit with level 3 NICU facilities.**
- **Glangwili General Hospital has SCBU facilities to care for twin babies born at > 34 weeks gestation**

- Twins or triplets occur in approximately 1 in 60 pregnancies (16 in every 1,000 women giving birth in 2015 had a multiple birth), and 3% of live-born babies are from multiple gestations. The incidence of multiple births has risen in the past 30 years. This is due mainly to increasing use of assisted reproduction techniques, including in vitro fertilisation (IVF), and also to changing demographics as women defer pregnancy and twins are more common at later ages (102 in every 1,000 women giving birth in 2015 were aged 45 or over).
- Women with a twin or triplet pregnancy are at higher risk compared with women with a singleton pregnancy. Adverse outcomes are more likely, both for the woman and her babies, during the prenatal and intrapartum periods. Because of this, women need increased monitoring and more contact with healthcare professionals during their pregnancy.
- Assessment and planning start as soon as the twin or triplet pregnancy is detected and continue throughout pregnancy at each antenatal contact. Determining the chorionicity and amnionicity of the pregnancy allows the risk to be stratified and the number of antenatal visits and ultrasound examinations to be planned. It is important that ultrasound surveillance is carefully scheduled to monitor for complications including selective fetal growth restriction, feto-fetal transfusion syndrome (Twin to twin transfusion syndrome) and twin anaemia polycythaemia sequence (TAPS).
- Identifying complications earlier means that decisions can be made promptly about referring the woman to a tertiary level fetal medicine centre. It also informs discussions with women in their second and third trimesters about their hopes and wishes in relation to timing and mode of birth, and the management of the intrapartum period (including fetal monitoring, analgesia and the third stage of labour).

2. SCOPE

Health care professionals caring for women with a twin or triplet pregnancy and their families

3. AIM /OBJECTIVES

This guideline covers the care that should be offered to women with a twin or triplet pregnancy in addition to the routine care that is offered to all women during pregnancy. It aims to reduce the risk of complications and improve outcomes for women and their babies.

4. WOMAN CENTERED CARE

- Treatment and care should take into account women's individual needs and preferences. Good communication is essential, supported by evidence-based information, to allow women to reach informed decisions about their care and the care of their babies.
- Follow advice on seeking consent from the Department of Health or Welsh Government if needed. If the woman agrees, families and carers should have the opportunity to be involved in decisions about treatment and care.

5. DEFINITIONS: CHORIONICITY AND AMNIONICITY

Types of Twin Pregnancy	
Dichorionic diamniotic twins (DCDA)	Each baby has a separate placenta and amniotic sac
Monochorionic diamniotic twins (MCDA)	Both babies share a placenta but have separate amniotic sacs.
Monochorionic monoamniotic twins (MCMA)	Both babies share a placenta and amniotic sac.
Types of Triplet Pregnancy	
Trichorionic triamniotic triplets	Each baby has a separate placenta and amniotic sac.
Dichorionic triamniotic triplets	One baby has a separate placenta and 2 of the babies share a placenta. All 3 babies have separate amniotic sacs.
Dichorionic diamniotic triplets	One baby has a separate placenta and amniotic sac and 2 of the babies share a placenta and amniotic sac.
Monochorionic triamniotic triplets	All 3 babies share 1 placenta but each has its own amniotic sac.
Monochorionic diamniotic triplets	All 3 babies share 1 placenta. One baby has a separate amniotic sac and 2 babies share 1 sac.
Monochorionic monoamniotic triplets	All 3 babies share a placenta and amniotic sac.

- **Specialist obstetrician:** An obstetrician with a special interest, experience and knowledge of managing multiple pregnancies, and who works regularly with women with multiple pregnancies.

- **Tertiary level fetal medicine centre:** A regionally commissioned centre with the experience and expertise for managing complicated twin and triplet pregnancies.

- **Zygosity:** Pregnancies are either monozygous (arising from one fertilised egg) or dizygous (arising from two separate fertilised eggs). Monozygous twins are identical; dizygous twins are non-identical.

6. Determining gestational age and chorionicity

4.1 Gestational Age

- Offer women with a twin or triplet pregnancy a first trimester ultrasound scan to estimate gestational age and determine chorionicity and amnionicity (ideally, these should all be performed at the same scan
- Estimate gestational age from the largest baby in a twin or triplet pregnancy to avoid the risk of estimating it from a baby with early growth pathology

4.2 Chrionicity and Amnionicity

- Determine chorionicity and amnionicity at the time of detecting a twin or triplet pregnancy by ultrasound using:
- the number of placental masses
- the presence of amniotic membrane(s) and membrane thickness
- the lambda or T-sign.
- Assign nomenclature to babies (for example, upper and lower, or left and right) in a twin or triplet pregnancy, and document this clearly in the woman's notes to ensure consistency throughout pregnancy.

4.2.1. Presentation after 14+0 weeks

- If a woman with a twin or triplet pregnancy presents after 14^{+0} weeks, determine chorionicity and amnionicity at the earliest opportunity by ultrasound using all of the following:
  - the number of placental masses
  - the presence of amniotic membrane(s) and membrane thickness
  - the lambda or T-sign
  - discordant fetal sex.
- If it is not possible to determine chorionicity or amnionicity by ultrasound at the time of detecting the twin or triplet pregnancy:
  - seek a second opinion from a senior sonographer or refer the woman to a healthcare professional who is competent in determining chorionicity and amnionicity by ultrasound scan as soon as possible.
  - If it is difficult to determine chorionicity, even after referral (for example, because the woman has booked late in pregnancy), manage the pregnancy as a monochorionic pregnancy until proved otherwise.
  - Provide regular training so that sonographers can identify the lambda or T-sign accurately and confidently. Less experienced sonographers should have support from senior colleagues.
  - Training should cover ultrasound scan measurements needed for women who book after 14^{+0} weeks and should emphasise that the risks associated with twin and triplet pregnancy are determined by chorionicity and not zygosity.
  - Conduct regular clinical audits to evaluate the accuracy of determining chorionicity and amnionicity.
  - If transabdominal ultrasound scan views are poor because of a retroverted uterus or a high BMI, use a transvaginal ultrasound scan to determine chorionicity and amnionicity.

- Do not use 3-dimensional (3-D) ultrasound scans to determine chorionicity and amnionicity.

7. General Care: Information and Emotional Support

- Explain sensitively the aims and possible outcomes of all screening and diagnostic tests to women with a twin or triplet pregnancy to minimise anxiety

5.1 Diet, Lifestyle and Nutritional Supplements

- Give women with a twin or triplet pregnancy the same advice about diet, lifestyle and nutritional supplements as in routine antenatal care.
- Be aware of the higher incidence of anaemia in women with a twin or triplet pregnancy compared with women with a singleton pregnancy.
- Perform a full blood count at 20 to 24 weeks to identify women with a twin or triplet pregnancy who need early supplementation with iron or folic acid.
- Repeat at 28 weeks as in routine antenatal care.

8. Antenatal Care (Appendix 1, Appendix 3, Appendix 4)

- Antenatal clinical care for women with a twin or triplet pregnancy should be provided by a nominated multidisciplinary team consisting of:
  - a core team of named specialist obstetricians, specialist midwives and sonographers, all of whom have experience and knowledge of managing twin and triplet pregnancies
  - an enhanced team for referrals, which should include: - a perinatal mental health professional
  - a women's health physiotherapist
  - an infant feeding specialist
  - a dietitian.

- Members of the enhanced team should have experience and knowledge relevant to twin and triplet pregnancies.
- Do not routinely refer all women with a twin pregnancy to the enhanced team but base the decision to refer on each woman's needs. Coordinate clinical care for women with a twin or triplet pregnancy to:
  - minimise the number of hospital visits
  - provide care as close to the woman's home as possible
  - provide continuity of care within and between hospitals and the community.

Women with a triplet pregnancy should be referred to the nearest Obstetric Unit with level 3 NICU facilities

- The core team should offer information and emotional support specific to twin and triplet pregnancies at their first contact with the woman and provide ongoing opportunities for further discussion and advice including:
  - antenatal and postnatal mental health and wellbeing
  - antenatal nutrition

- the risks, symptoms and signs of preterm labour and the potential need for corticosteroids for fetal lung maturation
- likely timing of birth and possible modes of birth
- breastfeeding
- parenting

6.1 Fetal Complications: Screening

- A healthcare professional with experience of caring for women with twin and triplet pregnancies should offer information and counselling to women before and after every screening test.
- Inform women with a twin or triplet pregnancy about the complexity of decisions they may need to make depending on the outcomes of screening, including different options according to the chorionicity and amnionicity of the pregnancy.

6.1.1 Screening for Chromosomal Conditions

- **Twin Pregnancy:** Offer women with a twin pregnancy information on and screening for Down's syndrome, Edwards' syndrome and Patau's syndrome as outlined in the NHS fetal anomaly screening programme
- **Triplet Pregnancy:** Before offering screening for Down's syndrome, Edwards' syndrome and Patau's syndrome, give women with a triplet pregnancy information about:
  - the greater likelihood of Down's syndrome, Edwards' syndrome and Patau's syndrome in triplet pregnancy
  - the different options for screening
  - the increased false positive rate of screening tests in triplet pregnancy
  - their greater likelihood of being offered invasive testing
  - their greater likelihood of complications of invasive testing
  - the physical risks and psychological implications in the short and long term relating to selective fetal reduction.
- Healthcare professionals who screen for Down's syndrome, Edwards' syndrome and Patau's syndrome in trichorionic triplet pregnancy should:
  - map the fetal positions
  - use nuchal translucency and maternal age to screen for Down's syndrome, Edwards' syndrome and Patau's syndrome when crown–rump length measures from 45.0 mm to 84.0 mm (at approximately 11^{+2} weeks to 14^{+1} weeks)
  - calculate the chance of Down's syndrome, Edwards' syndrome and Patau's syndrome for each fetus.

- Refer women with a dichorionic and monochorionic triplet pregnancy who want to have screening for Down's syndrome, Edwards' syndrome and Patau's syndrome to a tertiary level fetal medicine centre.
- Do not use second trimester serum screening for Down's syndrome in triplet pregnancies.
- Refer women with any type of triplet pregnancy who have a higher chance of Down's syndrome, Edwards' syndrome or Patau's syndrome (use a threshold of 1 in 150) to a fetal medicine specialist in a tertiary-level fetal medicine centre.

6.1.2 Screening for Structural Abnormalities

- Offer screening for structural abnormalities (such as cardiac abnormalities) in twin and triplet pregnancies as in routine antenatal care.
- Consider scheduling ultrasound scans in twin and triplet pregnancies at a slightly later gestational age than in singleton pregnancies and be aware that the scans will take longer to perform.
- Allow 45 minutes for the anomaly scan in twin and triplet pregnancies (as recommended by FASP).

- Allow 30 minutes for growth scans in twin and triplet pregnancies.

6.1.3. Screening for Preterm Birth

- Explain to women and their family members or carers (as appropriate) that:
  - they have a higher risk of spontaneous preterm birth than women with a singleton pregnancy
  - this risk is further increased if they have other risk factors, such as a spontaneous preterm birth in a previous pregnancy.
  - Do not use fetal fibronectin testing alone to predict the risk of spontaneous preterm birth in twin and triplet pregnancy.
  - Do not use home uterine activity monitoring to predict the risk of spontaneous preterm birth in twin and triplet pregnancy.
  - Combining cervical length and fFn/ Partosure may be helpful

6.1.3 Screening for Fetal Growth Restriction and Feto-fetal Transfusion Syndrome in the First Trimester

- Do not offer women with a twin or triplet pregnancy screening for fetal growth restriction or feto-fetal transfusion syndrome in the first trimester.
- Do not use abdominal palpation or symphysis–fundal height measurements to monitor for fetal growth restriction in a dichorionic twin or trichorionic triplet pregnancy.
- At each ultrasound scan from 24 weeks, offer women with a dichorionic twin or trichorionic triplet pregnancy diagnostic monitoring for fetal weight discordance using 2 biometric parameters and amniotic fluid levels.
- To assess amniotic fluid levels, measure the deepest vertical pocket (DVP) on either side of the amniotic membrane.
- Continue monitoring for fetal weight discordance at intervals that do not exceed:
  - 28 days for women with a dichorionic twin pregnancy
  - 14 days for women with a trichorionic triplet pregnancy.

- Calculate and document estimated fetal weight (EFW) discordance for dichorionic twins using the formula below:
  - (EFW larger fetus − EFW smaller fetus) ÷ EFW larger fetus

- Calculate and document EFW discordance for trichorionic triplets using the formula below:
  - (EFW largest fetus − EFW smallest fetus) ÷ EFW largest fetus and
  - (EFW largest fetus − EFW middle fetus) ÷ EFW largest fetus

- Increase diagnostic monitoring in the second and third trimesters to at least weekly, and include doppler assessment of the umbilical artery flow for each baby, if:
  - there is an EFW discordance of 25% or more and/or
  - the EFW of any of the babies is below the 10th centile for gestational age.
- Refer women with a dichorionic twin or trichorionic triplet pregnancy to a tertiary level fetal medicine centre if there is an EFW discordance of 25% or more and the EFW of any of the babies is below the 10th centile for gestational age because this is a clinically important indicator of selective fetal growth restriction.

6.2 Diagnostic Monitoring for Complications of Monochronicity:

- A monochorionic twin or triplet pregnancy is one in which any of the babies share a placenta and a chorionic (outer) membrane. This includes monochorionic twins and dichorionic and monochorionic triplets.
- Offer women simultaneous monitoring for twin to twin transfusion syndrome, fetal growth restriction and advanced-stage twin anaemia polycythaemia sequence (TAPS) at every ultrasound assessment to monitor effectively for all complications of monochorionicity.
- Explain that the relative likelihood of each complication changes with advancing gestation but that they can all occur at any gestational age.

6.3 Feto-fetal Transfusion

- Offer diagnostic monitoring for twin to twin transfusion syndrome to women with a monochorionic twin or triplet pregnancy. Monitor with ultrasound every 14 days from 16 weeks until birth.
- Use ultrasound assessment, with a visible amniotic membrane within the measurement image, to monitor for twin to twin transfusion syndrome. Measure the DVP depths of amniotic fluid on either side of the amniotic membrane.
- Increase the frequency of diagnostic monitoring for feto-fetal transfusion syndrome in the woman's second and third trimester to at least weekly if there are concerns about differences between the babies' amniotic fluid level (a difference in DVP depth of 6 cm or more). Include doppler assessment of the umbilical artery flow for each baby.
- Refer the woman to a tertiary level fetal medicine centre if feto-fetal transfusion syndrome is diagnosed, based on the following:
  - the amniotic sac of 1 baby has a DVP depth of less than 2 cm and the amniotic sac of another baby has a DVP depth of:
    - over 6 cm before 20^{+0} weeks of pregnancy or
    - over 10 cm from 20^{+0} weeks.
- Refer the woman to her named specialist obstetrician for multiple pregnancy in her second or third trimester for further assessment and monitoring if:
  - the amniotic sac of 1 baby has a DVP depth in the normal range and the amniotic sac of another baby has a DVP depth of:
  - less than 2 cm or 6 cm or more.

6.4 Fetal Growth Restriction in Monochorionic Pregnancy

- Do not use abdominal palpation or symphysis–fundal height measurements to monitor for fetal growth restriction in women with a monochorionic twin or triplet pregnancy.
- At each ultrasound scan from 16 weeks, offer women with a monochorionic twin or triplet pregnancy diagnostic monitoring for fetal weight discordance using 2 biometric parameters (in addition to amniotic fluid level assessment).
- To assess amniotic fluid levels, measure the DVP on either side of the amniotic membrane.
- Continue monitoring women with a monochorionic twin or triplet pregnancy for fetal weight discordance at intervals that should **not** exceed 14 days.
- Calculate and document EFW discordance in monochorionic twins using the formula below:
  - (EFW larger fetus − EFW smaller fetus) ÷ EFW larger fetus
- The named specialist obstetrician should review the estimated fetal weights of dichorionic and monochorionic triplets and calculate EFW discordance based on their understanding of the implications of chorionicity.
- Increase diagnostic monitoring in the second and third trimesters to at least weekly, and include doppler assessment of the umbilical artery flow for each baby, if:
  - there is an EFW discordance of 25% or more and/or
  - the EFW of any of the babies is below the 10th centile for gestational age.
- Refer women with a monochorionic twin or triplet pregnancy to a tertiary level fetal medicine centre if there is an EFW discordance of 25% or more and the EFW of any of the babies is below the 10th centile for gestational age because this is a clinically important indicator of selective fetal growth restriction.

6.5 Twin Anaemia Polycthemia Sequence (TAPS)

- Refer to tertiary unit
- Offer weekly ultrasound monitoring for TAPS from 16 weeks of pregnancy using middle cerebral artery peak systolic velocity (MCA-PSV) to women whose pregnancies are complicated by:
  - Twin to twin transfusion syndrome that has been treated by fetoscopic laser therapy or
  - selective fetal growth restriction (defined by an EFW discordance of 25% or more and an EFW of any of the babies below the 10th centile for gestational age).
- For women with a monochorionic pregnancy showing any of the following:
  - cardiovascular compromise (such as fetal hydrops or cardiomegaly)
  - unexplained isolated polyhydramnios
  - abnormal umbilical artery
- Refer to tertiary unit
- Perform ultrasound MCA-PSV measurements to help detect advanced-stage TAPS, and seek management advice immediately from a tertiary level fetal medicine specialist.

6.6 Preventing Preterm Birth

- **DO NOT** offer intramuscular progesterone to prevent spontaneous preterm birth
- **DO NOT** offer the following interventions (alone or in combination) **ROUTINELY** to prevent spontaneous preterm birth in women with a twin or triplet pregnancy:
  - arabian pessary

- bed rest
- cervical cerclage
- oral tocolytics

6.6.1 Corticosteroids

- Inform women with a twin or triplet pregnancy of their increased risk of preterm birth and about the benefits of targeted corticosteroids.
- Do not use single or multiple untargeted (routine) courses of corticosteroids in twin or triplet pregnancy.
- Inform women that there is no benefit in using untargeted administration of corticosteroids.

6.7 Maternal Complications

- Measure blood pressure and test urine for proteinuria to screen for hypertensive disorders at each antenatal appointment in a twin and triplet pregnancy.
- Advise women with a twin or triplet pregnancy to take 150mg aspirin at night from 11 weeks until 36 weeks gestation if they have 2 or more of the risk factors in line with Health Board Guidance

7 Indications for Referral to a Tertiary Level Fetal Medicine Centre

See a Consultant opinion for:

- All triplet pregnancies
- pregnancies with a shared amnion:

  - monochorionic monoamniotic twins - dichorionic diamniotic triplets
  - monochorionic diamniotic triplets
  - monochorionic monoamniotic triplets

- Pregnancies complicated by any of the following:
  - Fetal weight discordance (of 25% or more) and an EFW of any of the babies below the 10th centile for gestational age
  - Fetal anomaly (structural or chromosomal)
  - Discordant fetal death
  - Twin to twin transfusion syndrome
  - Twin reverse arterial perfusion sequence (TRAP)
  - Conjoined twins or triplets Suspected TAPS

8 Intrapartum Care (Appendix 2)

- Intrapartum care for women with a twin or triplet pregnancy should be provided by a multidisciplinary team of obstetricians and midwives who have experience and knowledge of managing twin and triplet pregnancies in the intrapartum period.
- From 24 weeks in a twin or triplet pregnancy, discuss with the woman (and her family members or carers, as appropriate) her plans and wishes for the birth of her babies.

- Provide information that is tailored to each woman's pregnancy, taking into account her needs and preferences.
- Revisit these conversations whenever clinically indicated and whenever the woman wants to ensure the following has been discussed by 28 weeks at the latest:
  - place of birth and the possible need to transfer in case of preterm birth
  - timing and possible modes of birth
  - analgesia during labour (or for caesarean birth)
  - intrapartum fetal heart monitoring
  - management of the third stage of labour.

8.1 Timing of Birth: Antenatal Information

- Explain to women with a twin pregnancy that about 60 in 100 twin pregnancies result in spontaneous birth before 37 weeks.
- Explain to women with a triplet pregnancy that about 75 in 100 triplet pregnancies result in spontaneous birth before 35 weeks.
- Explain to women with a twin or triplet pregnancy that spontaneous preterm birth and planned preterm birth are associated with an increased risk of admission to a neonatal unit.
- Explain to women with an uncomplicated dichorionic diamniotic twin pregnancy that:
  - planned birth from 37^{+0} weeks does not appear to be associated with an increased risk of serious neonatal adverse outcomes and
  - continuing the pregnancy beyond 37^{+6} weeks increases the risk of fetal death.

- Explain to women with an uncomplicated monochorionic diamniotic twin pregnancy that:
  - planned birth from 36^{+0} weeks does not appear to be associated with an increased risk of serious neonatal adverse outcomes and
  - continuing the pregnancy beyond 36^{+6} weeks increases the risk of fetal death.

- Explain to women with an uncomplicated monochorionic monoamniotic twin pregnancy that planned birth between 32^{+0} and 33^{+6} weeks does not appear to be associated with an increased risk of serious neonatal adverse outcomes.
- Also explain that:
  - these babies will usually need to be admitted to the neonatal unit and have an increased risk of respiratory problems
  - continuing the pregnancy beyond 33^{+6} weeks increases the risk of fetal death
- Explain to the woman with a triplet pregnancy that delivery in a level 3 Obstetric Unit with NICU facilities is advised

8.2 Planned Birth

- Offer planned birth at 37 weeks to women with an uncomplicated dichorionic diamniotic twin pregnancy.
- Offer planned birth as follows, after a course of antenatal corticosteroids has been considered:

  - 36 weeks for women with an uncomplicated monochorionic diamniotic twin pregnancy
  - between 32^{+0} and 33^{+6} weeks for women with an uncomplicated monochorionic monoamniotic
- Offer an individual assessment to determine the timing of planned birth in women with any of the following:
  - a complicated twin or triplet pregnancy
- For women who **decline** planned birth at the timing recommended offer weekly appointments with the specialist obstetrician. At each appointment, offer an ultrasound scan and perform assessments of amniotic fluid level and doppler of the umbilical artery flow for each baby in addition to fortnightly fetal growth scans

8.3 Mode of Birth: Twin pregnancy: dichorionic diamniotic or monochorionic diamniotic

- 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 **all** of the following apply:
  - the pregnancy remains uncomplicated and has progressed beyond 32 weeks
  - there are no obstetric contraindications to labour
  - the first baby is in a cephalic (head-first) presentation
  - there is no significant growth discordance between the twins.

- Explain to women with an uncomplicated twin pregnancy that for women giving birth after 32 weeks:
  - more than a third of women who plan a vaginal birth go on to have a caesarean section
  - almost all women who plan a caesarean section do have one, but a few women have a vaginal birth before caesarean section can be carried out
  - a small number of women who plan a vaginal birth will need an emergency caesarean section to deliver the second twin after vaginal birth of the first twin.

- Offer caesarean section to women if the first twin is not cephalic at the time of planned birth.
- Offer caesarean section to women in established preterm labour between 26 and 32 weeks if the first twin is not cephalic.
- Offer an individualised assessment of mode of birth to women in suspected, diagnosed or established preterm labour before 26 weeks. Take into account the risks of caesarean section and the chance of survival of the babies.

8.3.1 Twin pregnancy: monochorionic monoamniotic

- Offer a caesarean section to women with a monochorionic monoamniotic twin pregnancy:
  - at the time of planned birth (between 32^{+0} and 33^{+6} weeks) or
  - after any complication is diagnosed in her pregnancy requiring earlier delivery or
  - if she is in established preterm labour, and gestational age suggests there is a reasonable chance of survival of the babies (unless the first twin is close to vaginal birth and a senior obstetrician advises continuing to vaginal birth).

8.3.2 Triplet pregnancy

- Offer a caesarean section to women with a triplet pregnancy:
  - after any complication is diagnosed in her pregnancy requiring earlier delivery and the clinical picture inhibits inutero transfer to an Obstetric Unit with level 3 NICU facilities or
  - if she is in established preterm labour, and gestational age suggests there is a reasonable chance of survival of the babies.

8.4 Fetal monitoring during labour in twin pregnancy: Antenatal Information

- By 28 weeks of pregnancy, discuss continuous cardiotocography with women with a twin pregnancy and their family members or carers (as appropriate) and address any concerns.
- Explain that the recommendations on cardiotocography are based on evidence from women with a singleton pregnancy because there is a lack of evidence specific to twin pregnancy or preterm babies.
- Explain to the woman that continuous cardiotocography is used to monitor the babies' heartbeats and her labour contractions, and that:
  - it allows simultaneous monitoring of both babies
  - it might restrict her mobility
  - normal traces show babies are coping well with labour; if traces are not normal, there will be less certainty about the babies' condition
  - it is normal to see changes to the fetal heart rate pattern during labour and this does not necessarily mean there is a problem
  - findings from the cardiotocograph are used to help make decisions during labour and birth, but these will also be based on her wishes, her condition and that of her babies.

8.4.1 Intrapartum Monitoring

- Offer continuous cardiotocography to women with a twin pregnancy who are in established labour and are more than 26 weeks pregnant.
- Perform a portable ultrasound scan when established labour starts, to confirm which twin is which, the presentation of each twin, and to locate the fetal hearts.
- Do not offer intermittent auscultation to women with a twin pregnancy who are in established labour and are more than 26 weeks pregnant.
- For women between 23^{+0} and 25^{+6} weeks of pregnancy who are in established labour, involve a senior obstetrician in discussions with the woman and her family members or carers about how to monitor the fetal heart rates
- When carrying out cardiotocography:
  - use dual channel cardiotocography monitors to allow simultaneous monitoring of both fetal hearts
  - document on the cardiotocograph and in the clinical records which cardiotocography trace belongs to which baby
  - monitor the maternal pulse electronically and display it simultaneously on the same cardiotocography trace.

  - Consider separating the fetal heart rates by 20 beats/minute if there is difficulty differentiating between them.

- Classify and interpret cardiotocography in line with the Health Board's Guideline on Intrapartum Electronic Fetal Monitoring using the Intrapartum CTG Sticker
- Fetal scalp stimulation should **not** be performed in twin pregnancy to gain reassurance after a cardiotocography trace that is categorised as 'pathological'.
- Ensure that a 'fresh eyes' review of the CTG is undertaken at least every two hours and more frequently if concerns arise
- At each systematic assessment, document which cardiotocography trace belongs to which baby
- Be aware of the possibility of monitoring the same baby twice. At each cardiotocography review, ensure that twin synchronicity is not occurring

- If abdominal monitoring is unsuccessful or there are concerns about synchronicity of the fetal hearts:
  - involve a senior obstetrician and senior midwife
  - apply a fetal scalp electrode to the first baby (only after 34 weeks and if there are no contraindications) while continuing abdominal monitoring of the second baby
  - perform a bedside ultrasound scan to confirm both fetal heart rates
  - if monitoring remains unsatisfactory, consider a caesarean section

- If the CTG is classified as suspicious or pathological during established labour:
  - involve the senior obstetrician and senior midwife
  - correct any reversible causes
  - apply a fetal scalp electrode to the first baby (only after 34 weeks and if there are no contraindications) while continuing abdominal monitoring of the second baby
  - assess whether an assisted vaginal birth is an option
  - if vaginal birth is not an option or cannot be achieved within 20 minutes, offer an immediate caesarean section

8.4.2 After the Birth of the First Baby

- Check time of delivery
- Ascertain position of twin 2 by USS
- Ensure that CTG is recording twin 2
- Perform external/internal Podalic version/ or an ECV if required. An experienced midwife/ obstetrician should establish and stabilise longitudinal lie
- If the fetal heart is normal:
  - Commence Oxytocin infusion and await contractions as per Oxytocin Administration Guideline
  - Careful palpation is essential to detect uterine hyperstimulation or a prolonged uterine contraction. In these circumstances the Oxytocin infusion rate should be stopped immediately and restarted **ONLY WHEN TWIN 2** has a reassuring FHR.

- If there are any concerns for fetal wellbeing assess to expedite delivery either by vaginal delivery or caesarean section
- If there are no immediate concerns, reassess progress of second stage for twin 2 assessing uterine activity, descent of presenting part, bleeding
- Continue to monitor the second baby using cardiotocography
- If there is 'suspicious' or 'pathological' cardiotocography, and vaginal birth cannot be achieved within 20 minutes, discuss performing a caesarean section with the woman and her family members or carers.
- After the birth of both babies, consider double clamping the cord to allow umbilical cord blood gases to be sampled.
- Ensure that the samples are correctly labelled for each baby
- Write the results in the Labour and Delivery Record, staple the results in the notes and record on Welsh PAS

8.5 Analgesia

- Discuss options for analgesia and anaesthesia with women (and their family members or carers, as appropriate), whether they are planning a vaginal birth or caesarean section. Ensure this discussion takes place by 28 weeks at the latest.
- Offer an epidural to women with a twin or triplet pregnancy who choose to have a vaginal birth. Explain that this is likely to:
  - improve the chance of success and optimal timing of assisted vaginal birth of all the babies
  - enable a quicker birth by emergency caesarean section if needed.
  - Offer regional anaesthesia to women with a twin or triplet pregnancy who are having a caesarean section.

8.6 Management of the Third Stage of Labour

- Assess the risk of postpartum haemorrhage in women with a twin or triplet pregnancy in the antenatal period and continue throughout labour and the third stage
- Offer each woman an individualised assessment of her risk of postpartum haemorrhage and explain that multiple pregnancy is a risk factor for increased blood loss at delivery.
- By 28 weeks of pregnancy, discuss options for managing the third stage of labour with women with a twin or triplet pregnancy.
- Do **not** offer physiological management of the third stage to women with a twin or triplet pregnancy
- Offer women with a twin or triplet pregnancy active management of the third stage.
  Explain that it is associated with a lower risk of postpartum haemorrhage.
  Consider active management of the third stage with additional uterotonics for women who have 1 or more risk factors (in addition to a twin or triplet pregnancy) for postpartum haemorrhage.

8.6.1 Blood Transfusion

- By 28 weeks of pregnancy, discuss with women with a twin or triplet pregnancy the potential need for blood transfusion, including the need for intravenous access.
- At the start of established labour in women with a twin or triplet pregnancy:

- Ensure that intravenous access is available so that prompt blood transfusion and intravenous fluids can be given if needed
- Take a maternal blood sample for a full blood count and group and save.
- Ensure that the appropriate blood transfusion is available for urgent administration.

9. Record Keeping

- All documentation and risk assessments must be recorded and filed in the All Wales Maternity Handheld Record and ancillary Health Board documentation.
- Complete the Multiple Pregnancy Antenatal Care Plan Proforma, Discussion and Plan for Delivery Proforma
- Care plans are to be inputted onto Welsh PAS.

10. Communication

- All pregnant women with a multiple pregnancy should be provided with accurate and accessible information about the risks associated with the condition.
- Women should be given the RCOG (2016) patient information leaflet and be given the opportunity to discuss this information:
- https://www.rcog.org.uk/en/patients/patient-leaflets/multiple-pregnancy-having-more-than-one-baby/
- Maternal wishes and concerns should be discussed and documented**.**

11. Auditable Standards

- Chorioncity and amnionicity of pregnancy determined using ultrasound and documented between 11+0 weeks and 13+6 weeks
- Care by multidisciplinary team
- Care plan recorded specifying the timing of appointments with the multidisciplinary team
- Monitoring and identification of fetal complications
- Women with complicated multiple pregnancy/ triplet pregnancy have a referral to a tertiary unit
- Completion of the Multiple Pregnancy Antenatal Care Proforma
- Completion of the Plan for Delivery, Place of Birth, Final Plan for Timing and Mode of Delivery
- Maternal pregnancy complications
- Gestation of birth
- Actual mode of delivery
- Maternal outcome
- Perinatal outcome
- Completion of inutero transfer to tertiary unit if fetal complications or preterm delivery anticipated < 34 weeks gestation

12 References

- NICE Twin and Triplet Pregnancy (NG137) 2019 https://www.nice.org.uk/guidance/ng137/resources/twin-and-triplet-pregnancy-pdf-66141724389829

9. APPENDIX 1: Multiple pregnancy antenatal care proforma

MULTIPLE PREGNANCY ANTENATAL CARE PROFORMA

Chorionicity & Amnionicity (state): **Fetal demise**: Twin 1/Twin 2 Date:

(To be determined between 11+2 weeks – 14+1 weeks) Gestation:

Twins DC/DA, MC/DA, MC/MA

Triplets TC/TA, DC/TA, MC/TA, DC/DA, MC/DA, MC/MA

Assessment at booking visit

BP _____/_____ Urinalysis…… MSU Y/N

VTE risk assessment completed Y / N

Discussion on Iron/Folic acid supplements Y/N

Other risk factors and plan of care *e.g. chronic hypertension/on aspirin, previous preterm birth*

Pre-eclampsia Risk Assessment (tick)

First pregnancy >12 weeks		Hypertensive disease during previous pregnancy	
Age ≥ 40 years		Type 1 or type 2 diabetes	
Pregnancy interval > 10 years		Chronic hypertension	
BMI ≥ 35 kg/m^2 at first visit		Chronic kidney disease	
Family history of pre-eclampsia -Mother/sister		Autoimmune disease such as SLE/APS	

If two or more of the above factors present advise prescription of aspirin 75mg daily	Prescribed: Y/N	Name	Role	Signed	Date

Patient information

Pathway of care into notes	Yes	No
'Multiple Pregnancy' leaflets/booklets given	Yes	No
Invitation to multiple antenatal classes by ….*date*	Yes	No

Initial discussion re delivery at booking visit	**Tick**
Preterm delivery (risk of preterm delivery, symptoms and signs of preterm labour, mode of delivery if preterm and possible outcomes of pre-term birth, including need to transfer) discussed by 24 weeks	
Delivery recommended at ……if still undelivered	

Initial thoughts re mode of delivery if twin 1 cephalic	Vaginal delivery	Caesarean section	Undecided

Signed: Name: Role: Date:

Next visit: Midwife:……weeks Medical:……..weeks

10. APPENDIX 2 Discussion and plan for delivery

DISCUSSION AND PLAN FOR DELIVERY		
Discussed (by 28 weeks gestation)		
• Risks and benefits of planned Caesarean section • Risks and benefits of vaginal twin delivery including use of analgesia • Process of vaginal delivery – delivery of the second twin – chance of CS for second twin, including management of 3rd stage labour • Need for continuous CTG monitoring in labour • Mode of delivery if very preterm • Induction of labour • Benefits of Corticosteroids • Use of 3rd stage syntocinon	**Date**	
	Gestation	
	Name	
	Signed	

PLACE OF BIRTH
Plan to deliver at *hospital name* advised against home delivery /MLU) Yes / No (please circle)
Individualised plan of care if birth outside *hospital name* …. main delivery suite being considered: Signed……Name…….

FINAL PLAN FOR TIMING AND MODE OF DELIVERY			
Timing of delivery - xx weeks gestation			
Induction of Labour	Gestation:	Date:	Induction declined – weekly scans arranged Yes / No
Planned CS	Gestation	Date:	Date of pre-operative assessment:
Corticosteroids	Date of first dose:	Date of second dose:	
Mode of delivery if admitted in labour spontaneous labour before planned delivery above (if twin 1 cephalic) – tick		Vaginal delivery:	Caesarean section:
Date agreed:	Gestation	Name	Signed

11. APPENDIX 3: ANTENATAL CARE PATHWAY FOR WOMEN WITH UNCOMPLICATED TWIN PREGNANCY (Dichorionic/Diamniotic)

The mother should have at least 2 appointments with specialist Obstetrician

GESTATION (WEEKS)	MDT CONTACT	ACTION	INFORMATION
6 - 11+6 weeks 1st contact with MMW	ANC – Reviewed by Consultant, sonographer, Multiples Midwife (Multi-disciplinary team MDT)	1st trimester USS dating scan to determine ➢ Gestation ➢ Chorionicity & amnionicity ➢ Major congenital malformation ➢ Nuchal translucency screening in line with NICE guidelines Scan to take place between 11+2 weeks and 14+1 weeks) Booking bloods Risk assessment as per booking form.	Parent information pack given on multiple pregnancy and antenatal nutrition discussed Relevant risk factors, Preterm delivery- NNU transitional care cots, Timing and mode of delivery. Fetal assessment scans Information on specialist classes for couples expecting multiple births. Specialist multiple support groups – TWINS TRUST, multiple birth foundation and local multiple groups.
16 weeks	MMW Venue: Midwife led clinic	BP and urinalysis Health Visitor referral	Discuss and record blood test results
20 weeks	ANC MDT review	Anomaly scan, (18-21 weeks) BP and urinalysis	Discuss anomaly scan report. Discuss parentcraft classes and book if wanted. Review scan for IUGR
24 weeks	ANC MDT review	Fetal assessment scan Bp and urinalysis Blood for FBC MAT B 1 (any time after 20 week scan)	Discuss scan report Assess for experienced enhanced team referral e.g. physio, mental health etc. Review scan for IUGR
26 weeks	MMW Midwife led clinic/home visit	BP and urinalysis Mental health assessment	Discuss importance of fetal movements and contact numbers. Discuss any anxieties - re pending life change, demands of two or more babies and coping strategies. The effects on relationships. Post-natal depression Review scan for IUGR Discuss timing and mode of delivery- give date for induction or elective LSCS
28 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis Bloods for Hb and antibodies Offer routine anti-D prophylaxis if required	Discuss scan report Discuss breastfeeding checklist Discuss use of syntocinon in 3rd stage labour
30 weeks	MMW Home visit	BP and urinalysis	Discuss labour, birth and coping strategies (birth plan) Breastfeeding /postnatal care information
32 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis Bloods for Hb	Discuss scan report Discuss Vitamin K prophylaxis Newborn screening tests

		Document plan in hand held notes	Discuss timing and mode of delivery- give date for induction or elective LSCS Discuss and agree birth plan
34 weeks	MMW Midwife led clinic	BP and urinalysis	Discuss fetal movements, signs of labour and contact numbers. Discuss any anxieties and postnatal depression. Advise re postnatal care provision from MMW
36 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis. Visit delivery suite if an option for the unit	Visit delivery suite, NNU and transitional care if wishes. Discuss scan report and any concerns Discuss Induction process or LSCS procedure Plan for delivery at 37 weeks if not delivered.
37 weeks	MMW Midwife led clinic	BP and urinalysis If planned delivery declined weekly appointments with scans with specialist obstetrician until delivered	Plan for delivery at 37 weeks if not delivered.

APPENDIX 4: ANTENATAL CARE PATHWAY FOR WOMEN WITH UNCOMPLICATED TWIN PREGNANCY (Monochorionic Diamniotic)

The mother should have at least 2 appointments with specialist Obstetrician

GESTATION (WEEKS)	MDT CONTACT	ACTION	INFORMATION
6 -11+6 weeks 1st contact with MMW	ANC – Reviewed by Consultant, sonographer, Multiples Midwife (Multi-disciplinary team MDT)	1st trimester USS dating scan to determine ➢ Gestation ➢ Chorionicity & amnionicity ➢ Major congenital malformation ➢ Nuchal translucency screening in line with NICE guidelines Scan to take place between between 11+2 weeks and 14+1 weeks) Booking bloods Risk assessment as per booking form.	Parent information pack given on multiple pregnancy and antenatal nutrition discussed Relevant risk factors, TTTS. Preterm delivery- NNU transitional care cots, Timing and mode of delivery. Fetal assessment scans Information on specialist classes for couples expecting multiple births. Specialist multiple support groups – TWINS TRUST, multiple birth foundation and local multiple groups.
16 weeks	ANC MDT review	BP and urinalysis, USS Health Visitor referral Fetal assessment scan	Discuss and record blood test results Reviews scan for TTTS and IUGR
18 weeks	ANC MDT review	BP and urinalysis, USS Fetal assessment scan	Reviews scan for TTTS and IUGR
20 weeks	ANC MDT review	Anomaly scan (18-21 weeks) BP and urinalysis Fetal assessment scan	Discuss anomaly scan report. Discuss parentcraft classes and book if wanted. Reviews scan for TTTS and IUGR
22 weeks	ANC MDT review	Fetal assessment scan BP and urinalysis USS	Reviews scan for TTTS and IUGR
24 weeks	ANC MDT review	Fetal assessment scan Bp and urinalysis Blood for FBC MAT B 1 (any time after 20 week scan)	Discuss scan report Assess for experienced enhanced team referral e.g. physio, mental health etc. Discussion on pre-term delivery and signs of early labour Reviews scan for TTTS and IUGR
26 weeks	ANC MDT review	Fetal assessment scan BP and urinalysis, fetal assessment scan Mental health assessment MAT B 1 Offer gestational diabetes test	Discuss importance of fetal movements and contact numbers. Discuss any anxieties - re pending life change, demands of two or more babies and coping strategies. The effects on relationships. Postnatal depression Reviews scan for TTTS and IUGR Discuss timing and mode of delivery- give date for induction or elective LSCS
28 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis Bloods for Hb and antibodies	Discuss scan report Discuss breastfeeding checklist

		Offer routine anti-D prophylaxis if required	Discuss use of syntocinon in 3rd stage labour
30 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis, fetal assessment scan	Discuss labour, birth and coping strategies (birth plan) Breastfeeding /postnatal care information
32 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis Bloods for Hb Document plan in hand held notes	Discuss Vitamin K prophylaxis Newborn screening tests
34 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis	Visit delivery suite, NNU and transitional care if wishes. Discuss fetal movements, signs of labour and contact numbers Discuss any anxieties and postnatal depression Advise re postnatal care provision from MMW. Offer course of corticosteroids. Plan for delivery at 36 weeks following course of steroids
36 weeks	ANC MDT Review	Fetal assessment scan BP and urinalysis If planned delivery declined weekly appointments with scans with specialist obstetrician until delivered	Discuss scan report and any concerns Discuss induction process or LSCS procedure and offer course of corticosteroids. Plan for delivery at 36 weeks following course of steroids

ANTENATAL CARE PATHWAY FOR WOMEN WITH A MULTIPLE PREGNANCY WITH A SHARED AMNION

Women with a twin or triplet pregnancy with a shared amnion should be referred to a consultant in a tertiary level fetal medicine centre and provided with an individualised care plan which includes timing of delivery

For an uncomplicated Monochorionic/Monoamniotic twin pregnancy, delivery is recommended between 32+0 and 33+6 weeks after a course of antenatal corticosteroids has been considered

For Women with a uncomplicated triplet pregnancy that involves a shared amnion the timing of birth will be decided and discussed with each woman individually