University Hospitals Sussex
NHS Foundation Trust

Multiple Pregnancy and Birth

Maternity Protocol: MP020

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Contents

IMPORTANT NOTE regarding this guideline

This guideline reflects the care of women with multiple pregnancy within the scope of USS and midwifery staffing capacity at this time at RSCH and PRH.
GAP analysis against NICE guidance shows that we are not in line with national guidance in relation to

- MDT clinics – there is currently no dedicated twins clinic – this is not possible currently due to lack of multiples midwife at either site, clinic rooms and USS capacity at RSCH
- USS schedule for MC twins – the national guidance for fortnightly scans for MC twins. Current US capacity allows for scans every 2-weeks until 24-weeks, and 4-weekly thereafter. This is the understanding that TTTS is more common at this stage of pregnancy. If there are any concerns for growth, these cases can be referred to the fetal medicine department for more frequent scan and review.
- No dedicated multiples sonographer – due to short staffing in USS it is felt that all sonographers should maintain skill in scanning multiples. This also decreases risk of RSI. In case of any concerns, direct referral to the fetal medicine team will be made.
- As part of the national drive and in order to align with national guidance, work is underway to review ANC capacity and staffing to provide a multiples clinic – this will be reflected in updated guidance.

Key Principles

A protocol is a set of measurable, objective standards to determine a course of action. Professional judgement may be use in the application of a protocol.

Scope

This protocol applies to pregnant women / people having twins and higher order pregnancies

Aim of Guideline To provide all staff with evidence-based guidance on the recommended care and management of multiple pregnancies. Facilitate the safety and continuity of care for pregnant women / people with multiple pregnancies.

Responsibilities

Midwives & Obstetricians:

- To access, read, understand and follow this guidance
- To use their professional judgement in application of this protocol

Management:

- To ensure the protocol is reviewed as required in line with Trust and National recommendations
- To ensure the protocol is accessible to all relevant staff

1. Definitions Used in Multiple Pregnancy

Type of pregnancy	Chorionicity and amnionicity
Dichorionic diamniotic twins (DCDA)	Both babies have 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.
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. Two of the babies share a placenta and amniotic sac.
Monochorionic triamniotic triplets	All 3 babies share 1 placenta. All 3 babies have separate amniotic sacs.
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.

1 Introduction

1.1 Multiple pregnancy is reported in 16 per 1000 births in the United Kingdom and account for 3 % live births. Multiple pregnancy is associated with increased perinatal morbidity and mortality.

1.2 Maternal risks in multiple pregnancy include hyperemesis, anaemia, pre-eclampsia, miscarriage at all gestations, stillbirth risk (see below regarding stillbirth at term), complications in labour and increased risk for caesarean section, and post-partum haemorrhage.

1.3 All multiple pregnancies share increased risks of preterm birth and fetal growth restriction in one or both babies.

1.4 The challenges of monochorionic pregnancies arise from the vascular placental anastomoses that are almost universal and connect the umbilical circulations of both twins: twin–twin transfusion syndrome (TTTS) and TAPS (Twin polycythaemia anaemia sequence) carrying a higher risk of mortality and morbidity than dichorionic twins.

2 Determining Chorionicity and Amnionicity and assigning nomenclature

2.1 Establishing chorionicity and amnionicity is essential for determining risk and appropriate ongoing management / antenatal care schedule.

2.2 All pregnant women / people with a multiple pregnancy must be offered an ultrasound examination at $11+^{2}$ -$14+^{1}$ weeks of gestation when crown rump Length (CRL) measures 45-84mm to determine viability, chorionicity and amnionicity, gestational age, major congenital malformations.

2.3 In spontaneous conceived pregnancies the larger CRL should be used to estimate gestational age.

2.4 Images must be stored on PACS and the chorionicity clearly documented on Viewpoint report before uploading to Badgernet.

2.5 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 (monochorionic) or T-sign (dichorionic)
- Assign nomenclature to babies (for example, upper and lower, or left and right) in a twin or triplet pregnancy, and document this clearly on Viewpoint before uploading to Badgernet, to ensure consistency throughout pregnancy.

2.6 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 to the fetal medicine team at RSCH as soon as possible.

2.7 If it still remains difficult to determine chorionicity, even after referral manage the pregnancy as a monochorionic pregnancy until proved otherwise.

2.8 If trans-abdominal ultrasound scan views are poor because of a retro-verted uterus or a high BMI, use a trans-vaginal ultrasound scan to determine chorionicity and amnionicity.

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

2.10 If is not possible to determine chorionicity by trans-abdominal or trans-vaginal ultrasound, a second option should be sought from fetal medicine consultant. If chorionicity is uncertain manage as monochorionic until proved otherwise.

2.11 Assigning nomenclature to fetuses, label the twin whose gestational sac was closest to the cervix at the 11–14-week scan as 'twin 1' and recorded the twins' orientation as lateral or vertical given their relative positions to each other (left/right or top/bottom, respectively).

3 For all Pregnant women / people with Multiple Pregnancies

3.1 Once a twin pregnancy is confirmed, pregnant women / people must be referred to the obstetric-led antenatal clinic by 16 weeks latest.

3.2 There is currently no dedicated 'multiples' clinic, however, where possible appointments with the obstetric team should be made on the same day as the ultrasound scan schedule to reduce multiple attendances to the department.

3.3 All triplet pregnancies should be referred directly to the fetal medicine team at RSCH for ongoing care.

3.4 On discovery of a multiple pregnancy a multiple birth 'welcome sheet' should be given to pregnant women / people that contains information about support groups, sources of information, multiple specific antenatal class (NB At time of publication of guideline (April 22), these information sources are undergoing review and will be updated accordingly.)

3.5 The combined screening test should be offered to all pregnant women / people with a twin pregnancy at the appropriate gestations *(see* MP002 Antenatal screening: Fetal Anomaly Screening Program*)*. Information regarding the screening specific to twin pregnancy will be discussed by the screening midwifery team.

4 Information sharing, Support Networks and Allied Healthcare Referral

4.1 All pregnant women / people should be involved in their care plans and decision making. All information discussed and shared should be clearly documented on Badgernet.

4.2 Although much of the care will be delivered through hospital antenatal clinics it is important that the pregnant woman / person is encouraged to also seethe community midwife or the maternity additional support team (MAST) for RSCH.

4.3 All members of the care team should offer emotional support specific to a multiple pregnancy at their first contact with the pregnant woman / person and provide ongoing opportunities for further discussion and advice.

4.4 Signpost all pregnant women / people with multiple pregnancy to support Groups:

4.4.1 Multiple Birth Foundation MBF

4.4.2 Twins Trust: twinstrust.org

4.4.3 Specific multiples class led by dedicated midwife – on Teams currently 2022).

4.4.4 Provide a 'Push' link for the BSUH multiple birth leaflet on Badgernet.

4.4.5 Referral should be made on an individual basis to the enhanced team:

- the perinatal wellbeing team
- women's health physiotherapist,
- infant feeding specialist

5 Scan appointments

5.1 Anomaly scan appointments for twin pregnancies is 1 hour.

5.2 Growth scan appointments are 30 minutes.

5.3 Estimated fetal weight (EFW) should be calculated using two or more biometric parameters from 20 weeks of gestation.

5.4 EFW discordance should be calculated and documented on the Viewpoint report.

5.5 Scans should be reviewed on the same day in clinic by the named consultant where possible, or as soon as possible.

5.6 If there are concerns with the scan and there is not a timely ANC appointment, the pregnant woman / person must be referred to DAU or MAU for obstetric review

6 Proposed Schedule of care

6.1 The schedule of care may alter according to other risk factors present prior to pregnancy – or risks which become apparent in pregnancy

6.2 Each woman / person pregnant with twins must be under consultant led care and should be reviewed after each scan with their named obstetrician

6.3 It is important that frequent obstetric care does not replace midwifery appointments – a full MDT approach is paramount.

6.4 Dichorionic Twins

6.4.1 Basic schedule for growth scans in uncomplicated DCDA pregnancy at 20, 24, 28, 32 and 36 weeks, to screen for growth restriction, alongside appointment with named obstetrician.

6.4.2 Refer to Appendix A for schedule of care for DC twins pregnancy

7 Monochorionic Twins

7.1 Basic schedule for fetal growth scans in uncomplicated monochorionic pregnancy every 2 weeks from 16 weeks until 24 weeks; and then every 4-weeks until delivery.

7.2 All scans should be followed by an antenatal appointment in a consultant led obstetric clinic to assess growth and exclude twin-to-twin transfusion syndrome (TTTS), or refer on as required.

7.3 All monochorionic twins pregnancies should be referred to the Evelina for a fetal cardiac scan around 16-weeks.

7.4 Refer to Appendix B for schedule of care for MC Twins

8 Initial Consultations and Care Planning

Risks of Multiple Pregnancy for the pregnant woman / person

8.1 At the first consultant-led clinic appointment the obstetrician should discuss the potential risks of multiple pregnancy for the pregnant woman / person (section 8.1.1) and risks for the babies (as listed in Table 2), based on chorionicity and amnionicity.

8.1.1 Maternal Risks

- Hyperemesis and other symptoms of pregnancy
- Anaemia
- Hypertensive diseases of pregnancy / pre-eclampsia
- Gestational Diabetes
- Increased risk of intervention in labour including caesarean section
- Post-partum haemorrhage

Table 2 :Fetal Risks in Multiple Pregnancy

DCDA	MCDA	MCMA
Preterm labour Fetal growth restriction of one or both babies Fetal Malposition Miscarriage / pregnancy loss at all gestations.	As per DC twins Plus: TTTS – see section 13 TRAPS – Twin reverse arterial perfusion sequence Selective fetal growth restriction TAPS – Twin anaemia polycythaemia sequence	As per others plus Cord entanglement

8.2 Inform the pregnant woman / person of the schedule of care (according to chorionicity, Appendices A / B); including scan appointments and appointments with the obstetric team in order to monitor closely through the pregnancy and manage any concerns which may arise.

8.3 Discuss the signs and symptoms of preterm labour and potential need for a course of antenatal steroids for fetal lung maturation. (See MP050 Caesarean Section and MP067 Pre-term Labour for information on antenatal steroids)

8.4 In a monochromic pregnancy, inform the pregnant woman / person of the signs and symptoms of twin to twin transfusion syndrome (TTTS) such as sudden increase in size of bump, shortness of breath, and to contact the DAU / MAU / triage line if concerned outside of already scheduled appointment.

8.5 Agree a plan of care and document on Badgernet which should be in line with the Schedule of Care Tables (Appendices A / B)

8.6 Advise pregnant women / people with a twin or triplet pregnancy to take low-dose aspirin daily from 12 weeks until 36-weeks gestation if they have 2 or more of the risk factors specified in NICE's guideline. (MP019 Hypertensive Disorders of Pregnancy)

8.7 Consider supplementation with ferrous sulfate, or other iron supplement. Perform a full blood count at 24-weeks to identify those who need iron or folic acid supplementation and repeat at 28 weeks as in routine antenatal care.

8.8 Recommend an oral glucose tolerance test at 26-28 weeks for gestational diabetes.

8.9 Monitor blood pressure and test urine for proteinuria at each antenatal appointment as per routine antenatal care.

9 Indications for referral to a fetal medicine / Harris Birthright Centre.

Referral for a consultant option from a, the level fetal medicine team +/- Harris Birthright should be made for:

- High chance from combined screening or any other indication for invasive testing
- MCMA twin pregnancies
- MCMA triplet pregnancies
- MCDA triplet pregnancies
- DCDA triplet pregnancies
- Pregnancies complicated by any of the following:
    - Estimated Fetal Weight EFW discordance > 20%
    - The EFW of any of the babies is below the 10th centile for gestational age
    - TTTS
    - Fetal Anomaly
    - Single twin death of a monochorionic twin

10 Ultrasound Review and Documentation

10.1 Serial ultrasound scans are recommended for the detection and management of fetal growth restriction, selective fetal growth restriction, fetal malposition, measurement of liquor volume, and complications specific to MC twin pregnancies (Section 12, 13)

10.2 All parameters HC, AC, FL, EFW should be displayed in growth chart format on the Viewpoint document before uploading to Badgernet.

10.3 Estimated fetal weight (EFW) should be calculated using two or more biometric parameters from 20 weeks of gestation.

10.4 EFW discordance should be calculated and documented on Viewpoint before the report is uploaded to Badgernet.

10.5 If discordance is not recorded by sonography team, the reviewing obstetrician must calculate and document this on Badgernet.

Formula for calculating percentage EFW discordance

$$\frac{\text{[larger twin EFW-smaller twin EFW]}}{\text{larger twin EFW}} \times 100$$

11 Selective Fetal Growth Restriction:

11.1 If there is an EFW discordance of ≥ 20%, or the EFW of any of the babies ≤10th centile for gestational age, refer to the fetal medicine consultant for increased diagnostic monitoring in the second and third trimesters to at least weekly, including umbilical artery Doppler assessment for each baby.

11.2 If there is an EFW discordance of ≥ 25% **and** the EFW of any of the babies is ≤10th centile for gestational age refer those with a DC twin pregnancy to a tertiary level fetal medicine centre – Harris Birthright . This is a clinically important indicator of selective fetal growth restriction.

11.3 FGR is growth discordance of > 20%.

11.4 Type 1 is growth discordance but positive diastolic velocities in both fetal umbilical arteries. Deliver 34 – 36 weeks.
Type II is growth discordance with absent or reversed end-diastolic velocities (AREDV) in one or both fetuses.
Type III is growth discordance with cyclical umbilical artery diastolic waveforms (positive followed by absent then reversed end-diastolic flow in a cyclical pattern over several minutes [intermittent AREDV]). Deliver Type II and III by 32 weeks.

12 Management of suspected Twin to Twin Transfusion Syndrome (TTTS)

12.1 MC pregnancies carry a 15% risk of developing TTTS.

12.2 Pregnant women / people with monochorionic twin pregnancies should be asked to report sudden increases in abdominal size or breathlessness to healthcare professionals in their secondary or tertiary centers as this may be a manifestation of TTTS.

12.3 All pregnant women/people with monochorionic pregnancies should be made aware of the following 'red flag' warning signs of TTTS and asked to call Triage if they become aware of any of them:

- Sudden abdominal distension.
- Abdominal pain.
- Sudden breathlessness.
- Inability to lie flat on their back.
- Reduced fetal movements

12.4 Staff should also be aware of the following clinical signs of TTTS:

- Rapidly increased abdominal girth.
- Inability to feel fetal parts on abdominal palpation.
- Ultrasound changes based on Quintero criteria (Table 3)

Table 3: Quintero staging for TTTS

Quintero Stage	Ultrasound / Doppler findings
I	Polyhydramnios DVP ≥ 8cm in recipient sac Oligohydramnios DVP ≤ 2cm in donor sac Visible bladder
II	As per Stage 1, but no visible bladder in donor
III	As per stage II, with abnormal Umbilical Doppler flow
IV	As per stage III, with hydrops of either twin
V	Fetal demise of one or both twins

12.5 Those with suspected TTTS must be referred to Harris Birthright as urgent where monitoring and treatment can be discussed, planned and carried out as required.

12.6 TTTS presenting before 26 weeks of gestation should be treated by fetoscopic laser ablation.

12.6.1 Anastomoses may be missed at laser ablation and TTTS can recur later in up to 14% of pregnancies treated by laser ablation. Thus surveillance should continue.

12.6.2 Laser ablation can be performed in mono- and dichorionic triplet pregnancies.

12.7 Some pregnant women/people request termination of pregnancy when severe TTTS is diagnosed and this should be discussed as an option.

12.8 Another option is to offer selective termination of pregnancy using bipolar diathermy of one of the umbilical cords, with inevitable sacrifice of that baby. This may be appropriate if there is severe hydrops fetalis in the recipient or evidence of cerebral damage in either twin

12.9 Twin anaemia-polycythaemia sequence (TAPS) should be screened for following fetoscopic laser ablation. TAPS is associated with highly discordant haemoglobin levels at birth from 'miniscule' artery–vein anastomoses.

12.10 Recommended delivery of monochorionic twin pregnancies previously complicated by TTTS should be between 34-36+6 weeks of gestation.

13 Timing of Delivery

13.1 Pregnant women / people with a multiple pregnancy should have a discussion by 28 weeks with their consultant and midwife about the timing of birth and the possible modes of delivery to support them in planning for their birth according to their preferences and priorities.

13.2 Pregnant women / people must be provided with information on the risks and benefits of the different modes of delivery to support them in their preferences and priorities. The lead consultant obstetrician for the pregnant woman / person should be involved in this discussion

13.3 **DCDA Twins: 37^{+0} and 37^{+6}**

13.3.1 In uncomplicated DCDA offer induction of labour (if vaginal delivery is planned) or caesarean section at 37 weeks gestation

13.3.2 Inform pregnant women / people that delivery at this gestation does not appear to be associated with an increased adverse outcome.

13.3.3 Inform pregnant women / people that continuing the pregnancy beyond 37+6 weeks is associated with an increased risk of fetal death.

13.3.4 Offer a course of antenatal steroids if the pregnant woman / person choice is to have an elective caesarean section – refer to MP050 Caesarean Section for information of steroids at term)

13.4 **MCDA Twins: 36^{+0} and 36^{+6}**

13.4.1 In uncomplicated MCDA twins offer induction of labour (if vaginal delivery is planned) or caesarean section from 36-weeks gestation after a course of antenatal steroids has been offered.

13.4.2 Inform pregnant women / people that delivery at this gestation does not appear to be associated with an increased adverse outcome.

13.4.3 Pregnant women / people should be aware that continuing the pregnancy beyond 36+6 weeks is associated with an increased risk of fetal death.

13.4.4 Offer a course of antenatal steroids if their choice is to have an elective caesarean section – refer to MP050 Caesarean Section for information of steroids at term)

13.5 **MCMA twins:**

13.5.1 Explain to those with an uncomplicated monochorionic monoamniotic twin pregnancy that planned birth by elective caesarean section between 32+0 and 34+0 weeks does not appear to be associated with an increased risk of serious neonatal adverse outcomes.

13.5.2 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

13.5.3 For pregnant women / people 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

14 Mode of birth

14.1 DCDA and MCDA Twins

14.1.1 Offer caesarean section to pregnant women / people if the first twin is not cephalic at the time of planned birth.

14.1.2 Pregnant women / people 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 (eg. placenta praevia)
- The first baby is in a cephalic (head-first) presentation
- There are no concerns for fetal growth restriction or significant size discordance between the twins.

14.1.3 Explain to those with an uncomplicated twin pregnancy that for pregnant women / people giving birth after 32 weeks:

- More than a third of pregnant women / people who plan a vaginal birth go on to have a caesarean section
- Almost all pregnant women / people who plan a caesarean section do have one, but a few pregnant women / people have a vaginal birth before caesarean section can be carried out
- a small number of pregnant women / people who plan a vaginal birth will need an emergency caesarean section to deliver the second twin after vaginal birth of the first twin (around 5%)

14.1.4 Offer caesarean section to pregnant women / people in established preterm labour between 26 and 32 weeks if the first twin is not cephalic.

14.1.5 Offer an individualised assessment of mode of birth to those 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.

14.2 MCMA Twins

14.2.1 Offer a caesarean section to pregnant women / people 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 the pregnancy requiring earlier delivery **or,**
- If the pregnant woman / person 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).

15 Discussions Regarding Vaginal Birth in Twin Pregnancy

15.1 Factors that need to be taken into consideration when planning the mode of birth include:

- gestation,
- the risks and benefits of different modes of delivery,
- pregnancy complications,
- presentation of leading twin,
- past obstetric/medical/surgical history
- maternal preferences and priorities

15.2 Discuss and document (on Badgernet) the following with the pregnant woman / person and their support partner when discussing vaginal delivery of twins:

15.2.1 It is recommended to deliver in an obstetric unit (i.e. not at home)

15.2.2 Increased chance for obstetric intervention in the delivery of twin pregnancy

15.2.3 Explain there is an increased risk of intervention required for the second twin including internal podalic version, and emergency caesarean to deliver the second twin after the vaginal birth of the first twin (National rate around quoted 5%).

15.2.4 In MC pregnancy, there can be acute transfusional events (which are neither predictable nor preventable) and therefore, despite regular monitoring, there may still be adverse perinatal outcomes.

16 Monitoring in labour

16.1 By 26 weeks of pregnancy discuss with the pregnant woman / person that it is rrecommended for continuous CTG in labour – this may require a scalp electrode the presenting twin.

16.2 Explain that the recommendations on CTG are based on evidence from pregnant women / people with a singleton pregnancy because there is a lack of evidence specific to twin pregnancy or preterm babies.

16.3 Explain that continuous CTG is used to monitor the babies' heartbeats and frequency of labour contractions, and that:

- It allows simultaneous monitoring of both babies
- It might restrict mobility
- Changes in the CTG are used to help make decisions during labour and birth, but these will also be based on their wishes, their condition and that of the babies.

17 Epidural in Labour

17.1 Discuss options for analgesia and anaesthesia with pregnant women / people (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.

17.2 Offer an epidural to pregnant women / people 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.

18 Third Stage of Labour

18.1 By 28 weeks of pregnancy, discuss options for managing the third stage of labour with those with a twin or triplet pregnancy.

18.2 Do not offer physiological management of the third stage to those with a twin or triplet pregnancy.

18.3 Recommend pregnant women / people with a twin or triplet pregnancy active management of the third stage (10 IU of oxytocin by IM injection) and that it is associated with a lower risk of postpartum haemorrhage and/or blood transfusion.

18.4 Consider active management of the third stage with additional uterotonics for pregnant women / people who have 1 or more risk factors (in addition to a twin or triplet pregnancy) for postpartum haemorrhage.

19 Care and Management of Labour & Vaginal Birth

19.1 Intrapartum monitoring

19.1.1 Recommend continuous cardiotocography when more than 26 weeks gestation and in established labour.

19.1.2 Perform a portable ultrasound scan when labour starts, to confirm which twin is which, the presentation of each twin, and to locate the fetal hearts.

19.1.3 Consider separating the fetal heart rates by 20 beats/minute on the CTG settings if there is difficulty differentiating between them.

19.1.4 A fetal scalp electrode (if no contraindications – see MP037 fetal monitoring) for Twin I is recommended if there is difficulty monitoring each fetal heart and ensure two separate heart rates are being detected.

19.2 For pregnant women / people between 23^{+0} and 25^{+6} weeks of pregnancy who are in established labour, involve a senior obstetrician in discussions with the pregnant woman / person

19.2.1 On admission inform the neonatologist, ANNP, anaesthetist and obstetric consultant on call.

19.2.2 Refer to the agreed plan made during the antenatal consultations.

19.2.3 Site a grey 16-gauge cannula once in labour, Obtain IV access and take an FBC and Group & Save.

19.2.4 If progress in labour is slower than expected for parity, escalate to the obstetric registrar for review.

19.2.5 Labour can be augmented with oxytocin *(*see MP041 Delay in Labour and Use of Oxytocin) after discussion with Consultant Obstetrician. This must be discussed with the birthing woman / person and clearly documented on Badgernet.

19.2.6 The delivery room should be prepared with 2 (or 1 per baby) resuscitaires, ultrasound machine, and IV infusion of oxytocin.

19.2.7 If there are no complications the birth can be in the birthing room on labour ward, if there are intrapartum complications recommend transfer to the theatre.

19.2.8 Keep the birthing woman / person and their birthing partner(s) updated and fully informed at all times.

20 Staff presence / awareness:

20.1 The middle grade obstetrician should be present at delivery and must have experience with twin deliveries - if not then the consultant obstetrician must be present.

20.2 The consultant obstetrician should be made aware if there is a woman / person having a vaginal birth of twins in the department. Where possible they should be informed and present in the department at the time of delivery.

20.3 Term twin deliveries can be conducted by experienced midwives if agreed by the middle grade (who must be present in the room for second stage and who remains the lead professional)

20.4 Neonatal support should be in attendance on labour ward for all twin deliveries.

20.5 The anaesthetist and theatre team should be aware of cases of twin delivery in the department and be alerted of concerns or signs that immediate operative intervention may be required.

21 Management of the second stage of labour

21.1 **Delivery of first twin**

21.1.1 If cephalic this delivery can be led by a midwife if all proceeds normally, including usual midwife care *(*MP035 Care of Pregnant Women / People in labour)

21.1.2 Optimum cord clamping as in a singleton delivery. Ensure clear identification of the first twin cord.

21.2 **Following delivery of first twin**

21.2.1 Active management of the delivery of twin 2 has been reported as the major factor in reducing morbidity and the need for caesarean section.

21.2.2 There is no definite evidence regarding the safe interval between the delivery of first and second twins when there is no suspected fetal compromise; but there are reports of an increase in poor outcome for the second twin if delayed beyond 45 minutes.

21.2.3 Continue external monitoring for Twin II and await descent of presenting part into pelvis

21.2.4 Middle grade obstetrician should:

- Identify lie and presentation of twin 2 using abdominal palpation/ vaginal examination/ultrasound.
- consider of external version (membranes intact) if not longitudinal position
- ARM should only be performed once the presenting part is in the pelvis, if unsuccessful consider internal podalic version or LSCS depending on clinical judgement

21.2.5 If there is 'suspicious' or 'pathological' CTG trace, and vaginal birth cannot be achieved within 20 minutes, discuss performing a caesarean section with the pregnant woman/person and birth partner(s)

21.2.6 Inform Consultant if twin 2 remains undelivered 30-minutes after birth of twin 1, and consider transfer to the operating theatre

21.2.7 Oxytocin should only be used if clinically indicated and not as a routine procedure

21.3 **If twin 2 is longitudinal and cephalic**

21.3.1 Provided the CTG trace of twin 2 is normal after 30mins there are no contractions consider ARM and/or the use of oxytocin infusion if SROM already occurred *(*see MP041 Delay in Labour and Use of Oxytocin) under the instruction of the obstetric middle grade.

21.3.2 Only perform ARM, with maternal / parental informed consent once presenting part is engaged in the pelvis.

21.3.3 Pushing should be recommenced when the presenting part is visible or there is an urge to push.

21.4 **If twin 2 is not longitudinal nor cephalic**

21.4.1 Obstetrician review and consideration of external version (membranes intact)

21.4.2 ARM should only be performed once the presenting part is in the pelvis

21.4.3 If unsuccessful consider internal podalic version or LSCS depending on clinical judgement.

21.5 **If twin 2 is longitudinal and breech**

21.5.1 If CTG normal and no other concerns about fetal wellbeing and the breech is frank/complete proceed with vaginal breech delivery

21.5.2 Refer to MP046 Breech and ECV

21.6 **After birth of second twin**

21.6.1 Two cord clamps are applied to mark the cord of the second twin.

21.6.2 Take cord gases if required and ensure samples are labeled correctly

21.6.3 All timings, care, decisions, staff present, lead health professional and observations as set out above should be documented on Badgernet.

21.7 3rd Stage of labour Management

21.7.1 Oxytocin 10iu IM should be recommended to be given IM after the birth of twin 2 (not twin 1) with maternal consent for active management of the 3rd stage

21.7.2 Post-partum oxytocin infusion should be continued after delivery because of the increased risk of PPH. *(MP053 Obstetric Haemorrhage)*

22 Placental histology

22.1 Each cord should be clearly identifiable as to cord belonging to twin 1 or 2. Two cord clamps are applied to mark the cord of the second twin.

22.2 Refer to the usual placenta histology form *(*MP035 Care of Pregnant Women / People in labour) for the histology referral form

23 Single Twin Demise

23.1 Pregnant women / people who suffer the loss of one twin should be referred to the bereavement midwife for support and ongoing care in the pregnancy.

23.2 Referral can also be made to the Twins Trust bereavement service : Bereavement Support Service (twinstrust.org)

23.3 When a twin is lost during the first trimester there is no influence on the outcome of the pregnancy.

23.4 The timing of fetal demise does not affect the incidence of neurodevelopmental delay, co-twin death or preterm birth in the surviving twin but is different between MCDA and DCDA sets.

Table 5 Outcome for survivor twin following co-twin demise in 2nd & 3rd trimesters: (Hillman et al Obstet Gynecol 2011;118:928-40

	DCDA	MCDA
Death of survivor twin	3%	15%
Preterm delivery	54%	68%
Neurodevelopmental delay	2%	26%

23.5 **Dichorionic Twin Pregnancy**

23.5.1 In the event of one twin demise, the woman / person should be immediately referred for review with a consultant.

23.5.2 On-going care in the pregnancy should be under the care of the bereavement consultant for their booked site – unless the woman / person prefers to stay under their named consultant.

23.5.3 Conservative management for the rest of the pregnancy is advised

23.5.4 Offer growth scans in the third trimester.

23.5.5 Timing of delivery should be determined by clinical indication and concerns for maternal / fetal wellbeing.

23.5.6 Vaginal delivery of the surviving co-twin is considered reasonable; there is no evidence base for delivery by caesarean section but the decision should be made according to the pregnant woman / person's preferences and priorities.

23.6 **Monochorionic Twin Pregnancy**

23.6.1 Monochorionic twins with one IUD should be referred to fetal medicine team or Harris Birthright for on-going care in the pregnancy.

23.6.2 Harm to the surviving twin after the death of its co-twin is believed to be caused by acute haemodynamic changes around the time of death, with the survivor losing part of its circulating volume into the circulation of the dying twin. This may cause transient or persistent hypotension and low perfusion, leading to the risk of ischaemic organ damage, notably but not exclusively, to the watershed.

23.6.3 Rapid delivery is usually unwise, unless at term, as fetal brain injury of the surviving twin occurs at the time of demise of the co-twin. Therefore, immediate delivery only adds prematurity to the possible hypotensive cerebral injury the surviving twin may have already sustained.

23.6.4 A conservative management policy is often appropriate, with serial fetal brain ultrasound imaging and a fetal cranial MRI scan planned, commonly 4 weeks after the 'sentinel event'.

23.6.5 Decisions around timing and mode of delivery should be made with the fetal medicine team in accordance with the ongoing monitoring and in discussion and consideration of their preferences.

24 Management of Triplet / Higher Order Multiple Pregnancies

24.1 On discovery of a higher order multiple pregnancy findings should be discussed with the pregnant woman / person.

24.2 Refer for an appointment with the fetal medicine team at the next available opportunity (latest by 16 weeks.) for their on-going scans, and care planning.

24.3 Specific documented discussion should include screening tests for chromosome and structural anomaly, embryo reduction (in higher order multiple pregnancies), antenatal care and timing and mode of delivery.

24.4 All discussions and the individual plan of care to be agreed with the pregnant woman / person and documented on Badgernet.

24.5 Regularity of scans and reviews to be determined according to risk with fetal medicine team – at least fortnightly

24.6 Explain to pregnant women / people with an uncomplicated trichorionic triamniotic or dichorionic triamniotic triplet pregnancy that continuing the pregnancy beyond 35+6 weeks increases the risk of fetal death

24.7 If uncomplicated triplets, elective caesarean section should be offered at 35 weeks.

24.8 The pregnant woman / person will be advised to deliver the babies at RSCH due to the potential risk that the babies will need to have support in TMBU.

24.9 A discussion and an appointment with the neonatal team will be arranged with the pregnant woman / person to discuss possible need for admission to TMBU.

24.10 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

24.11 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

24.12 Explain to pregnant women / people with a monochorionic triamniotic triplet pregnancy or a triplet pregnancy that involves a shared amnion that the timing of birth will be decided and discussed with each pregnant woman / person individually.

25 References

- National Institute for Health and Care Excellence (2019). Twin and Triplet pregnancy NICE guideline (NG137)
  www.nice.org.uk/guidance/ng137

- MBBRACE 2021
  MBRRACE-UK_Twin_Pregnancies_Confidential_Enquiry.pdf (ox.ac.uk)

- Twinstrust.org
  Twins Trust - We support twins, triplets and more...

- Twin Anemia Polycythemia Sequence - Welcome To TAPS Support

26 APPENDIX A: Schedule of care for DC twins

GESTATION (WEEKS)	MDT CONTACT	ACTION	INFORMATION
6 - 11+6 weeks 1st contact with MMW	Booking MW, USS and referrals as required	1st trimester USS dating scan as per Section X Booking bloods ./ CBS as usual Risk assessment as per booking on Badgernet	Parent information pack given on multiple pregnancy and antenatal nutrition discussed
16 weeks	ANC Consultant	BP and urinalysis Health Visitor referral	Parent information on multiple pregnancy as available on website Discuss antenatal nutrition Discuss and document - Relevant risk factors, (SECTION) - Aims for timing and mode of delivery (SECTION X) - Fetal assessment scans (SECTION X) Information on specialist classes for couples expecting multiple births. Specialist multiple support groups: TWINS TRUST, multiple birth foundation and local multiples groups
20 weeks	USS ANC Consultant	Anomaly scan, (18-21 weeks) BP and urinalysis MAT B 1 (any time after 20 week scan)	Review, discuss and document anomaly scan report.
24 weeks	USS + ANC Consultant	Fetal assessment scan Bp and urinalysis Blood for FBC	Discuss scan report Assess for experienced enhanced team referral e.g. physio, mental health etc. Review scan for IUGR
26 weeks	Midwife review	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 Discuss infant feeding checklist
28 weeks	USS	Fetal assessment scan	Discuss scan report and any

	ANC Consultant	BP and urinalysis Bloods for Hb and antibodies Offer routine anti-D prophylaxis if required	actions / referrals. Discuss timing and mode of delivery dependent on scan report, the preferences and priorities of the pregnant woman / person. Give date for induction or elective LSCS if decided on MOD
30 weeks	Midwife	BP and urinalysis	Discuss labour, birth and coping strategies (birth plan) Infant feeding /postnatal care information Discuss Vitamin K prophylaxis Newborn screening tests
32 weeks	USS ANC Consultant	Fetal assessment scan BP and urinalysis Bloods for Hb Document plan in hand held notes	Review, Discuss and document scan report Discuss and agree birth plan - timing and mode of delivery- Give date for induction or elective LSCS Discuss use of syntocinon in 3rd stage labour
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	USS ANC Consultant	Fetal assessment scan BP and urinalysis. Visit delivery suite if an option for the unit	Review, discuss and document scan report Finalise birth plan and explore any queries re Induction process or LSCS procedure
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.

27 APPENDIX B | Schedule of Care for MC Twins

GESTATION (WEEKS)	MDT CONTACT	ACTION	INFORMATION
6 -11+6 weeks 1st contact with MMW	Booking MW, USS and referrals as required	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 Information on specialist classes for couples expecting multiple births. Specialist multiple support groups – TWINS TRUST, multiple birth foundation and local multiple groups.
16 weeks	USS ANC consultant	BP and urinalysis, USS Health Visitor referral Fetal assessment scan Refer to Evelina for fetal cardiac scan	Discuss relevant risk factors as described in section X TTTS. Preterm delivery Timing and mode of delivery. Fetal assessment scans Discuss and record blood test results Reviews scan for TTTS and IUGR
18 weeks	USS ANC consultant	Fetal assessment scan BP and urinalysis,	Reviews scan for TTTS and IUGR
20 weeks	USS ANC consultant	Anomaly scan (18-21 weeks) BP and urinalysis MAT B 1 (any time after 20 week scan)	Reviews scan for TTTS and IUGR Discuss anomaly scan report. Discuss parentcraft classes and book if wanted.
22 weeks	USS ANC consultant	Fetal assessment scan BP and urinalysis USS	Reviews scan for TTTS and IUGR
24 weeks	USS ANC consultant	Fetal assessment scan Bp and urinalysis Blood for FBC	Reviews scan for TTTS and IUGR Assess for experienced enhanced team referral Discussion on pre-term delivery and signs of early labour

26 weeks	Midwife appointment	BP and urinalysis, Mental health assessment MAT B 1 Offer gestational diabetes test	Discuss 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
28 weeks	USS ANC consultant	Fetal assessment scan BP and urinalysis Bloods for Hb and antibodies Offer routine anti-D prophylaxis if required	Discuss scan report Discuss birth options
30 weeks	Midwife appointment	BP and urinalysis	Check bloods Discuss infant feeding checklist Discuss Vitamin K prophylaxis Newborn screening tests
32 weeks	USS ANC consultant	Fetal assessment scan BP and urinalysis Bloods for Hb Document plan in hand held notes	Review and discuss scan Finalise birth options – book IOL or LSCS as appropriate
34 -36 weeks	Midwife appointment ANC appointment	Fetal assessment scan 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. Offer course of corticosteroids. Plan for delivery at 36 weeks following course of steroids

28 Appendix C: ANTENATAL CARE PATHWAY FOR WOMEN WITH UNCOMPLICATED TRIPLET PREGNANCY (Triplets – Dichorionic/Triamniotic & Monochorionic/Triamniotic

GESTATION (WEEKS)	MDT CONTACT	ACTION	INFORMATION
6 -11+6 weeks 1st contact with MMW	USS / screening / fetal medicine	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. Refer to MAST	Parent information pack given on multiple pregnancy and antenatal nutrition discussed Relevant risk factors, TTTS. Preterm delivery-NNU transitional care 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	Fetal medicine team + MAST	BP and urinalysis, USS Health Visitor referral Fetal assessment scan	Discuss and record blood test results Reviews scan for TTTS and IUGR
18 weeks	Fetal medicine team + MAST	BP and urinalysis, USS Fetal assessment scan	Reviews scan for TTTS and IUGR
20 weeks	Fetal medicine team + MAST	Anomaly scan (18-21 weeks) BP and urinalysis Fetal assessment scan	Discuss anomaly scan report. Discuss parent craft classes and book if wanted. Reviews scan for TTTS and IUGR
22 weeks	Fetal medicine team + MAST	Fetal assessment scan BP and urinalysis USS	Reviews scan for TTTS and IUGR
24 weeks	Fetal medicine team + MAST	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	Fetal medicine team + MAST	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	Fetal medicine team + MAST	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	Fetal medicine team + MAST	Fetal assessment scan BP and urinalysis, fetal assessment scan	Discuss labour, birth and coping strategies (birth plan) Breastfeeding /postnatal care information
32 weeks	Fetal medicine team + MAST	Fetal assessment scan BP and urinalysis Bloods for Hb Document plan in hand held notes	Discuss Vitamin K prophylaxis New born screening tests
34 weeks	Fetal medicine team + MAST	Fetal assessment scan BP and urinalysis with specialist obstetrician If planned delivery declined weekly appointments with scans with specialist obstetrician until delivered	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 Discuss induction process or LSCS procedure and offer course of corticosteroids. Plan for delivery at 35 weeks for dichorionic/triamniotic triplets following course of steroids. Mono/tri to be individually assessed