

Management of Multiple Pregnancy Guideline

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Summary of document:

This guideline covers the care that should be offered to women with a Multiple 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.

The guidance below uses the term 'woman' (pronouns she or her) to describe individuals whose sex assigned at birth was female, whether they identify as female, male or non-binary. It is important to acknowledge it is not only people who identify as women for whom it is necessary to access women's health and reproductive services. Therefore, this should include people who do not identify themselves as women but who are pregnant or have recently given birth. Obstetric and Midwifery services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those individuals whose gender identify does not align with the sex that they were assigned at birth.

To be read in conjunction with:

NICE Twin and Triplet Pregnancy (NG137) 2019

<https://www.nice.org.uk/guidance/ng137/resources/twin-and-triplethttps://www.nice.org.uk/guidance/ng137/resources/twin-and-triplet-pregnancy-pdf-66141724389829pregnancy-pdf-66141724389829> - opens in new tab

NICE Guideline on Antenatal Care for Uncomplicated Pregnancies – opens in new tab

[648 - Threatened Preterm Labour Including Fetal Fibronectin and Tocolytic Clinical Practice Guideline](#) - opens in new tab

[667 - Induction of Labour Guideline](#) - opens in new tab

[1189 - Low Dose Aspirin in Pregnancy](#) - opens in new tab

[620 - Thromboprophylaxis in the Antenatal and Postpartum Period Guideline](#) - opens in new tab

[813 - Continuous Intrapartum Electronic Fetal Monitoring Guideline](#) - opens in new tab

[755 - All Wales Guideline: Prevention and Management of Postpartum Haemorrhage](#) - opens in new tab

Patient information:

RCOG, 'Multiple Pregnancy: Having More than One Baby' (2016)

<https://www.rcog.org.uk/en/patients/patient-leaflets/multiple-pregnancyhaving-more-than-one-baby> - opens in new tab

Owning group:

Maternity Written Control Documentation Group

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

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
TTTS	Twin-to-Twin Transfusion Syndrome
RCOG	Royal College of Obstetrics and Gynaecologists

Key points:

The care that should be offered to women with a Multiple Pregnancy, in addition to the routine care that is offered to all women during pregnancy.

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Scope

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

Aim

The aim of this document is to:

- Set out the evidence-based management of Multiple Birth pregnancies, with a programme of care.

Objectives

The aim of this document will be achieved by the following objectives:

- Guidance and Pathways for Antenatal care in Multiple Pregnancy
- Guidance for Care in Labour in Multiple Pregnancy

Introduction

Multiple pregnancies occur in approximately 1 in 60 pregnancies (i.e. 1.6 in every 1,000 women giving birth in 2015 had a multiple birth), and 3% of live-born babies are from multiple gestations. The number of multiple births is also increasing due to increasing maternal age and reproductive techniques. Multiple pregnancies carry higher maternal and fetal risks than singleton pregnancies, depending on their chorionicity, the number of amnions and the number of fetuses.

Aim

Important points

- The number of multiples and Chorionicity will affect place of antenatal care and birth.
- All multiple pregnancies should be booked under consultant led care and delivered in a consultant led unit.
- Routine Midwifery contact must continue throughout pregnancy.
- All Monochorionic twins must be referred to the Twin Clinic in GGH as soon as chorionicity is detected.
- As long as the pregnancy progresses normally Dichorionic twins may remain at the booking Hospital then should be referred to Glangwili General Hospital (GGH) for the 28 weeks Growth scan and Twin clinic appointment.
- Any higher order of multiple (i.e. Triplets or Quadruplets) must be referred to the nearest available consultant Led Unit with fetal Medicine input and Level 3 NNICU facilities.
- Glangwili General Hospital has SCBU facilities to care for twins born at or above 32 weeks.
- Delivery will be earlier than term depending upon type of multiple pregnancy.
- All multiple pregnancies increase the chance of pre-eclampsia.
- **Do not** use symphysis- fundal height measurements to monitor for fetal growth restriction.

Diagnosis of multiple pregnancy

Diagnosis may occur at an Early pregnancy scan or at the first trimester screening/ Dating scan.

In line with Antenatal Screening Wales guidance all women are offered an ultrasound examination between 11+1 and 14+1 weeks of gestation (CRL 45-84 mm)

Assessment should include

- Chorionicity and amnionicity
- Dating of pregnancy – be estimated by using the largest fetus in all multiple pregnancies.
- Labelling of twins.
- Offer the first trimester antenatal screening tests, in line with Antenatal Screening Wales recommendations.

Deciding chorionicity and amnionicity using the -

- Number and position of placental masses
- The presence of Lambda sign (Dichorionic Diamniotic/DCDA)
- The presence of T sign (Monochorionic Diamniotic/MCDA)
- The absence of visible amnion requires referral to fetal medicine to assess for Monochorionic Monoamniotic (MCMA) pregnancy.
- Assign non-clemature (i.e. system of naming) to the babies in relation to placental site and membrane e.g. Twin 1 anterior(lower) placenta, Twin 2 Anterior (upper) or posterior left etc.to ensure that future assessment (e.g. growth) will be assigned to appropriate fetus

Non-viable twin

All twins

When a non-viable embryo/fetus, a vanishing twin or a second empty scan are present up until 14 weeks care should be planned and provided as for a singleton pregnancy.

If one twin is non-viable or demised **after** 14 weeks a referral for consultation in the Twins clinic in GGH is recommended.

Late presentation

i.e. After 14 weeks, if unable to determine chorionicity manage pregnancy at monochorionic pregnancy until proven otherwise. Consider consultation/ referral to fetal medicine (UHW).

Triplet and higher order pregnancies

All Twin care pregnancies to be offered routine first trimester screening in line with Antenatal Screening Wales.

Antenatal screening of Multiple pregnancy for aneuploidy

All Twin care pregnancies to be offered routine first trimester screening in line with Antenatal Screening Wales.

Routes of referral

- DCDA twins, where pregnancy progresses normally, care for in booking hospital site and refer to GGH twin clinic for 28 weeks appointment.
- All Monochorionic pregnancies to be referred to the Twin Clinic in GGH as soon as confirmed as Monochorionic.
- Any higher order of multiple (i.e. Triplets or Quadruplets) must be referred to the nearest available consultant Led Unit with Fetal Medicine input and Level 3 NNICU facilities.

Antenatal Management and Care

Dichorionic Diamniotic Twins

Place of care

Where DCDA pregnancy progress normally see in booking hospital ANC by Consultant in clinic. Refer / Transfer care to GGH Twin clinic for 28 weeks appointment.

NOTE: Any deviation from normal pregnancy refer to GGH Twins clinic.

At time of First trimester scan

- Give RCOG Patient information leaflet” Multiple Pregnancy; having more than one baby”. Signpost to “Twins Trust” website .
- Aspirin if required (appendix)
- Recommend prophylactic iron supplementation. If unable to tolerate in first trimester then prescribe for second trimester.
- VTE assessment
- Anomaly scan at 20-22 weeks

DCDA Schedule of appointments in Twin clinic/ ANC

To be seen at 24,28,32 and 36 weeks with growth scans as a minimum.

- BP and urinalysis each visit
- Determine fetal weight discordance at each scan (see [appendix 2](#))
- Consider referral to Fetal Medicine if EFW discordance \geq (equal to or greater than) 20%
- FBC at 20 and 28 weeks
- Aim for delivery 37-38 weeks.
- Vaginal birth can be considered if first twin cephalic.

Discuss the increased risks associated with multiple pregnancies

- Preeclampsia
- Anaemia
- Need for Emergency LSCS with second twin.
- Advise managed third stage.
- Discuss benefits and risks of epidural in twin labour.

Fetal risks

- Increased risk of miscarriage/ preterm birth
- Intrauterine demise
- Discordance growth
- Risk of Locking twins if first twin not cephalic at time of delivery (hence advise for LSCS in these instances)
- Fetal monitoring in labour
- Timing of delivery
- Plan for labour

Monochorionic Twins

Place of care

- Place of birth dependent on amnionicity.
- Uncomplicated MCDA twins birth at GGH if over 32 weeks gestation.

- MCMA will deliver at appropriate Level 3 Tertiary Unit.

Monochorionic Diamniotic (MCDA)

Place of care

- Place of birth dependent on amnionicity.
- Uncomplicated MCDA twins birth at GGH if over 32 weeks gestation.
- MCMA will deliver at appropriate Level 3 Tertiary Unit.

Monochorionic Diamniotic (MCDA)

Care to be transferred to GGH Twin clinic after diagnosis of MCDA pregnancy

At time of First trimester scan

- Give RCOG Patient information leaflet” Multiple Pregnancy; having more than one baby”. Signpost to “Twins Trust” website.
- Aspirin if required
- Recommend prophylactic iron supplementation.
- VTE assessment

Schedule of care

- See from 16 weeks gestation in ANC at fortnightly interval.
- Anomaly scan at 20-22 weeks
- Counsel re: risks of twin pregnancy (as for DCDA twins) in addition to:
 - 10-15% risk of Twin To Twin transfusion syndrome (TTTS)
 - Advance stage Twins Anaemia Polycythaemia Syndrome (TAPS)
 - Risk if there is fetal demise of one twin.
 - Risk of fetal anomaly
 - Recommendation of delivery at 36 weeks in uncomplicated MCDA pregnancies

Monochorionic Monoamniotic Twins (MCDA)

- Refer to fetal Medicine to see at next available appointment
- Fetal Medicine will confirm diagnosis by assessing for cord entanglement
- Care will be undertaken by Fetal Medicine unless *specifically stated by FMU*
- Counselling by Fetal Medicine of risks of twin pregnancy(as for MCDA and DCDA) in addition to:
 - Increased risk of twin intrauterine demise secondary to cord entanglement
 - Risk of fetal anomaly
 - Recommendation of delivery by LSCA between 32-34 weeks in tertiary unit (Most units will use 32 weeks with steroid cover)

All Higher Order Multiples/ Conjoined twins/ Acardic Twin

- Refer to Fetal Medicine for next available consultant appointment for individualised plan of care.
- Fetal Medicine will then counsel with regards to general risks of multiple pregnancy
- Discuss selective/complete termination of pregnancy as part of management options.
- Delivery will be time similarly to MCMA pregnancies depending on factors such as growth etc.

Diagnostic Monitoring for complications of Monochorionicity

Feto-fetal Transfusion syndrome (TTTS)

Monitor with ultrasound every 14 days from 16 weeks until birth.

- On scan, with a visible amniotic membrane within the measurement image, measure the deepest vertical pool (DVP) for each baby.
- Refer to Fetal Medicine if feto-fetal transfusion syndrome is suspected where:

The amniotic sac of one baby has a DVP less than 2cm and other baby has a DVP depth of:

Over 6cm *before 20+0* weeks of pregnancy

OR

Over 10cm from 20+0 weeks.

Note: Where there is a Discordant DVP of over 4cm consider discussion with fetal medicine

- Assess membrane.
- Confirm presence of bladders and stomachs.

When Monochorionic twin growth discordance is 20% or more and EFW of babies is less than 10th centile or gestational age, refer to FMU as this is a clinical indicator of selective growth restriction.

Where one or both twins have EFW less than 3rd centile refer to Fetal Medicine.

Twin Anaemia – Polythemia sequence (TAPS)

- After laser ablation of placental vessels (in TTTS) 2-10% of Monochorionic twins will develop TAPS.
- It also occurs spontaneously in 5% of monochorionic twins, usually after 26 weeks but screening from 20 weeks (when available) is advised.
- There may be no noticeable difference in growth or amniotic fluid volumes.
- Monitoring for TAPS from 20 weeks of pregnancy using middle cerebral peak systolic velocity (MCA-PSV). If unable to obtain MCA PSV the sonographer should document on report.

Perform MCA -PSV and refer to Fetal Medicine where any evidence of:

- Fetal hydrops/ cardiomegaly (due to cardiovascular compromise)
- Unexplained isolated polyhydramnios
- Abnormal umbilical doppler

See [Appendix 8](#): MCA Vmax chart (Mari et al 2000)

Link to online calculator :

<https://www.perinatology.com/calculators/MCA.htm> - opens in new tab

Other Indications for referral to Fetal Medicine and Level 3 Tertiary Centre in Multiple pregnancy

- All triplet pregnancies
- Pregnancies with shared amnion (MCMA)
- Fetal weight discordance (20% or more) and an EFW of any baby of below 10th centile.
- Twin to Twin transfusion Syndrome (TTTS)
- Fetal Anomaly (structural or chromosomal)
- Discordant fetal death
- Acardic Twin /Twin Reverse Arterial Perfusion sequence (TRAP)
- TAPS

Preventing and screening for Preterm Birth

Offer a single cervical length scan between 16 and 20 weeks.

If the cervical length is equal or less than 25 mm offer progesterone 200mg vaginal capsules once a day at bedtime until 34 weeks gestation.

If a cervical length of 25 mm or less is found incidentally on a scan conducted between 20 and 24 weeks, offer progesterone PV until 34 weeks.

DO NOT OFFER the following interventions (alone or in combination) ROUTINELY to prevent spontaneous preterm birth in women with twin or higher multiple pregnancies:

- IM / PV Progesterone
- Cervical Cerclage
- Bed Rest
- Oral tocolytics

Corticosteroids

- DO NOT use single or multiple **untargeted** (routine) courses of corticosteroids as there are no benefits.
- If there are clinical indications for/of preterm delivery, then **targeted** corticosteroids may be of benefit.
- Ensure mother and partner are given the available patient information leaflet for the Corticosteroids to allow informed choice of accepting /declining corticosteroids.

Planning Birth

Discussions regards the birth must occur from 24 weeks. Revisit the conversation as and when clinically indicated or as requested by the woman. In all cases must have been discussed at the very latest by 28 weeks

- Place of Birth including transfer in case of preterm delivery
- Possible timings and Mode of birth
- Intrapartum fetal monitoring plus analgesia
- Offer active management of third stage.

Timing and Mode of Delivery

DCDA

- Uncomplicated DCDA Twins offer delivery at 37 weeks.
- Offer vaginal birth if meets criteria.(see fig 12.)

MCDA

- Uncomplicated MCDA Twins offer delivery at 36 weeks.
- Vaginal Birth does carry additional risk in MCDA twins. The RCOG guidelines allow vaginal birth in an uncomplicated MCDA and when criteria for vaginal birth has been met, ensure that the woman is informed that theoretical risk of up to 10% risk of acute twin to twin transfusion in labour.
- If unsuitable for vaginal birth or declines vaginal birth, deliver by planned caesarean with antenatal steroids as required.

Monochorionic (MCMA) Twins

MCMA pregnancy will be managed by FMU/ Tertiary Centre and where pregnancy is uncomplicated will be offered Planned caesarean birth at 32-34 weeks with antenatal steroids.

Triplet Pregnancy

Triplets will be managed by FMU/ Tertiary centre and where uncomplicated will be offered Planned caesarean birth at 35 weeks with antenatal steroids.

Complicated Twin or Triplet pregnancies

Complicated Twin Pregnancies will be individually assessed and managed. Depending on gestation and amnionicity will either be managed locally or by Fetal Medicine to decide on timing of planned Caesarean with antenatal steroids.

Complicated Triplets will be Individualised assessed by Fetal Medicine Team to decide on timing of Planned Caesarean with antenatal steroids.

Declining Planned Birth

When the woman is declining, or choosing not to accept, planned delivery:

- Explore reasons.
- Explain the risks of still birth associated with progressing past advised gestation for planned delivery.
- Offer weekly appointments with the obstetrician post advised delivery date.

At each appointment offer weekly AFI and dopplers and growth two weekly.

Before planned caesarean birth for any multiple pregnancy scan for presentation and confirm fetal heart for each baby and document in maternal hand held notes.

Requisites for Vaginal Birth

- The pregnancy remains uncomplicated and has progressed **past 32 weeks**. Vaginal birth could be considered before 32 weeks at the discretion of the consultant obstetrician and in partnership with the woman/couple motivated for vaginal birth.
- Where there are no obstetric contraindication to labour
- The first baby is cephalic presentation.
- There is less than 20% size discordance between the twins.

Intrapartum Care

- Provide intrapartum care for multiple pregnancy in GGH consultant unit as per delivery plan.
- Those women who attend GGH less than 32 weeks gestation at time of onset of labour or have complicated pregnancies and delivery is planned in a tertiary unit, will be assessed at time of admission. If suitable for transfer to appropriate planned place of delivery organise the in-utero transfer. If actively labouring or deemed unsuitable for transfer, then will require “neonatal” transfer to tertiary unit postdelivery.

Management of Labour

The Labour ward coordinator, on call obstetric registrar and tier 3 obstetrician, neonatal registrar and anaesthetist should be informed of the woman’s admission.

On admission

- Review by an obstetrician and cephalic presentation on leading twin be confirmed.
- Site 16G IV access
- Bloods for FBC and Group and Save, if not suitable for electronic access.
- Recommend continuous electronic fetal monitoring of both twins in labour.

Separate the CTG baseline (operates by offsetting baseline by 20 bpm) on one twin to clearly identify each twin.

If abdominal monitoring is unsuccessful, if there concerns about synchronicity of the fetal hearts or CTG is suspicious, 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.

Consider performing bedside ultrasound scan to confirm both fetal hearts if required.

If monitoring remains unsatisfactory consider caesarean delivery.

- Offer an early epidural to woman with a multiple pregnancy who chose to have a vaginal birth.
- Omeprazole stat dose of 40mg and then 20mg every 8 hours for prophylaxis against gastric acid aspiration.

Equipment

- The Birth room should be prepared for twin delivery
- Birthing bed with facility of lithotomy stirrups
- Instrumental delivery trolley with additional cord clamps (x6) and amnihook
- CTG twin monitor
- Ultrasound scan machine available in second stage
- 2 Resuscitaires
- 2 newborn cots
- Syringe driver pump
- Braun Pump
- Oxytocin as per induction of labour guideline for possible augmentation in the second stage. If this is required, start on 3mls/hr
- Syntometrine 1ml, or where Syntometrine is contraindicated use oxytocin (Syntocinon)5iu intravenously or 10iu intramuscularly.
- Oxytocin 40iu in 500mls normal saline for postpartum use. This should be kept outside the room until delivery of the second twin.

Second Stage of Labour

- Inform labour ward coordinator, obstetric registrar, anaesthetist and paediatrician. A second Midwife is required to assist with delivery.
- Management of the second stage of labour for the first twin in the same as for a singleton birth. If both **Dichorionic** twins are cephalic, they can be delivered by the midwife giving care, however an obstetrician and should be present in the room.
- Monochorionic twins should be delivered by an obstetrician.
- Syntometrine should NOT be given until after the delivery of the second twin.
- For Dichorionic twins, 1-2 minutes **deferred** cord clamping should be offered
- For Monochorionic twins, **immediate** cord clamping should be performed after delivery of the first twin.

- Check time of delivery of twin 1.

Delivery of Second Twin

- Midwife or obstetrician should immediately palpate the lie of twin 2 and ensure that it is longitudinal, stabilising as necessary. This may require a temporary cessation of any oxytocin infusion.
- Ultrasound should be available, if required, to assess the presentation of the second twin.
- Ensure that there is continuous electronic CTG monitoring of Twin 2.
- A malpresentation should be managed according to the experience of the most senior obstetrician available. Perform external/internal podalic version or an ECV if required. An experienced midwife or obstetrician should establish and stabilise longitudinal lie.
- If there is any concerns for fetal wellbeing assess to expediate the delivery either by vaginal delivery or caesarean section.

If the fetal heart is normal :

- Commence Oxytocin infusion as per and await contractions.
- Clinical palpation to monitor for hyperstimulation or prolonged uterine contraction. If this occurs stop infusion immediately and restart ONLY when twin 2 has a reassuring FHR.
- It is common for second twin to remain high until the contractions re-establish. Providing the FHR is normal and the baby is in a longitudinal lie with intact membranes, no action is required. Reassess progress of second stage of twin 2 for uterine activity, descent of pp and any bleeding. Clinical hands on stabilisation may be required throughout this time.
- Avoid ARM until presenting part descended to level of ischial spines or lower.

Intertwin delivery timings

- Acidosis in the second twin is more likely when the intertwin delivery/birth is greater than 30 minutes. Therefore both DCDA twins and MCDA twins should be restricted to 30 mins intertwin birth time.

Where there is a “suspicious” or “pathological” CTG and vaginal birth cannot be achieved within 20 minutes discuss performing caesarean section with woman.

- After delivery of Twin 2, apply a double clamp to both the placental and fetal ends of the cord to identify as Twin 2.
- Paired cord blood samples should be obtained from both babies for PH analysis.

Note: If monochorionic twins are delivered in Unit alert the paediatric team if there is a discordance in the fetal haemoglobin results as identified as Hb on cord blood samples.

Third Stage

- Offer /Advise active third stage
- Syntometrine 1ml (oxytocin/ syntocinon 5iu IV or 10iu IM if syntometrine is contraindicated) AFTER birth of last baby and before cord is clamped and cut
- Immediately after delivery of placenta and membranes commence IV infusion of 40iu oxytocin in 500ml normal saline at 125ml/hr via a Braun pump for 4 hours to reduce risk of PPH.
- Promptly complete perineal repair if required.

- Inspect placenta and membranes for completeness and confirm chorionicity and amnionicity. Send placenta/s to Pathology when fetus is SGA.

Auditable Standards

- Is the information and Counselling proforma present and completed in patients notes?
- Has it been documented that information has been provided to the woman on the risks and benefits of different modes of delivery?
- Has the plan been documented to agree the timings and place of birth?
- Was it clearly identified on the EFM trace which was Twin 1 and which was Twin 2?
- Was a suitably experienced Obstetrician available/ present during the second stage/ delivery and third stage of labour?
- Following delivery of the first twin was the lie of the second twin clearly identified?

References

- [ISUOG Practice Guidelines](#): Role of ultrasound in twin pregnancy (2016)
- [NICE Guideline \[NG137\]](#): Twin and triplet pregnancies (2019) SoR/BMUS Guidelines for Professional Ultrasound Practice. Revision 6, December 2021 168
- [NICE Quality standard \[QS46\]](#): Multiple pregnancy: twin and triplet pregnancies (updated 2019)
- [RCOG Green-top Guideline \[No.51\]](#): Monochorionic twin pregnancy, management (2016)

Appendix 1 – Screening for selective growth restrictions in twins

Fetal growth discordancy in EFW

To be calculated at each visit from 20 weeks onwards and if this exceeds 20% prompt referral should be made to the Fetal Medicine Unit, UHW.

Fetal Growth Discordancy %

Large twin EFW – Small twin EFW X 100 =%

Large twin EFW

Liquor volume should be assessed as deepest pool (each Twin) and not AFI in Multiple pregnancies.

Appendix 2 – Multiple Pregnancy Pre-eclampsia Risk Assessment

Multiple Pregnancy Pre-eclampsia Risk Assessment

Date.....

Twins: DCDA / MCDA/ MCMA

Triplets :.....

Addressograph:

ASPRIN IN MULTIPLE PREGNANCY

Asprin is prescribed following a risk factor assessment when women have either one high risk factor OR two or more moderate risk factors to reduce the risk of developing pre-eclampsia.

Multiple Pregnancy is a MODERATE risk factor therefore if ONE other factor is present prescribe 150mg as per guideline

HIGH RISK FACTORS (One /single indicator)	<i>Tick</i>	MODERATE RISK FACTORS (Two or more indicators)	<i>Tick</i>
Hypertension /pre-eclampsia in Previous pregnancy		Multiple Pregnancy	√
Chronic Renal Disease		Primigravid	
Autoimmune disease- Antiphospholipid syndrome		Maternal age >40 years	
Diabetes-insulin and non insulin dependent		Family history of pre-eclampsia	
Chronic Hypertension		BMI>35 at booking	
		Pregnancy interval >10years	

1) Dose: The use of 150mg has been shown to reduce the risk of severe onset pre-eclampsia by almost 60-80% when compared to placebo and also reduction in IUGR.

2) Duration: Commence at booking visit and prior to 16 weeks gestation to maximise effect. Aim to continue to 36-37 weeks gestation to allow platelet function to recover. Discontinue if any adverse reactions to aspirin or earlier delivery anticipated.

3) Contraindications: Known bleeding disorders (e.g. Von Willebrand), history of aspirin allergy or long term use of NSAIDS.

References: NICE Guideline 107 (2011)
TOG Vol 16 page 245-250 (2014)
ASPRE Trial NEJM (2017)

Signature

Print and File in hand held notes

Print and Place in Maternal Hand Held Notes

Appendix 3 – Monochorionic Diamniotic (MCDA) Pregnancy Care Pathway Proforma

EDD
Gravida Parity

Patient Name
DOB
Address

Initial Antenatal Clinic consultation

Undertaken bydate.....

Medical / Obstetric risk factors /significant history

Completed VTE assessment Yes / No

Discuss and Prescribe iron supplements / Folic acid.

Completed Pre-eclampsia Risk assessment Yes No

Asprin prescribed 150mg daily Yes/No

Patient given RCOG Patient information Leaflet “Multiple pregnancy: having more than one baby

Discuss:

- Plan of care for pregnancy

Discuss the increased risks associated with multiple pregnancies.

- Pre-eclampsia
- Anaemia

Fetal risks for multiple pregnancy

- Increased risk of miscarriage/ preterm birth
- Intrauterine demise
- Discordance growth

Fetal risks specifically for Monochorionic pregnancy

- 10-15% risk of Twin to Twin transfusion syndrome (TTTS)
- Advance stage Twins Anaemia Polycythaemia Syndrome (TAPS)
- Risk if there is fetal demise of one twin.
- Risk of fetal anomaly
- Recommendation of delivery at 36 weeks in uncomplicated MCDA pregnancies
- Possible referral to Fetal medicine team or transfer of care /delivery if complications arise (e.g. TTTS or preterm delivery less than 32 weeks)

24 weeks

At 24 weeks discuss:

- Timing of birth
- Plan for labour
- Modes of birth.
- Information leaflet Antenatal Corticosteroids
- Discuss benefits and risks of epidural in twin labour.
- Fetal monitoring in labour
- Possibility of need for Emergency LSCS with second twin.
- Risk of Locking twins if first twin not cephalic at time of delivery (hence advise for planned LSCS in these instances)
- Advise managed third stage.

Signature Date

28 weeks

- Revisit discussion undertaken at 24 weeks at then again at all following appointments and as required or as patient wishes.

Discussion and Final Plan for Timing and Mode of Birth if labour NOT spontaneous onset:

Uncomplicated MCDA: Birth by 36 weeks and to be born at GGH

Induction of Labour	Yes /NO	Date of IOL
Planned Caesarean Birth	Date	Date of Pre-op assessment
Antenatal Corticosteroids	Accepted / Declined	<u>Date first dose:</u>
		<u>Date second dose:</u>
Mode of birth if admitted in spontaneous labour prior to planned date above (and twin 1 cephalic)		Vaginal Birth Yes/No
		Planned Caesarean Yes /No
If planned birth /Induction by 36 weeks declined	Weekly scans /ANC review accepted	Yes / No
<u>Doctor Signature</u>		<u>Date</u>
<u>PRINT NAME</u>		<u>(file in hand held notes)</u>

Print and Place in Maternal Hand Held Notes

Appendix 4 – Dichorionic Diamniotic (DCDA) Pregnancy Care Pathway Proforma

EDD
Gravida Parity

Initial Antenatal Clinic consultation

Undertaken by
.....date.....

Medical / Obstetric risk factors /significant history

Completed VTE assessment Yes / No

Discuss and Prescribe iron supplements / Folic acid.

Completed Pre-eclampsia Risk assessment Yes No

Asprin prescribed 150mg daily Yes/No

Patient given RCOG Patient information Leaflet “Multiple pregnancy: having more than one baby

Signpost to Twins Trust website

Discuss:

- Plan of care for pregnancy

Discuss the increased risks associated with multiple pregnancies.

- Pre-eclampsia
- Anaemia

Fetal risks for multiple pregnancy

- Increased risk of miscarriage/ preterm birth
- Intrauterine demise
- Discordance growth
- Recommendation of delivery at 37-38 weeks in uncomplicated DCDA pregnancies
- Possible referral to Fetal medicine team / level 3 tertiary unit or transfer of care /birth if complications arise (e.g. preterm delivery <32 weeks)

24 weeks

At 24 weeks discuss:

Patient Name
DOB
Address

- Timing of birth
- Plan for labour
- Modes of birth.
- Information leaflet Antenatal Corticosteroids
- Discuss benefits and risks of epidural in twin labour
- Fetal monitoring in labour
- Possibility of need for Emergency LSCS with second twin.
- Risk of Locking twins if first twin not cephalic at time of delivery (hence advise for LSCS in these instances)
- Advise managed third stage.

Signature Date

28 weeks

Revisit discussion undertaken at 24 weeks at then again at all following appointments and as required or as patient wishes.

Discussion and Final Plan for Timing and Mode of Birth if labour NOT spontaneous onset:

Uncomplicated DCDA.

Birth by 37-38 weeks and to be born at GGH

Induction of Labour	Yes /N	Date of IOL
Planned caesarean Birth	Date	Date of Pre-op assessment
Mode of birth if admitted in spontaneous labour prior to planned date above (and twin 1 is cephalic presentation)	Vaginal Birth Yes/No	
	Planned Caesarean Yes /No	
If planned birth /Induction by 38 weeks is declined: Offer Weekly scans and ANC review.		Accepted: Yes / No
Doctor Signature:		Date:
PRINT NAME / Name stamp		
File in hand held notes		

Print and Place in Maternal Hand Held Notes

Appendix 5 – Twin Pregnancy Pathway Flow Chart for DCDA and MCDA

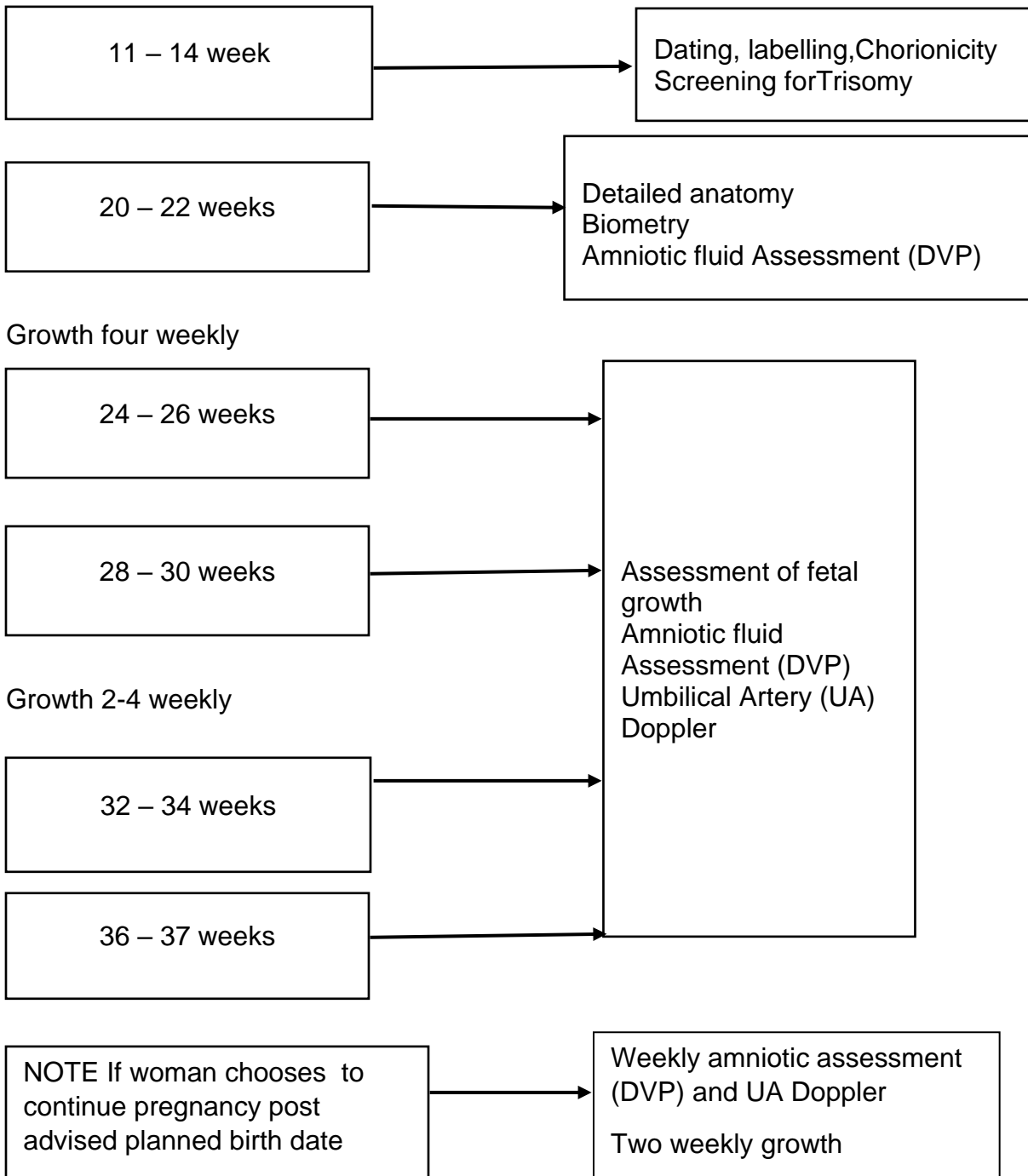
Twin Pregnancy Pathway <u>Flow Chart</u> for DCDA and MCDA		
DICHORIONIC DIAMNIOTIC (DCDA)	ALL Twins	MONOCHORIONIC DIAMNIOTIC (MCDA)
<p>As long as pregnancy remains normal Care and scans at booking hospital until third trimester.</p> <p>Growth scans commence at 24 weeks and repeated 4 weekly.</p> <p>Transfer care to GGH ANC for 28 weeks growth scan and antenatal clinic appointment.</p> <p>37-38 weeks Aim for birth</p>	<p>Consultant Led Care and birth in Consultant Led unit.</p> <p>ANC and USS at 11-13 weeks for viability, chorionicity, assigning non-clemature and First trimester screening.</p> <p>Discuss increased risks associated with multiple pregnancies and fetal risks.</p> <p>Give pregnancy information (RCOG) and signpost to websites.</p> <p>Monitor BP, Urinalysis at all antenatal contacts.</p> <p>Routine Midwife contact throughout pregnancy</p> <p>20 week Second Trimester Anomaly scan</p> <p>FBC at 20 weeks</p> <p>24 weeks Discuss timing and mode of birth. Revisit at each subsequent ANC appointment and as requested by the woman.</p>	<p>Transfer care of all Monochorionic Diamniotic pregnancy after diagnosis of Monochorionicity.</p> <p>Ultrasound surveillance for TTS, discordant growth and TAPS commences at 16 weeks and then repeated every two weeks throughout pregnancy. Request USS scan for growth, Umbilical Artery Doppler. Request Middle Cerebral Doppler from 20 weeks.</p> <p>NOTE: UA doppler between 16-20 weeks will be reported as Positive /absent/Reversed EDF(no PI values) NOTE: Between 20-23+6 weeks use Schaffer UA PI chart From 24 weeks use Intergrowth 21 UA PI chart</p> <p>36 weeks Aim for birth</p>

Note: Monochorionic Monoamniotic Twins and Higher order Multiple pregnancy to be referred and cared for by Fetal Medicine Consultant at Level 3 Tertiary Unit.

Reference: Hywel Dda Multiple Pregnancy Guideline

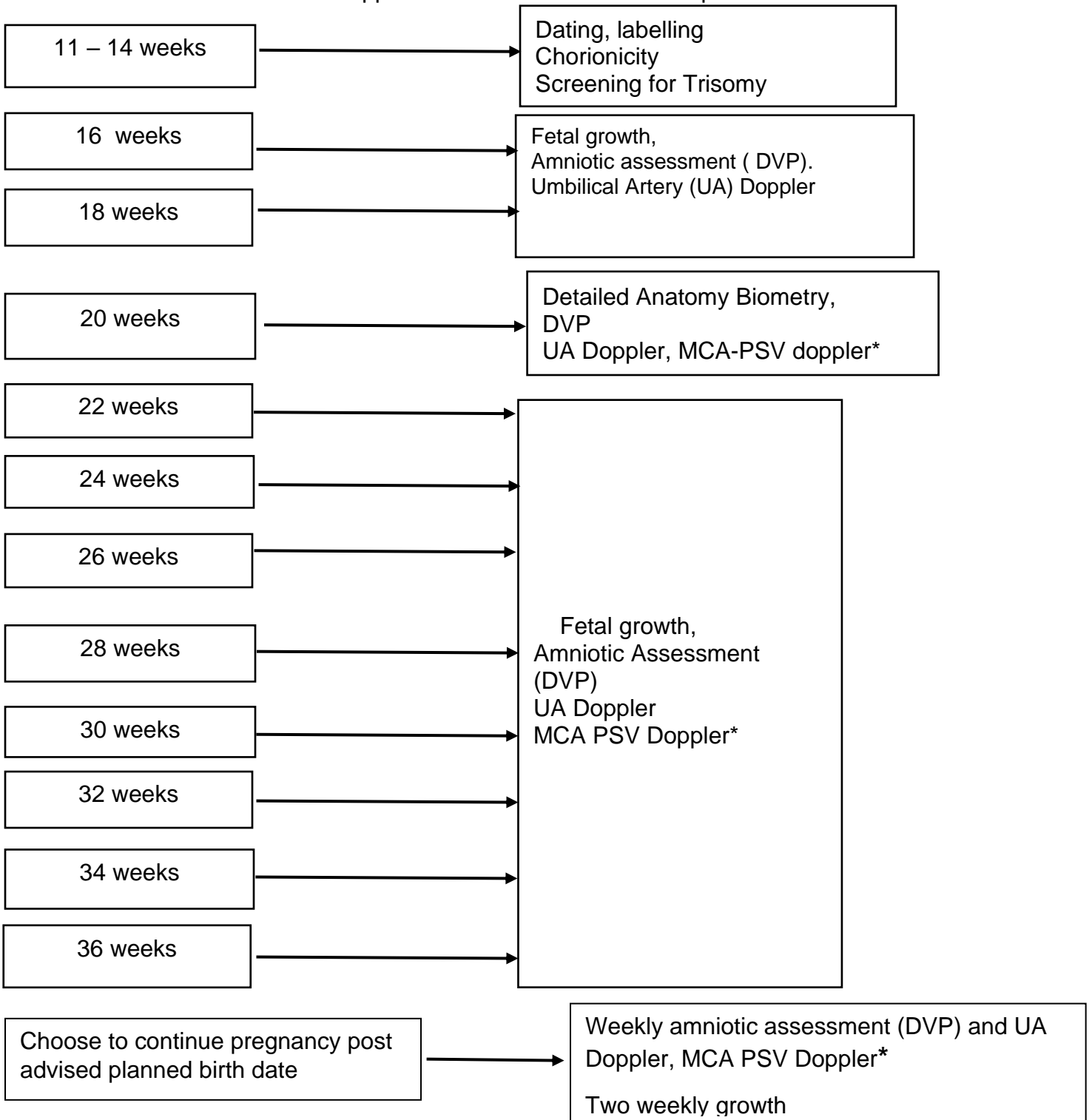
Print and Place in Maternal Hand Held Notes

Appendix 6 – Ultrasound Monitoring Pathway Charts in uncomplicated DICHORIONIC twin pregnancy



Appendix 7 – Ultrasound monitoring pathway in uncomplicated MONOCHORIONIC twin Pregnancy

* If unable to obtain MCA PSV Doppler document in ultrasound report



- Link to calculator <https://www.perinatology.com/calculators/MCA.htm> - opens in new tab

Appendix 8 – MCA Vmax Chart

Appendix 8: MCA Vmax Mari et al. New England Journal of Medicine 2000:342; 9-14
 (Place copy in patients notes)

