Guideline for the Management of the Small for Gestational Age (SGA) Fetus

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Policy on a Page: Key Messages

Aim:

This guideline has been developed to support clinical decision-making in the context small of gestational age (SGA) management.

Summary of key changes (for revised documents only)

- Alignment with contemporary practices and the Green-top Guideline No. 31 (RCOG, 2024).
- Updated SGA risk assessment pathways as per Appendix 3.
- Inclusion of antenatal surveillance pathways for SGA as per Appendix 4.

Key Requirements:

All women: GROW chart + booking risk assessment; ongoing reassessment required.

At risk (moderate/high): Start serial USS (EFW, UA Doppler, liquor) from 28w via Badgernet pathways.

Abnormal findings (EFW/AC <10th or reduced growth): Repeat scans ≥2 weeks apart + escalate to obstetric review; refer to fetal medicine if severe/early.

Timing of birth: Usually 39w (mild SGA), 37w (FGR/abnormal Doppler), earlier if severe; continuous CTG in labour.

Target Audience:

All staff working within Maternity services within Aneurin Bevan University Health Board.

Training:

Staff are expected to access appropriate training where provided. Training needs will be identified through appraisal.

Contents

1. Introduction/Overview 5

2. Scope 5

3. Statement/Background 5

4. Aim 6

5. Main Body 6

List of Abbreviations 6

Definitions 8

Ultrasound: Growth chart and biometric charts 8

Causes of small babies 8

Risk Assessment 9

Autoimmune conditions (list not exhaustive) 11

Antenatal surveillance 13

No SGA/FGR risk factors 15

Women unsuitable for SFH measurements (BMI >35, fibroids >6cm or multi-fibroid uterus) 15

1 Moderate Risk Factor 16

2 Moderate or 1 High Risk Factor 16

Tailing/static growth (RED plot on GROW chart) 16

Multiple pregnancies 16

Investigation of detected SGA/FGR 19

Timing/mode of birth 20

Induction of labour 20

Labour 20

EFW 3rd- 10th, normal umbilical artery doppler and liquor volume 20

EFW <3rd, normal growth velocity, normal umbilical artery doppler 20

EFW >3rd, normal growth velocity, raised PI in umbilical artery doppler, +EDF 20

Static/tailing growth >10th centile, normal umbilical artery doppler or raised PI in umbilical artery doppler and +EDF 21

AREDF regardless of EFW 21

Amniotic Fluid Abnormalities 21

6. Roles and Responsibilities 22

7. Consultation 22

8. Equality Impact Assessment 22

9. Training Requirements 22

10. Audit and Review 22

11. References 23

12. Appendices 26
Appendix 1: Indications for aspirin 26
Appendix 2: Antenatal Risk Assessment 27
Appendix 3- SGA Risk Pathways 29
Low Risk Pathway 29
Moderate Risk Pathway 30
High Risk Pathway 31
Appendix 4- Antenatal Surveillance Pathways 32
GESTATION <32+0 weeks 32
GESTATION >32+0 weeks 34

1. Introduction/Overview

Fetal growth restriction (FGR) is not synonymous with small for gestational age (SGA). 50- 70- % of SGA fetuses are constitutionally small, with appropriate growth for maternal size and ethnicity. However, the likelihood of FGR is higher in SGA infants. And involves a pathological restriction of the genetic growth potential, perhaps leading to fetal compromise.

SGA fetuses are at increased risk of perinatal morbidity and mortality but most adviser outcomes are within babies with FGR. Diagnosis of SGA/ FGR fetuses relies on ultrasound measurement of fetal abdominal circumference (AC) or estimated fetal weight (EFW), and umbilical artery doppler. Antenatal detection of SGA, and particularly FGR, is vital and has been shown to reduce stillbirth risk significantly because it gives the option to consider timely delivery.

2. Scope

This guideline applies to all clinicians working within Aneurin Bevan University Health Board (ABUHB) maternity services.

3. Statement/Background

If you have difficulty understanding any part of this guideline- including due to learning, sensory, or communication needs- please speak with your Line Manager or contact the authors of this guideline for support or clarification.

Staff must take a proactive approach to identifying and meeting the accessibility and communication needs of people with disabilities and/or language barriers, including offering information in alternative formats, arranging interpretation or communication support as required, and not relying solely on individuals to request adjustments.

The term "woman/ women" will be used throughout this document however, it is recognised that this refers to all pregnant, birthing and postnatal people regardless of gender identification.

4. Aim

This guideline has been developed to support clinical decision-making in the context small of gestational age (SGA) management.

The purpose of this guidance is to aid the identification, investigation and management of the SGA fetus. It is based upon the Royal College of Obstetricians and Gynaecologists (RCOG, 2024) Green-top Guideline No. 31 of the same title, and further references can be obtained from that source if required.

This guideline should be read in conjunction with the following documents-

- Small-for-Gestational-Age Fetus and a Growth Restricted Fetus, Investigation and Care (Green-top Guideline No. 31) (RCOG, 2024)
- Saving Babies' Lives Version Two A care bundle for reducing perinatal mortality (NHS England, 2019)
- GROW 2.0 Implementation Documentation (Perinatal Institute, 2024)
- Antenatal corticosteroids to reduce neonatal morbidity and mortality (Green-top Guideline No. 74) (RCOG, 2025)
- Fetal growth screening by fundal height measurement (Morse et al, 2009)

5. Main Body

List of Abbreviations

AC	Abdominal Circumference
AEDF	Absent End Diastolic Flow
AFI	Amniotic Fluid Index

ANC	Antenatal Clinic
APH	Antepartum Haemorrhage
APLS	Antiphospholipid Syndrome
AREDF	Absent or Reversed End Diastolic Flow
BMI	Body Mass Index
CFM	Continuous Fetal Monitoring
CMV	Cytomegalovirus
CS	Caesarean Section
CTG	Cardiotocograph
DAU	Day Assessment Unit
DVP	Deepest Vertical Pool
EDF	End Diastolic Flow
EFW	Estimated Fetal Weight
FGR	Fetal Growth Restriction
GDM	Gestational Diabetes Mellitus
GROW	Gestation Related Optimum Weight
HTN	Hypertension
MCA	Middle Cerebral Artery
NHH	Nevill Hall Hospital
PI	Pulsatility Index
PIH	Pregnancy Induced Hypertension
REDF	Revered End Diastolic Flow
RI	Resistance Index
RGH	Royal Gwent Hospital
SD	Standard Deviation
SFH	Symphysis Fundal Height
SGA	Small for Gestational Age
UA	Umbilical Artery
TTN	Transient Tachypnoea of the Newborn
YYF	Ysbyty Ystrad Fawr

Definitions

- **SGA**: EFW < 10th centile (on GROW chart) **OR** AC < 10th centile (on USS intergrowth chart).
- **FGR**: EFW < 3rd centile (on GROW chart) **OR** EFW < 10th centile (on GROW chart) with abnormal umbilical artery doppler.
    - Early FGR <32+0
    - Late FGR: ≥32+0
- **Constitutionally small**: normal growth velocity as per GROW chart **AND** normal umbilical artery doppler **AND EITHER** EFW < 10th centile (on GROW chart) **OR** AC < 10th centile (on USS intergrowth chart).
- **Tailing growth**: reduction in EFW centile which triggers a RED plot on the GROW chart **OR** AC/ EFW centile drops by greater than 25 centiles.

Ultrasound: Growth chart and biometric charts

All women should have a customised GROW chart generated. This must include the birth weights of previous babies.

EFW: should be plotted on to the customised GROW chart on Badgernet and these centiles used for diagnosis.

AC/HC/FL/umbilical artery doppler: interpretation should be based on the centile from the Intergrowth biometry/doppler charts on all ultrasound machines used for fetal scanning (not the charts on Badgernet).

Causes of small babies

1. Constitutionally small
2. Non-placenta mediated growth condition
    - Structural anomaly
    - Chromosomal anomaly
    - Inborn error of metabolism
    - Fetal infection
3. Placenta mediated growth condition
    - BMI <18.5 with eating disorder

- Malnutrition
- Substance misuse
- Severe anaemia
- Pre-eclampsia
- Autoimmune disease
- Thrombophilia
- Renal disease
- Diabetes
- Hypertension

Risk Assessment

All women should be assessed for risk at booking and there should be ongoing assessment during pregnancy for risk factors for an SGA fetus to identify those requiring increased ultrasound surveillance.

'Moderate' risk
Current Smoker/
Illegal Drug and/or alcohol misuse
Women ≥40yrs old at conception
Previous gastric bypass surgery
Booking BMI ≥35
Fibroid ≥6cm or multifibroid uterus

Table 1 Moderate SGA risk factors

'High' risk
Any previous pregnancy with evidence of FGR/placental insufficiency
Evidence of tailing/slow growth on ultrasound
Evidence of abnormal Umbilical Dopplers

Previous early onset PET <32wks
Unexplained Oligohydramnious
Previous SGA <10th centile
Previous Stillbirth
Pre-existing HTN
Maternal Autoimmune conditions (see list below)
Drugs (e.g betablockers, chemotherapy agents)
Any renal impairment
Low Papp-A <0.415 MoM
IVF donor egg pregnancy
Previous Placental Abruption
Previous Hx of VTE
Current eating disorder under specialist care
BMI <18.5 PLUS eating disorder/medical condition affecting nutrition.
Current Cancer diagnosis
Maternal Cystic Fibrosis/PKU/Cyanotic CHD
Late Booker >20+0
X2 or more moderate risks

Table 2 High SGA risk factors

Risk factors that develop in pregnancy (list not exhaustive):

Pregnancy Induced HTN/Pre-eclampsia
Ongoing hyperemesis >20wks
Unexplained APH >20wks requiring hospital admission
2 vessel umbilical cord
Echogenic bowel

Gestational Diabetes

Table 3 SGA risk factors that develop in pregnancy

In the presence of the above risk factors, surveillance should start at 28-weeks or as soon as risk factors develop if >28-weeks' gestation.

Autoimmune conditions (list not exhaustive)

- Diabetes including GDM
- APLS
- SLE
- Sjogren's
- Hyperthyroidism (inc treated and now hypothyroid)
- Addison's Disease
- Multiple Sclerosis
- Crohn's
- Ulcerative Colitis
- Coeliacs

Drugs (list not exhaustive):

- Betablockers
- Chemotherapy agents
- Warfarin
- Regular steroids
- Biologics

Any woman deemed at high risk should be considered for uterine artery dopplers between 18- 24-weeks at their Lead Consultant Obstetrician's discretion. This allows for an additional scan at 24 weeks for EFW, umbilical doppler and amniotic fluid measurement if uterine artery dopplers are abnormal.

Prevention

1. Antiplatelet therapy
    - Reduces SGA/FGR related to pre-eclampsia (Please refer to Indications for aspirin as per Appendix 1),
    - 150mg aspirin PO ON,
    - Commence from 12+0 until birth,
    - No evidence of benefit if started at >16+0,
    - 75mg OD ON can be considered if contraindication to higher dose (i.e., asthma, NSAID sensitivity).

2. Smoking cessation
    - Offer referral to smoking cessation service to all women who smoke tobacco,
    - The referral is made on Badgernet (Figure 1). Declined referral should also be documented on Badgernet,
    - Women identified as smokers at booking require serial USS in accordance with the moderate risk criteria.

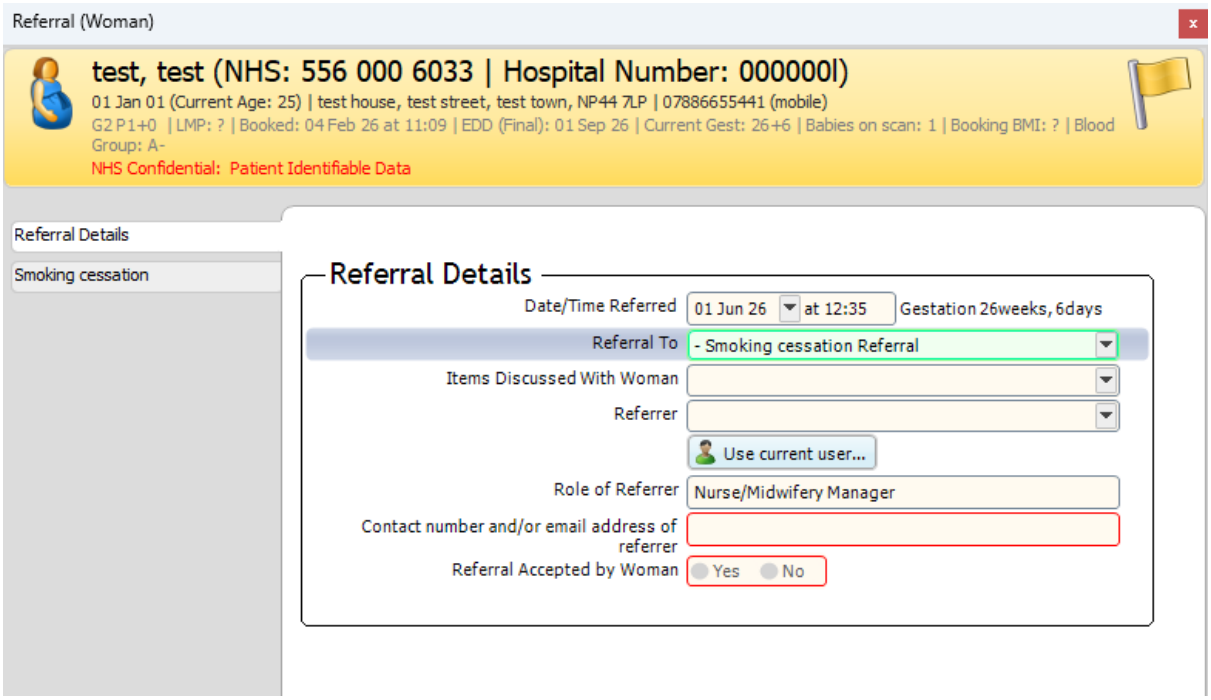


Figure 1 Badgernet smoking cessation referral

Antenatal surveillance

Appendix 2 contains a Risk Assessment for SGA/FGR, and should be carried out for all women at booking. This risk assessment should be carried out via the *'Fetal Growth and Pre-eclampsia (Aspirin) Risk Assessment'* via the Badgernet system (Figure 2) Women with 1 or more risk factors should be referred for serial EFW, umbilical artery doppler and amniotic fluid (deepest vertical pool) ultrasound scans via the **moderate** or **high-risk** ultrasound scan pathways (Appendix 3). This referral is made through Badgernet (Figure 3).

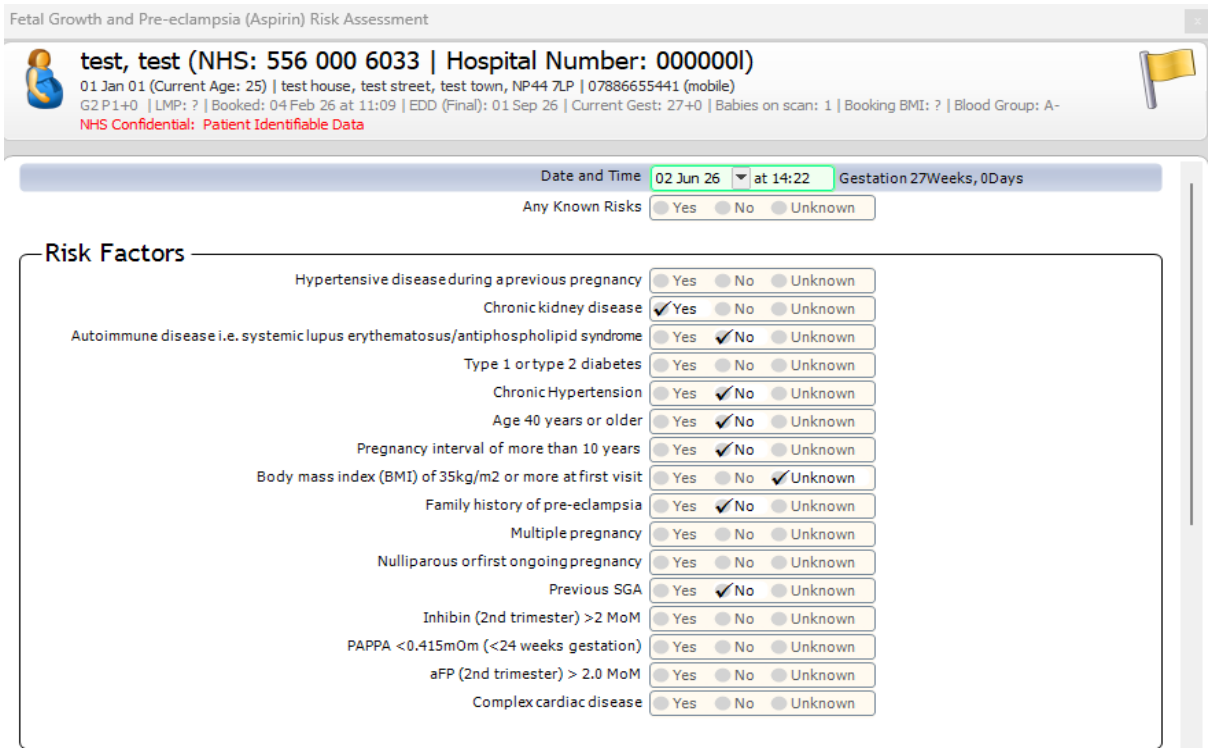


Figure 2 Fetal Growth and Pre-Eclampsia (Aspirin) Risk Assessment

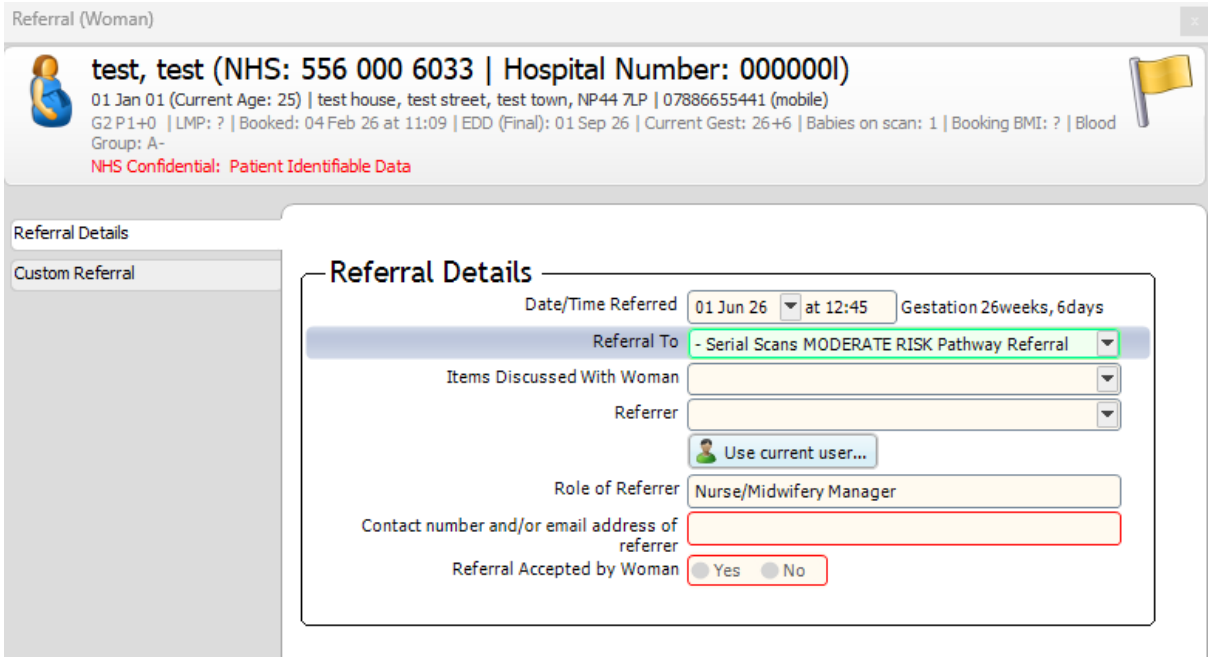


Figure 3 Badgernet serial scan pathway referral

The scans will be performed by midwife sonographers in the unit at which their Lead Obstetrician carries out their Antenatal Clinic. The ultrasound scan appointment and Consultant Antenatal appointment should occur during the same session to minimise delay in scan review by an obstetrician. To optimise this, initial scans growth scans should only be booked for lists that occur alongside a Consultant Antenatal clinic. Where this is not possible, the Consultant Obstetrician should be informed by email so that a system for scan review can be put into place. Wherever possible the ultrasound scans should all be performed by the same midwife sonographer as this is associated with more accurate prediction of FGR.

Where FGR has been identified and further surveillance is required, the midwife sonographer should complete an urgent obstetrics referral form for governance purposes, email the relevant obstetric consultant to make them aware, and proceed to book a follow-up ultrasound scan and accompanying ANC appointment (during the same session), overbooking a clinic if necessary, as per the flow charts in Appendix 4.

The nature of ongoing surveillance will depend on the gestation, clinical picture, and abnormal parameters (Appendix 4). Where the need for an ultrasound scan falls on a weekend day, an ultrasound scan on the nearest week day should be arranged. Ultrasound scans slots with an alongside obstetrician-led clinic should be booked.

No SGA/FGR risk factors

- SFH 2-4 weekly from 26-28 weeks until birth,
- SFH should be plotted on the customised GROW chart on Badgernet,
- If SFH <10th centile, refer for next available midwife sonographer ultrasound scan, with an obstetric antenatal clinic appointment the same day- overbooking the antenatal clinic if necessary.
    - If <10th centile via ultrasound scan, a follow-up ultrasound scan and obstetric antenatal clinic appointment should be booked for 4-weeks later, ideally with the same midwife sonographer.
    - If >10th centile via ultrasound scan, a follow-up ultrasound scan should be booked for 4 weeks later, ideally with the same midwife sonographer, to confirm the absence of tailing growth. A further obstetric antenatal clinic appointment is not required. In the event of <10th centile/ reduced velocity at the follow-up ultrasound scan, an obstetric antenatal clinic appointment will be required.

Women unsuitable for SFH measurements (BMI >35, fibroids >6cm or multi-fibroid uterus)

- SFH at 26-28 weeks,
- Ultrasound scan at 32, 36 and 39-weeks with Consultant Obstetrician appointment the same day.

1 Moderate Risk Factor

- SFH at 26-28 weeks,
- If SFH >10th centile then ultrasound scan at 32, 36 and 39 weeks with a Consultant Obstetrician appointment the same day,
- If SFH <10th centile then refer for next available midwife sonographer ultrasound scan, in the unit at which their obstetric antenatal care will be provided, with a Consultant Obstetrician appointment the same day- overbooking the clinic if necessary.

2 Moderate or 1 High Risk Factor

- Ultrasound scan at 28, 32, 36 and 39 weeks with a midwife sonographer, in the unit in which their Obstetric Antenatal care will be provided, with a Consultant Obstetrician appointment the same day.

Tailing/static growth (RED plot on GROW chart)

- Refer for next available midwife sonographer ultrasound scan, with an obstetric antenatal clinic appointment the same day- overbooking the clinic if necessary.

Multiple pregnancies

**Please refer to the Multiple Pregnancies Management Guideline (Aneurin Bevan University Health Board, 2023) for further information regarding multiple pregnancy management.*

- Ultrasound scans for multiple pregnancies are not performed by midwife sonographers.
- Customised GROW charts are not standardised for multiple pregnancies and therefore the emphasis should be on growth velocity (RED plots) rather than centile.

Dichorionic pregnancies

- Ultrasound scans are booked in the main radiology department.
- An obstetric antenatal appointment should be booked for the same day.
- In the rare exception that this is not possible, the woman should attend the local Day Assessment Unit (DAU) to have her ultrasound scan plotted onto Badgernet to allow detection of FGR (tailing or static growth).

Monochorionic pregnancies

- For women booked in the Royal Gwent Hospital (RGH), Ysbyty Ystrad Fawr (YYF) or under the care of Mrs Afshan in County Hospital- complete a Badgernet referral to RGH twin pregnancy clinic by 14 weeks (Figure 4).

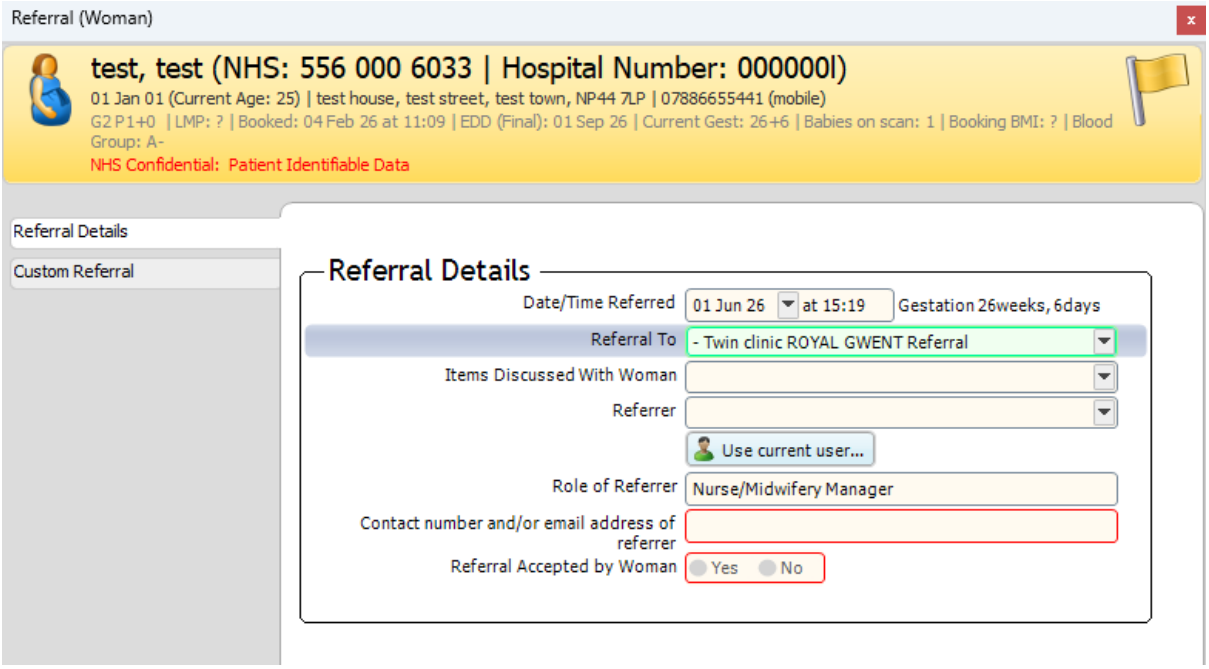


Figure 4 Twin clinic Badgernet referral

- Women booked in YAB, NHH or under the care of Mr Oweis, Mr Curpad or Ms Sharma in County Hospital- complete a Badgernet referral to fetal medicine in Nevill Hall Hospital (NHH) by 14 weeks (Figure 5).

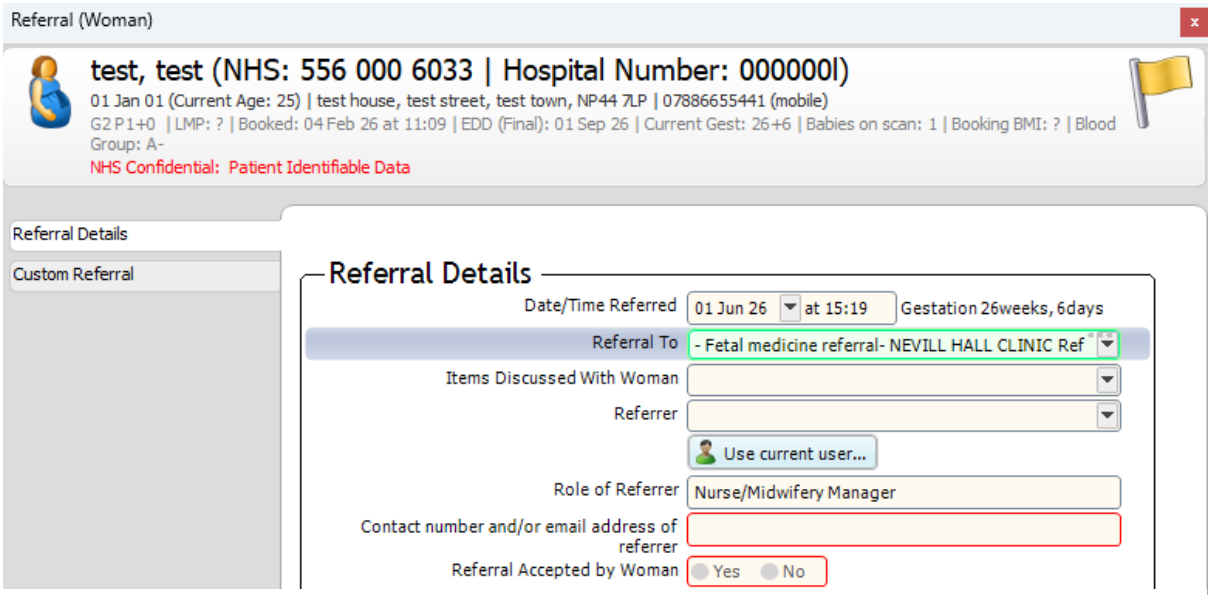


Figure 5 Fetal medicine Badgernet referral

Ultrasound Surveillance

Routine measurement of AC or EFW in the 3rd trimester does not reduce the risk of a SGA neonate nor improve perinatal outcome, hence routine fetal biometry is not justified.

Two measurements of AC or EFW should be at least 2 weeks apart to prevent overdiagnosis of SGA/FGR.

Serial assessment of the EFW, umbilical artery doppler and amniotic fluid should be instigated if:

1. AC (via the ultrasound machine intergrowth chart) or EFW (on the customised GROW chart) is found to be <10th centile.
2. There is evidence of reduced growth velocity (RED plot) on the GROW chart from the previous ultrasound scan.
3. The EFW/AC centile drops by greater than 25 centiles.

The importance of monitoring a usual pattern of fetal movements should be discussed: reduced fetal movements should be managed as per the Altered Fetal Movements Guideline (Wales Maternity and Neonatal Network, 2021).

Investigation of detected SGA/FGR

Criteria for referral to fetal medicine unit through Badgernet form:

- Early onset FGR (<32 weeks)
    - EFW <3rd *
    - EFW <10th with raised PI in umbilical artery doppler**
        - **Please note, the EFW us based on the GROW chart centile*
        - ***Please note, the AC/ HC/ FL and doppler centiles are based on the USS machine intergrowth charts*
- Late onset FGR (>32 weeks)
    - EFW or AC <3rd
    - AC/HC ratio <3rd
    - HC or FL <3rd centile
- Regardless of gestation, and in the absence of other concerns, DO NOT refer babies with an EFW between 3rd and 10th centile with normal dopplers.

In fetal medicine, karyotyping will be offered in severely SGA fetuses with structural anomalies, particularly if uterine artery doppler is normal. A detailed skeletal survey will be performed.

In obstetric antenatal clinic maternal serological and infection screening for cytomegalovirus (CMV) and toxoplasmosis should be performed, along with syphilis and malaria in high-risk populations.

Timing/mode of birth

Induction of labour: Preferentially use mechanical induction methods. CTGs should be performed every 6 hours during the induction process (please refer to the local Induction of Labour (IOL) Guideline (Aneurin Bevan University Health Board, 2025a)).

Labour: Women should receive continuous CTG monitoring from the onset of regular uterine contractions.

EFW 3rd- 10th, normal umbilical artery doppler and liquor volume

- Birth in the 39th week, by IOL or planned caesarean section,
- Women should be aware that the rates of caesarean birth are approaching 70% in this group,
- There is no indication for antenatal corticosteroids.

EFW <3rd, normal growth velocity, normal umbilical artery doppler

- Birth in the 37th week, by IOL or planned caesarean section,
- Women should be aware that the rates of caesarean birth are approaching 70% in this group,
- If birth is planned by caesarean section, antenatal corticosteroids should be discussed and offered and the decision documented; the risk of TTN is 5% and disease is usually mild and transient.

EFW >3rd, normal growth velocity, raised PI in umbilical artery doppler, +EDF

- Birth in the 37th week, by IOL or planned caesarean section,
- Women should be aware that the rates of caesarean birth are approaching 70% in this group

- If birth is planned by caesarean section antenatal corticosteroids should be discussed and offered and the decision documented; the risk of TTN is 5% and disease is usually mild and transient

Static/tailing growth >10th centile, normal umbilical artery doppler or raised PI in umbilical artery doppler and +EDF

- Consider birth between 34 and 37 weeks with senior obstetric review considering the complete clinical picture.
- If birth by caesarean section is planned at <37 weeks, women should be recommended a single course of timely, targeted antenatal steroids where delivery is anticipated in the next 7 days.
- If IOL is being offered for a birth at <35 weeks, antenatal corticosteroids should be discussed and recommended; the risk of TTN is 5% and disease is usually mild and transient.
- Birth by IOL can be considered from 34 weeks.
- Women should be aware that the rates of caesarean birth are approaching 70% in this group.

AREDF regardless of EFW

- Recommend birth by caesarean section.
- If birth by caesarean section is planned at <37 weeks, women should be recommended a single course of timely, targeted antenatal steroids within 7 days of expected birth.

Amniotic Fluid Abnormalities

Please refer to the local Polyhydramnios- Pathway for Clinical Practice in Singleton Pregnancy Guideline (Aneurin Bevan University Health Board, 2025b) and the Fetal Medicine Services Pathway for Referral and Management Guideline (Aneurin Bevan University Health Board, 2024) for guidance pertaining to amniotic fluid abnormalities.

6. Roles and Responsibilities

It is the responsibility of the maternity team to ensure that this guideline is adhered to when providing care to women affected by/ at risk of SGA.

7. Consultation

All new or significantly revised policies will be subject to consultation within the division via the Clinical Effectiveness Forum (CEF) and with relevant professional groups and/ or individuals present.

Individuals with expertise in obstetrics, midwifery and ultrasonography have been consulted with in the development of this policy.

8. Equality Impact Assessment

An equality impact assessment has been carried out and approved as this guideline prioritises care based on standardised assessment and clinical need.

9. Training Requirements

Staff are expected to access appropriate training where provided. Training needs will be identified through appraisal and clinical/ educational supervision.

10. Audit and Review

This policy will be reviewed on a 3-yearly basis, unless significant changes to clinical practice/ national policy arise.

Maternal/ neonatal outcomes will be monitored via the local maternity dashboard. Adverse maternal/ neonatal outcomes will be reviewed on an individual basis via local governance arrangements.

All instances of missed SGA diagnosed at the time of birth are audited by the Ultrasound Governance Lead for Maternity Services, with review of USS

frequency, USS quality and to generate a % error. This data is also provided to the Perinatal Institute for the purpose of taxonomy generation and national oversight.

11. References

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12. Appendices

Appendix 1: Indications for aspirin

1 'high' risk factor – commence 150mg aspirin PO ON,

2 'moderate' risk factors - commence 150mg aspirin PO ON.

High Risk (1 needed)	**Moderate Risk (2 needed)**
hypertensive disease during a previous pregnancy	nulliparity
chronic kidney disease	age 40 years or older
autoimmune disease such as systemic lupus erythematosus or antiphospholipid syndrome	pregnancy interval of more than 10 years
type 1 or type 2 diabetes	body mass index (BMI) of 35 kg/m^2 or more at first visit
Essential chronic hypertension	family history of pre-eclampsia
Low Papp-A <0.415 MoM (<24 weeks gestation)	multiple pregnancy

Appendix 2: Antenatal Risk Assessment

Scans max 4wks apart from 28wks or from diagnosis	**Tick**
Any evidence of previous FGR/placental insufficiency, i.e. previous PET/ PIH with SGA/ FGR/ tailing growth	
Previous SGA <10th centile	
Previous Stillbirth	
Pre-existing HTN	
PIH/PET this pregnancy	
Maternal Autoimmune conditions (see list)	
Drugs (e.g betablockers, chemotherapy agents)	
Any renal impairment	
Low Papp-A <0.415 MoM	
Ongoing hyperemesis >20wks	
Unexplained APH requiring hospital admission	
IVF donor egg pregnancy	
Previous Placental Abruption	
Previous Hx of VTE	
Current eating disorder under specialist services	
BMI <18.5 PLUS current eating disorder/medical condition affecting nutrition.	
Cystic Fibrosis/PKU	
Maternal Cyanotic CHD	
Current Cancer diagnosis	
X2 or more moderate criteria	
2 vessel umbilical cord	
Fetal Echogenic Bowel	
Gestational Diabetes	
Late booker >20+0 gestation	
Other – please justify	

Scan from 32wks max 4wks apart	**Tick**
Current Smoker at booking	
Illegal Drug and any alcohol misuse	
Women ≥40yrs old at conception	
Previous gastric bypass surgery (NOT gastric band)	

Booking BMI ≥35	
Fibroid ≥6cm or multifibroid uterus	
X2 moderate risk factors – REFER TO HIGH RISK	

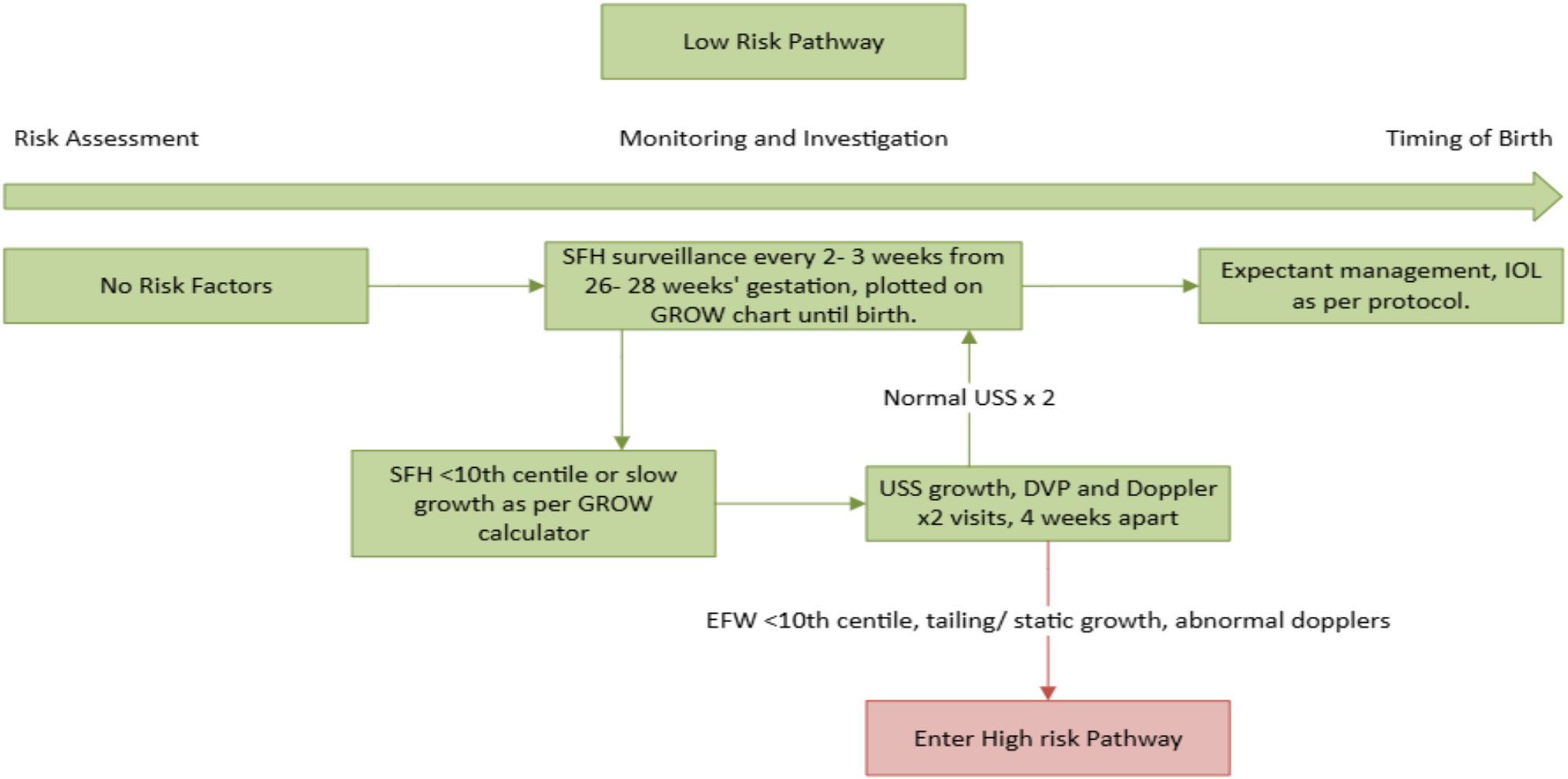
Scan at 34 and 38wks	**Tick**
IVF pregnancy (OWN EGG)	
Previous LFDs	
Previous baby NICU admission for cooling	
X3 consecutive miscarriages	
Previous second trimester miscarriage	

Scans x2 max 4wks apart to assess growth trajectory	**Tick**
SFH - <10th centile or static growth	

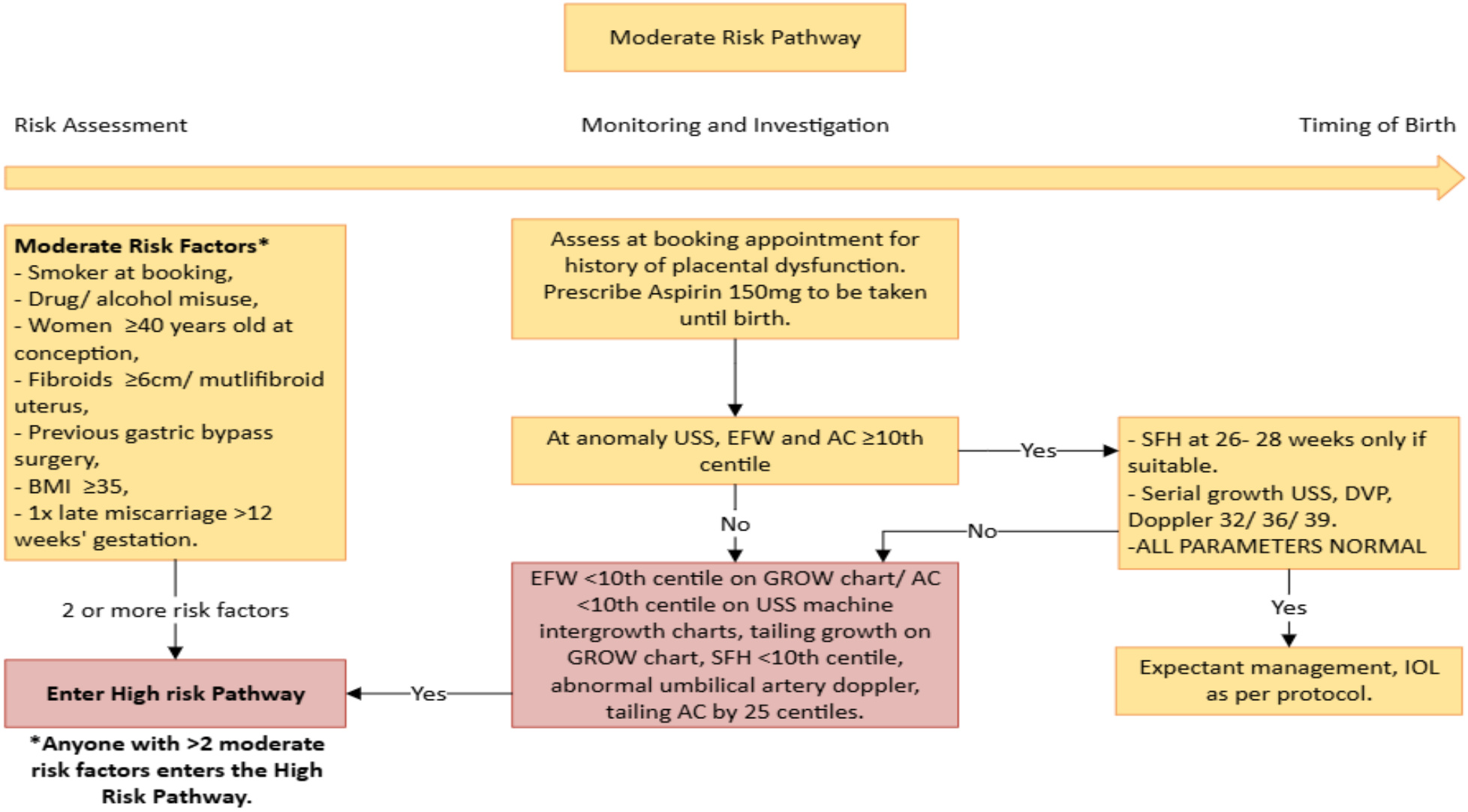
Print …… Sign …… Date ……/……/……

Appendix 3- SGA Risk Pathways

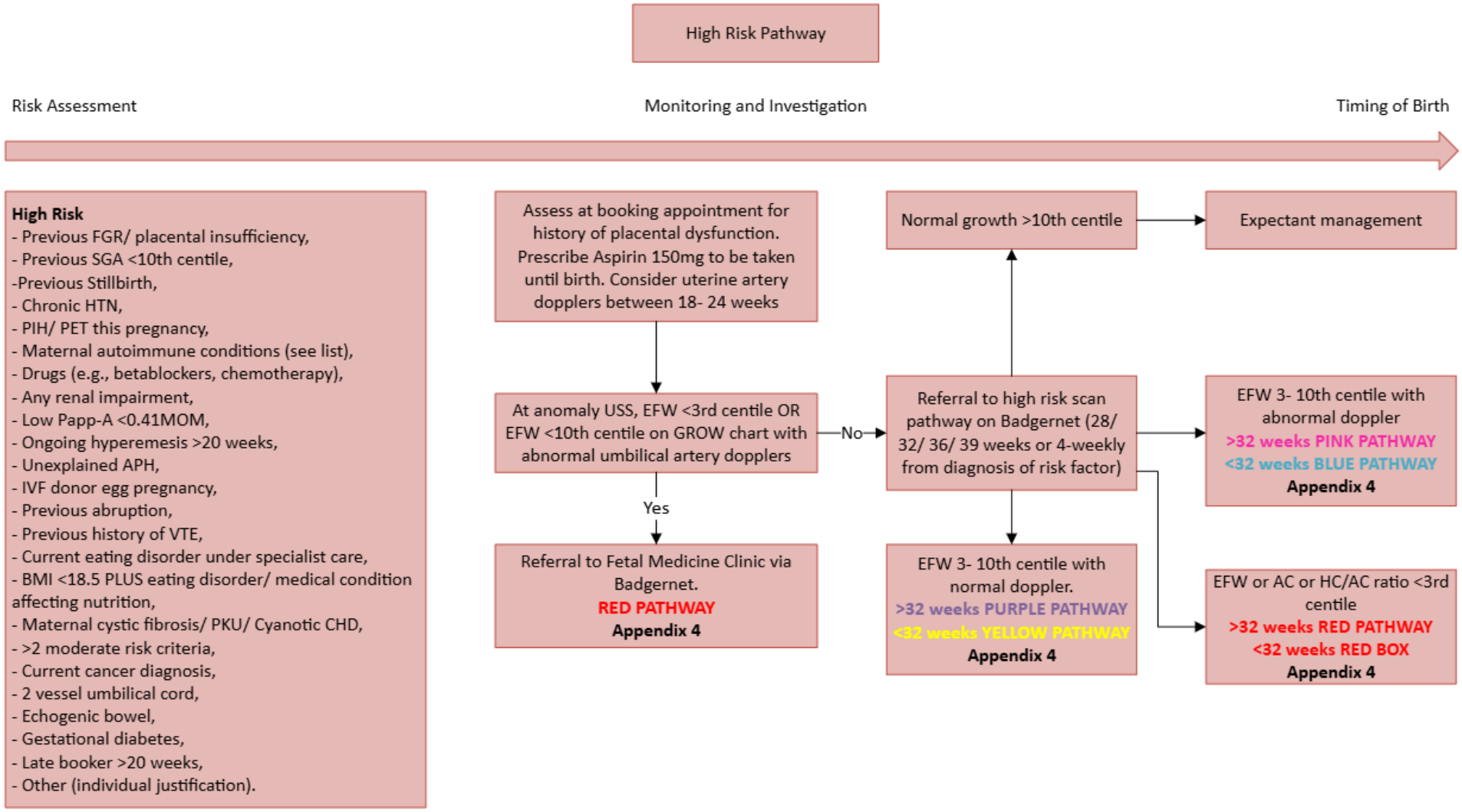
Low Risk Pathway



Moderate Risk Pathway



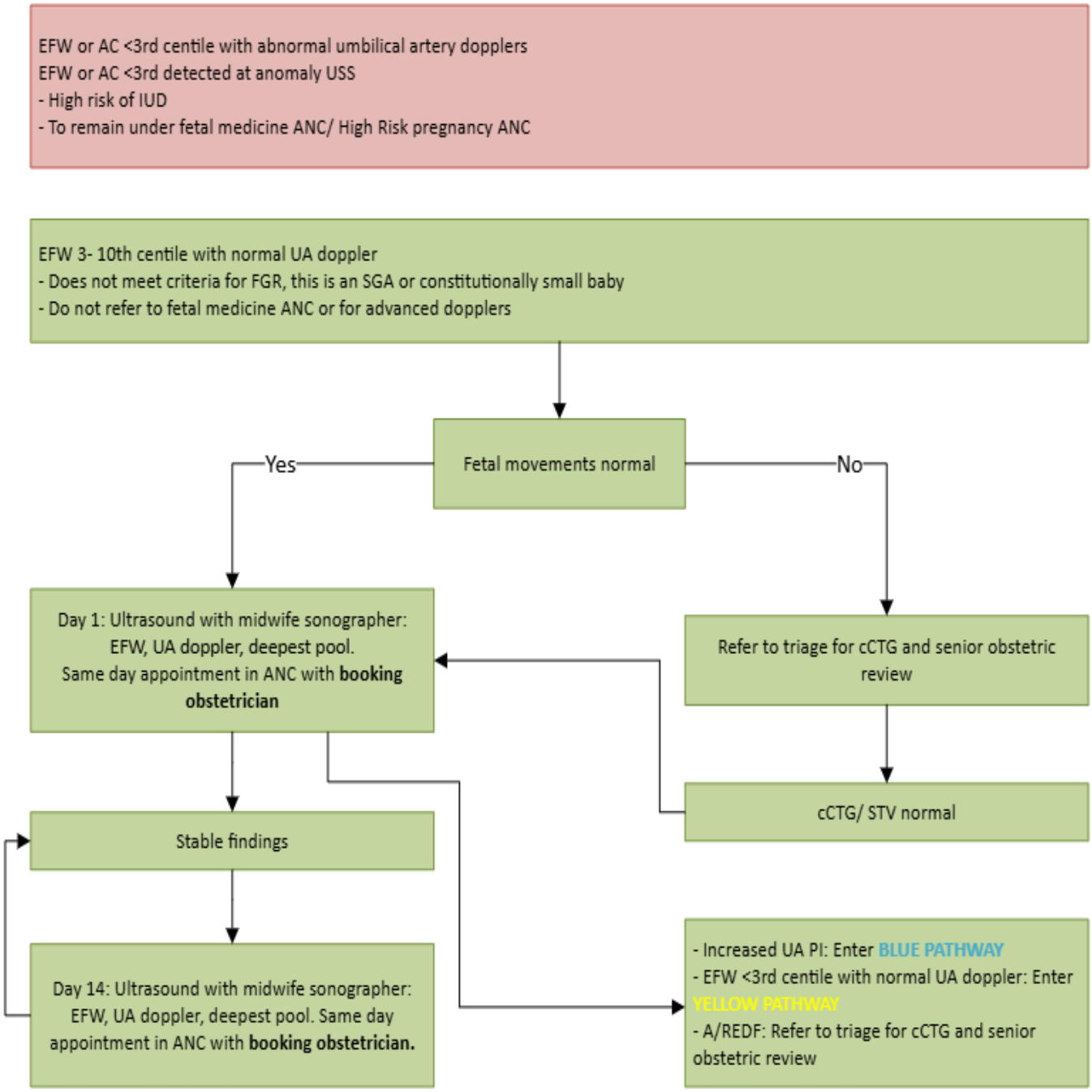
High Risk Pathway



Appendix 4- Antenatal Surveillance Pathways

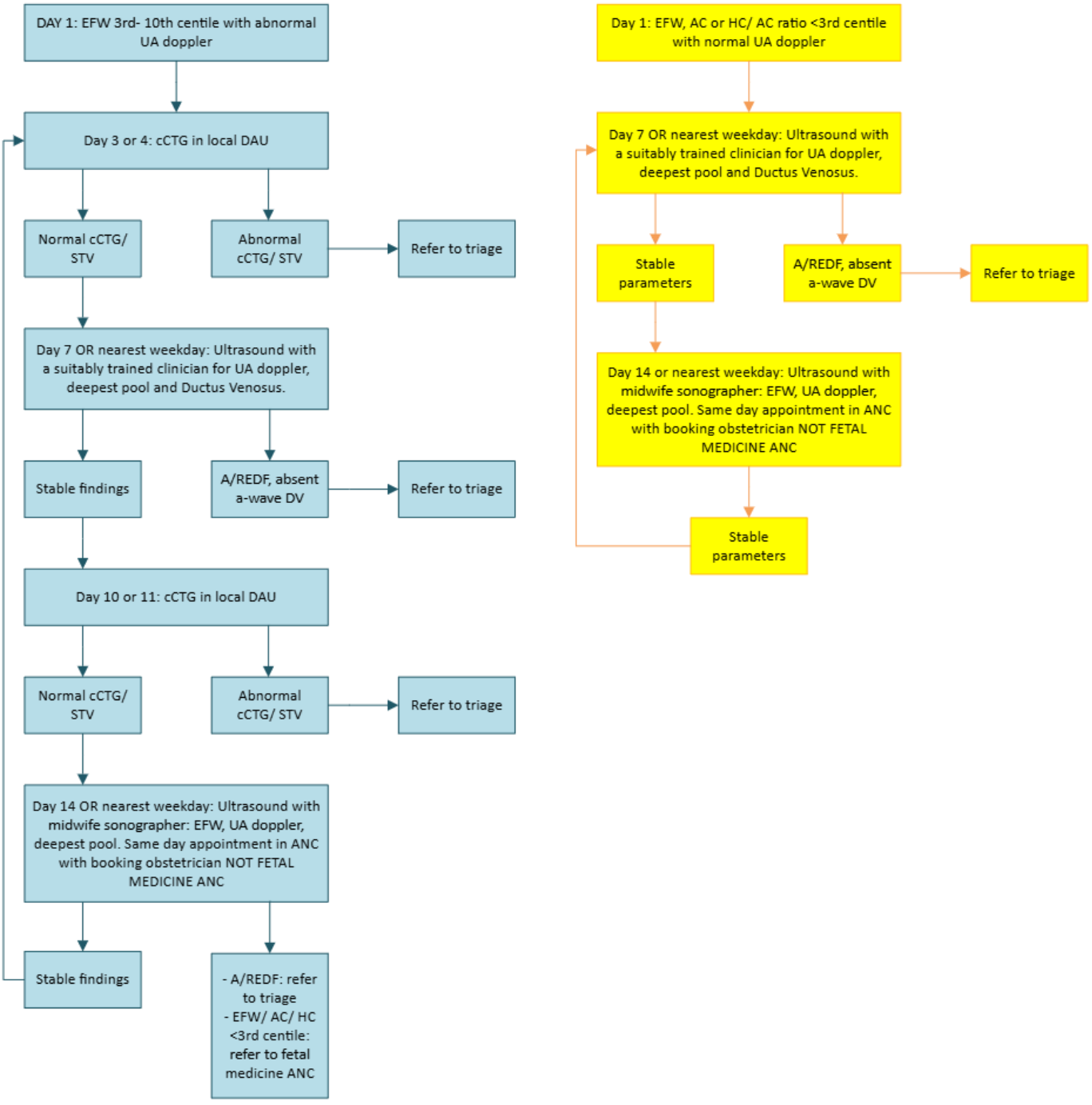
GESTATION <32+0 weeks

RED BOX



BLUE and YELLOW PATHWAYS

EFW <3rd centile
AC or HC <3rd centile
EFW 3rd- 10th centile and abnormal UA doppler
- Refer to fetal medicine ANC using the Badgernet referral form (Figure 5)
- If the patient is discharged from fetal medicine ANC, a plan should be documented in the Badgernet notes which will likely reflect the BLUE or YELLOW pathways



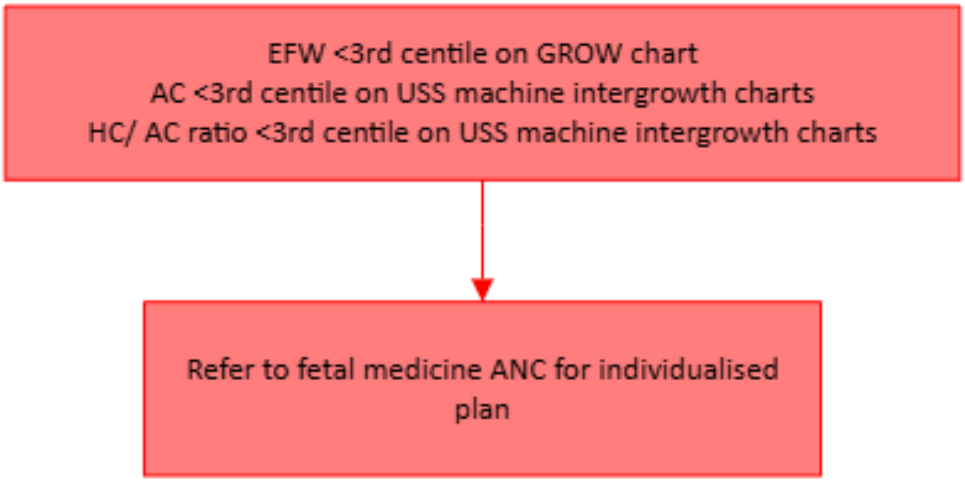
GESTATION >32+0 weeks

HC/ AC ration <3rd centile, or EFW <3rd centile, or AC <3rd centile= **RED PATHWAY**

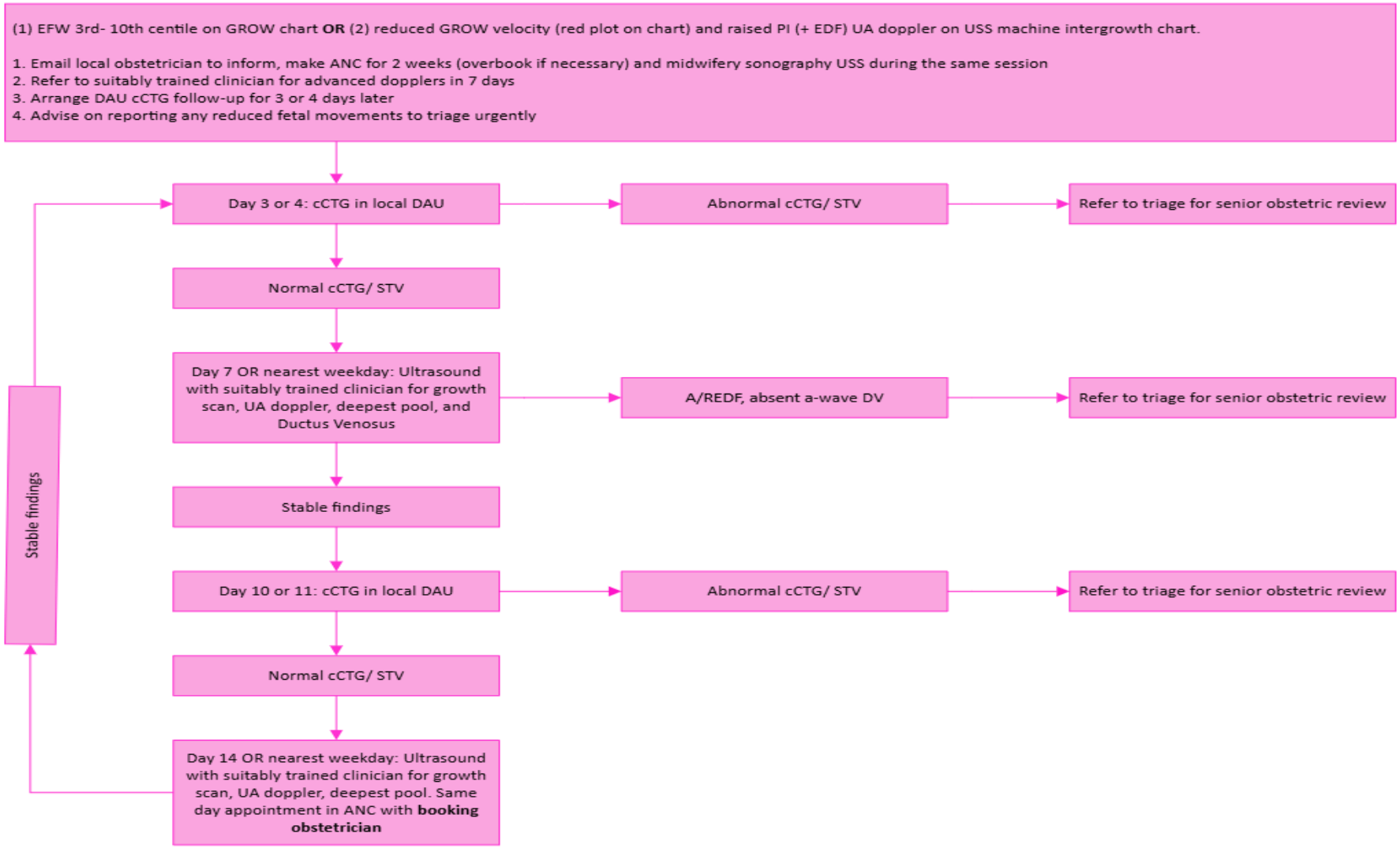
EFW 3rd- 10th centile, or reduced GROW velocity (red plot on chart) with positive EDF and raised UA pulsatility index (PI)= **PINK PATHWAY**

EFW 3rd- 10th centile, or reduced GROW velocity (red plot on chart), with positive EDF and normal UA PI= **PURPLE PATHWAY**

RED PATHWAY



PINK PATHWAY



PURPLE PATHWAY

