Guideline Document Control Sheet

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Final approval

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Signed master copy held at:	Corporate Records Office, Trust Headquarters, Darlington Memorial Hospital

Version Control Table

Date Ratified	Version Number	Status
Date of Issue	Version Number	Status
12/09	2.0	Superseded
21/04/2010	3.0	Superseded
19/01/2012	3.1	Superseded
18/04/2012	4.1	Superseded
14/05/2013	4.2	Superseded
08/02/17	5.0	Superseded
30.4.18	5.1	Approved

Table of Revisions

Date	Section	Revision	Author
December 2009	Full	A review to ensure the guideline reflects the current evidence base, service provision and NHSLA standard 2 criterion 5 and NICE.	Joanne Woodward
April 2010	Full	Following CNST assessment and changes of times for UHND.	Jean Hatton
December 2011	Partial	Reviewed to match trust policy for guidelines, now includes maternal request for IOL & documentation of maternal observations NHSLA requirements, revised times for IOL at DMH and KPIs amended	Jean Hatton
April 2012	Full	Reviewed and updated with reference to NHSLA induction of labour with diabetes, IUD, pre-term pre-labour SROM, prev C/S and pre-labour SROM.	Joanne Woodward
April 2016	Full	Review of evidence base Process for induction made clear	Dr Shilpi Mittal EBPG

		Timing of induction Scan to be performed for presentation prior to induction	
April 2017	Partial	Changes made to 5.3 when induction is delayed or declined and appropriate management	EBPG Dr Mittal

Contents

1 Introduction

Induction of labour (IOL) is the term used to describe the artificial onset of labour. Induction of labour is associated with an increased risk of maternal and perinatal morbidity. Women should be explained the indication for induction of labour, the process and its risks and benefits, alternative options if women choose not to have induction when arranging induction. This guideline reflects evidence based recommendations following National Institute for Health and Clinical Excellence (NICE) Intrapartum care for healthy women and babies (2014), NICE Induction of Labour (2008).

2 Purpose

The following guidelines have been developed to assist staff in;

- Management of induction of labour in low risk women
- Management of induction of labour in high risk women (with medical or obstetric complications)
- Facilitate labour and delivery and minimise the maternal and perinatal morbidity associated with induction of labour

3 Scope

This guideline applies to all inductions of labour performed in County Durham and Darlington NHS Foundation Trust, and is to be followed by all staff working in the maternity services.

4 Duties

This guideline defines the roles and responsibilities of all midwives and obstetricians involved in the care of women booked for induction of labour.

5 Management

5.1 Induction of Labour in Low Risk Pregnancies

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The low risk pregnancies include the following:

- Prolonged pregnancy beyond 41 weeks with no other risk factors
- Maternal request at term
- Pre-labour rupture of membranes at term or preterm pre-labour rupture of membranes beyond 36 weeks

5.2 Prolonged Pregnancy

- Offer induction of labour from 41 weeks in women with uncomplicated pregnancies.
- Risk of fetal compromise and stillbirth rises steeply after 42 weeks pregnancy; however the evidence suggests that there is also a slight increase in poor perinatal outcome including meconium aspiration between 41 and 42 weeks.
- Offer membrane sweep at 39 and 40 weeks in primiparous women
- Offer membrane sweep at 40 weeks in multiparous women
- Give information at 39 weeks regarding benefits of membrane sweep, risk of prolonged pregnancy and induction of labour at 41 weeks if spontaneous labour does not occur.
- Expectant management should also be discussed if a woman declines to have induction of labour.

5.3 Conservative Management with Induction of Labour is Declined/Delayed Passed 41 Weeks

Low Risk

- Review by consultant at 41weeks in Antrnatal Clinic (ANC) or Pregnancy assessment unit (PAU). Full discussion regarding risks of expectant management such as stillbirth. Document risks and plan of care in notes.
- Inform that she may change her decision at any point and induction of labour will be commenced at a mutually convenient time with the woman and the labour ward.
- Arrange full antenatal assessment with a minimum of twice weekly Cardiotocograph (CTG) on PAU.
- Offer an ultrasound at 42 weeks to estimate maximum amniotic pool depth. Measurements between 2 & 8cms are considered normal.

High Risk

monitoring as above plus

- Discuss at a multidisciplinary team meeting

5.4 Maternal Age Over 40

- Offer membrane sweep at 38 and 39 weeks.
- Review by Consultant and plan induction at 38–40 weeks after discussion with woman.
  See RCOG scientific paper Induction of Labour of Older Mothers at Term Feb 2013.

5.5 IVF Pregnancy

- Offer membrane sweep at 38 and 39 weeks.

- Review by Consultant and offer induction of labour at 39-40 weeks due to increased risk of stillbirth after discussion with women.

5.6 Low PAPP-A on Combined Screening

- Offer membrane sweep at 38 and 39 weeks.
- Review by Consultant and offer induction of labour at 39-40 weeks due to increased risk of stillbirth after discussion with women. Refer to CDDFT guideline on atypical screening result in pregnancy. GUID/MAT/1212

5.7 Maternal Request

- Should not be routinely offered.
- Only under exceptional circumstances (for example, if the woman's partner is soon to be posted abroad with the armed forces), or when compelling psychological or social reasons offer at or after 40 weeks.
- Should be a Consultant decision.
- The indication must be documented in the labour ward diary.

Pre labour rupture of membranes at term- Refer to the CDDFT guideline on pre-labour spontaneous rupture of membranes. GUID/MAT/1404

Preterm pre-labour rupture of membranes (PPROM)- Refer to the CDDFT guideline on preterm rupture of membranes before labour. GUID/MAT/1318

Fetal growth restriction- Refer to the CDDFT guideline on investigation and management of the small for gestational age fetus. GUId/MAT/1220

Intrauterine Death- Refer to the CDDFT guideline on intrauterine death. GUID/MAT/1320

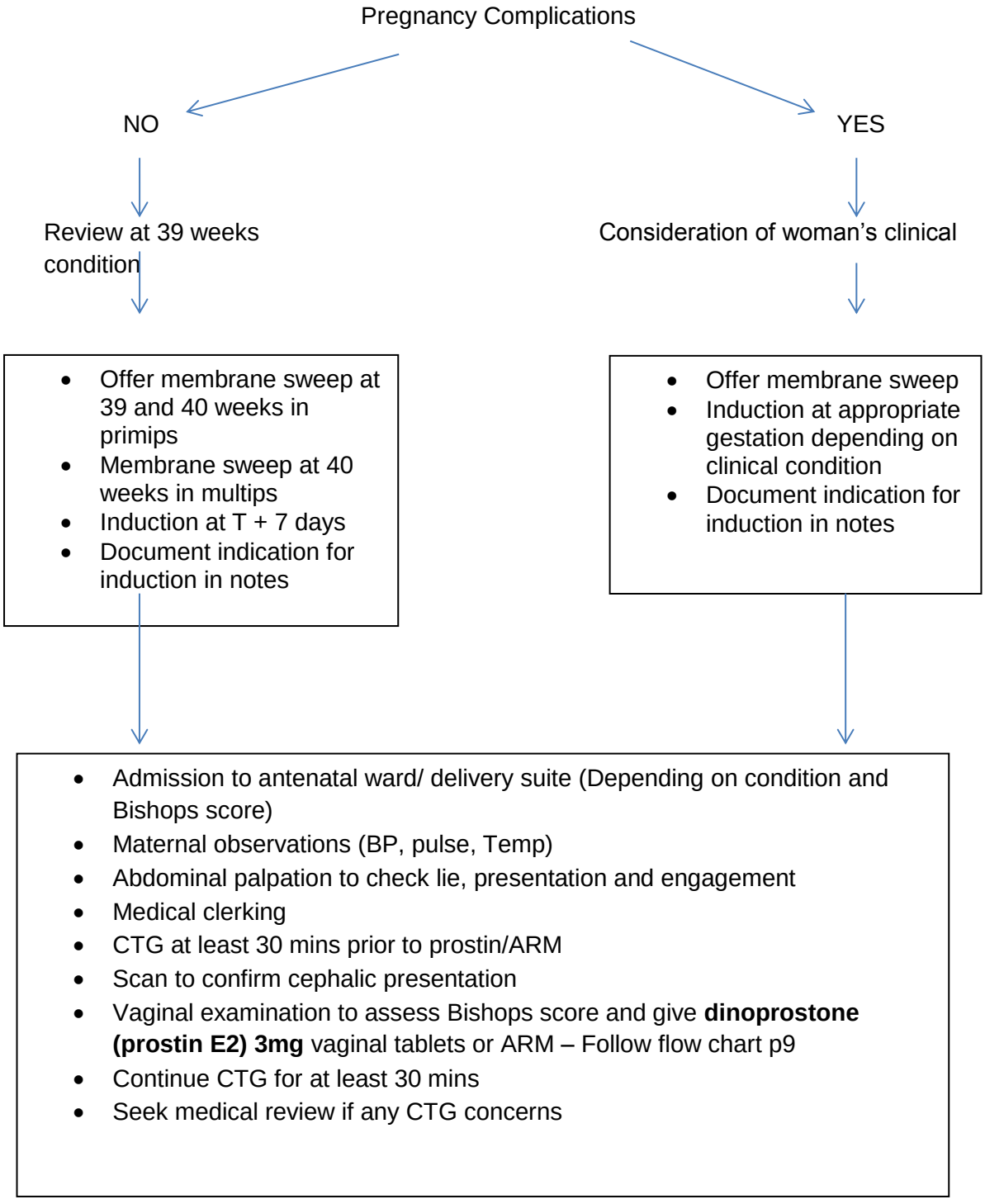
Previous caesarean section- Refer to the CDDFT guideline on management on vaginal birth after caesarean section (VBAC). GUID/MAT/1409

Maternal diabetes- Refer to CDDFT guideline on diabetes and pregnancy. GUID/MAT/1303

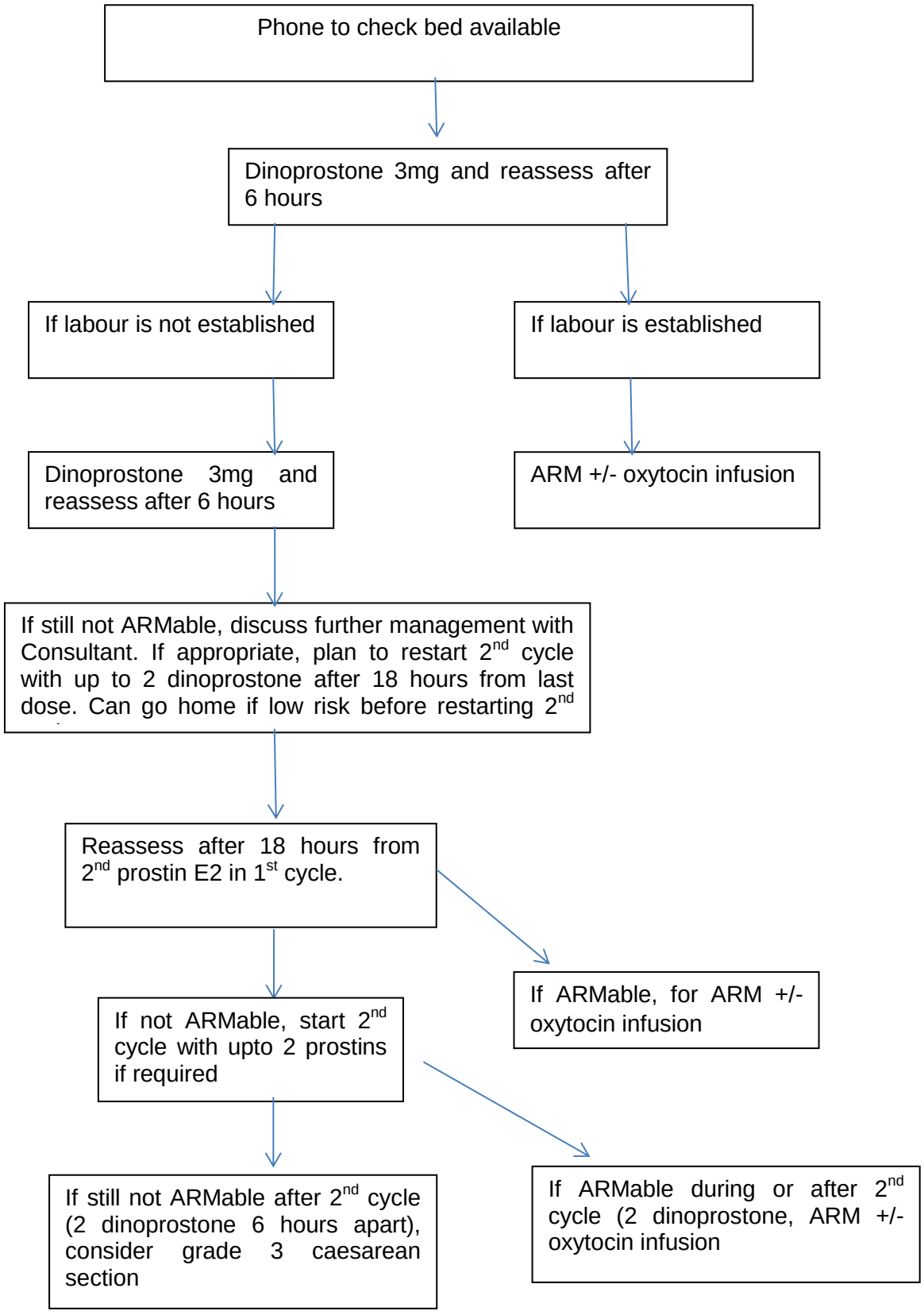
Multiple Pregnancy - primiparous women - use normal induction regime

- Multiparous women - 1 dinoprostone pessary (prostin E2) 3mg on day of admission, Artificial Rupture of Membranes (ARM) the following day or 2nd dinoprostone (prostin E2) if required

5.8 Flow Chart for timing of Induction and Process after Admission



5.9 Normal Induction Process



6 Management of Induction of Labour

6.1 Timing

- Confirm expected date of delivery (EDD) prior to booking induction.
- This should be agreed at the time of the anomaly scan at the latest and by the earliest dating scan. (CRL at 8 -12 weeks gestation. If not available use HC on anomaly scan at 18-20 weeks). Document agreed date in hospital case notes, hand held notes and computer system and sign.
- Induction considered only when vaginal delivery most appropriate mode of delivery

6.2 Booking for Induction of Labour

- Palpate abdomen and record descent of head
- Offer vaginal examination and membrane sweep. Assess cervix using the modified Bishops Score.
- Inform patients that 'priming-to-delivery' may take 24 - 48 hours. Give ‘Induction of Labour’ leaflet to woman.
- Inductions should be 'booked' with the Delivery Suite/antenatal ward dependant on Bishop Score. (T+7 for low risk women and as directed by consultant for all other women)
- Allow 3 inductions per day only (including women needing augmentation)
- Only low risk patients to be induced at weekends
- Admit to antenatal ward at the day prior to planned induction except twins who should be induced on delivery suite.
- Admit to Delivery Suite (08:00) on day of planned induction, if multip or VBAC and suitable for ARM as primary method (ask patient to ring Delivery Suite at 07:00 to confirm admission time).

6.3 Process for Induction of Labour

- Record maternal observations pulse, BP and temperature on admission.
- Abdominal Palpation to check presentation and engagement of head
- Medical clerking before proceeding with vaginal examination in all women.
- Discuss high risk inductions with on-call Registrar or Consultant.
- Abdominal scan by appropriately trained professional to confirm cephalic presentation prior to proceeding with vaginal examination.
- Perform CTG for at least 30 minutes prior to vaginal examination and ensure normal trace.
- Continue CTG for at least 30 minutes post **dinoprostone 3mg vaginal tablets (Prostin E2)** and should be normal prior to discontinue. Summon medical assistance, if any CTG abnormalities.
- Perform vaginal Examination.
- Insert dinoprostone (prostin E2) high in posterior fornix. Dinoprostone not to be given in the presence of regular contractions, risk of uterine hyperstimulation
- Explain to woman that induction likely to take longer and time consuming if Bishop Score less than 6.

Induction is more likely to be straightforward and take less time before suitable for ARM if Bishops score 6 or more.

- Dinoprostone x 2 6 hours apart if not ARMable unless VBAC or grand multip. If still not ARMable after 2 dinoprostone, restart the 2nd cycle of induction with 2 further dinoprostone 6 hours apart if appropriate and required after discussion with Consultant. Women can go home in between. 2nd cycle should be started 18 hours from last dose of dinoprostone so that not more than two doses are given in a 24 hour period.
- **Women who are grand multip (Para 5 or more) with increased risk of uterine rupture and complications should have individualised plan made for induction of labour by Consultant and documented in the notes.**

6.4 Artificial Rupture of Membranes (ARM)

- When favourable transfer to labour ward
- Obtain and record maternal observations including temperature, Blood Pressure & Pulse
- Perform CTG for 30 minutes
- Palpate to ensure engagement of the fetal head prior to ARM
- Vaginal Examination - palpate for cord prior to ARM
- **DO NOT** perform ARM if high head – liaise with obstetric staff.
- Inform obstetric staff of findings and colour of liquor
- Continue CTG for 30 min if clear liquor, otherwise continuous CTG.
- Document findings in intrapartum pathway

6.5 Oxytocin

Oxytocin infusion

- Oxytocin infusion not to be started within 6 hours of dinoprostone
- Start oxytocin straightaway after ARM in primps unless having regular tightening after discussion with patient.
- May be delayed for up to 4 hours in multips if woman wishes.
- Auscultate fetal heart rate hourly and record in intrapartum pathway prior to starting oxytocin.
- Commence oxytocin infusion if not contracting regularly (3 contractions in 10 minutes) NB Intermittent auscultation is acceptable in low risk women if not needed oxytocin and more than 6hrs since prostin.
- Cannulate and obtain blood for FBC, Group & Save Serum.
- Commence oxytocin regime to be followed, (see Appendix 2)
- Continuous CTG once oxytocin is commenced as per Guideline Intrapartum Fetal Surveillance.
- Record maternal observations as indicated in Care of Women in Labour (GUID/MAT/1400).
- Document all findings and care in intrapartum pathway.
- **Document when and why oxytocin is stopped or interrupted i.e. abnormal CTG, hyperstimulation or epidural.**
- Stop oxytocin if CTG abnormal and seek review by an obstetrician before recommencing.

6.6 Hyperstimulation

- Defined as frequent 5 or more uterine contractions in 10 minutes, prolonged uterine contractions (2 or more contractions lasting for more than 2 minutes) and failure of uterine relaxation between contractions.
- Complications- Maternal: abdominal pain and uterine rupture
  Fetal: CTG abnormalities and fetal compromise
- Management:
  - Aim to decrease uterine activity in order to improve uteroplacental blood flow and fetal oxygenation.
  -Turn patient onto left side to aid uteroplacental blood flow
  - Discontinue or decrease oxytocin infusion dependant on CTG anomaly
  - Remove prostin E2 vaginal tablet if possible
  - Inform 2nd on call Obstetrician
  - Continuous CTG monitoring
  - Consider **terbutaline subcutaneous injection 250 micrograms** (tocolytic) if abnormal CTG and not secondary to oxytocin infusion). Decision only by 2nd on call Obstetrician.
- Expedite delivery if CTG abnormalities persist or confirmed fetal compromise after use of tocolytics, dependent on stage of labour.
- Prepare theatre for emergency Caesarean section while the above procedures are being undertaken. Ensure staff available.
- Following the resolution of hyperstimulation and the CTG abnormalities, wait a further 20 minutes before recommencing oxytocin.
- Recommence oxytocin at the starting rate and continue as per protocol

6.7 Post Delivery

Prolonged labour and use of oxytocin is associated with an increase in PPH. If oxytocin was used reduce gradually, leave IV cannula in until bleeding settled.

7 Monitoring

7.1 Compliance and Effectiveness Monitoring

Compliance with this policy will be monitored as outlined in the table below.

7.2 Compliance and Effectiveness Monitoring Table

Monitoring Criterion	**Response**
Who will perform the monitoring?	Maternity Services
What are you monitoring?	a. Membrane sweep is offered. b. When Induction of Labour should take place. c. maternal observations prior to the establishment of

	labour recorded. d. fetal observations carried out during induction prior to the establishment of labour recorded. e. Written evidence of the development of an individual management plan when induction of labour fails. f. Written evidence that discussion had taken place regarding maternal requests for induction of labour. g. Written evidence of the development of an individual management plan when induction of labour is declined. h. Continuous CTG following commencement of Syntocinon. i. Syntocinon regimen followed and documented on partogram. j. Process for Induction of Labour for:- prolonged Pregnancy preterm prelabour rupture of membranes prelabour rupture of membranes at term previous caesarean section fetal growth restriction maternal diabetes intrauterine death
When will the monitoring be performed?	Annually - notes reviewed each month
How are you going to monitor?	Safeguard reporting of any incidents
What will happen if any shortfalls are identified?	Audit results shared with Obs & Gynae operational Group Action plan formulated
Where will the results of the monitoring be reported?	Obs and Gynae Assurance Meeting
How will the resulting action plan be progressed and monitored?	via Obs and Gynae Assurance Meeting
How will learning take place?	Mandatory days ,team meetings, Staff bulletins

8 Associated Documentation

8.1 References

Bakker JJH, Van der goes BY, Pel M er al (2013) Morning versus evening induction of labour for improving outcomes. Cochrane Database of Systematic Reviews issue 2 CD007707

Gulmezoglu AM, Crowther CA, Middleton P. (2012) Induction of labour for improving birth outcomes for women at or beyond term. *Cochrane Database of Systematic Reviews 2006, issue 6CD4945.*

Hedegaard M, Lidegaard O, Skovlund CW, Morch, LS.(2015) Perinatal outcomes following an earlier post-term induction of labour policy: a historical cohort study. BJOG 2015.

NICE (2014) Intrapartum Care: Care of healthy women and their babies during childbirth. London NICE.

NICE (2008) Induction of labour. London NICE. CG 70

NICE (2008) Antenatal Care for Uncomplicated Pregnancies. CG62

Royal College of Obstetricians and Gynaecologists (2013) Induction of labour at term in older mothers. Paper 34.

Royal College of Obstetricians and Gynaecologists (2016) Patterns of Maternity Care in English NHS Hospitals 2013/14.

Wei S,Wo BL, Qi HP, et al; (2013) Early amniotomy and early oxytocin for prevention of, or therapy for delay in the first stage spontaneous labour compared with routine care. Cochrane Database Syst Rev. 2013 Aug 7;8: CD006794.

World Health Organisation (2011) WHO recommendations for induction of labour.

8.2 Associated Documents

This Induction of labour guideline refers to the following CDDFT Trust policies and procedures:

- Failure to progress guideline
- Preterm pre labour rupture of membranes guideline
- Twins guideline
- Fetal surveillance guideline
- Diabetic guideline
- VBAC guideline
- Normal labour guideline
- Multiple pregnancy guideline
- Pre labour rupture of membranes
- IUD guideline

- Chorioamniontis policy
- Small for gestational age guideline

This Induction of labour guideline refers to the following guidance, including national and international standards:

- CG62 NICE (2008) Antenatal care: routine care for the healthy pregnant woman.
- NICE (2007) Diabetes in pregnancy: management of diabetes and its complications from pre-conception to the post-natal period.
- CG 70NICE (2008) Induction of Labour.
- NICE (2011) Caesarean section

  QS 60 NICE (2014) Quality standard. Induction of labour. 60.
- NICE (2014) Intra-partum care: care of the healthy woman and their babies during childbirth

9 Appendices

Appendix 1 – Membrane Sweeping

Appendix 2 – Oxytocin Infusion Regime

Appendix 3 – Equality Impact Assessment

Appendix 1 – Membrane Sweeping

- The theory behind sweeping the membranes is that it stimulates prostaglandin and the synergistic uterotonic action of oxytocin to induce labour (Foong et al 2000).
- There is no evidence that sweeping the membranes increases the risk of maternal or neonatal infection, or of premature rupture of the membranes. (Boulvain et al 2001, 2002).
- The National Institute for Clinical Excellence (NICE) recommends that membrane sweeping be offered to women prior to the formal induction of labour (NICE 2001).
- Offer to women with uncomplicated pregnancies at 39 and 40 completed weeks if primips and at 40 weeks if multips.
- Confirm dates.
- Check ultrasound report to confirm position of placenta - exclude placenta praevia.
- Give full explanation and obtain informed consent.
- Encourage bladder emptying prior to procedure.
- Abdominal palpation prior to ensure engagenment of fetal head.
- If any concerns with high presenting part/ unstable lie/ malpresentation refer to Consultant for management plan.
- Auscultate fetal heart before procedure
- Perform vaginal examination and assess Bishops Score
- Perform membrane sweep by digitally separating 2-3cm of the membranes from the lower uterine segment, rotating the finger at least twice through 360 degrees. If the cervix is close, it should be massaged.
- Auscultate fetal heart following procedure.
- Complete documentation in hand held notes/ care pathway.
- Ensure woman has contact numbers, advise may experience some bleeding but if excessive to call labour ward
- Plan for future care if the woman does not go into labour, depending upon Bishops score arrange IOL as necessary. (Arrange admission for prostin or direct admission to labour ward).
- Give woman information leaflet.
- If induction declined after a fully informed discussion refer to consultant to develop individual management plan.

Modified Bishops Score

	Pelvic score			
Cervical feature	**0**	**1**	**2**	**3**
Dilatation (cm)	**<1**	**1-2**	**2-4**	**>4**
Length of cervix (cm)	**>4**	**2-4**	**1-2**	**<1**
Station (relative to ischial spine)	**-3**	**-2**	**-1/0**	**+1/+2**
Consistency	**Firm**	**Average**	**Soft**	**-**
Position	**Posterior**	**Mid/anterior**	**-**	**-**

Appendix 2

Appendix 2 – Oxytocin infusion Regime

- Oxytocin should not be started within 6 hours following administration of dinoprostone E2 (prostin E2)

- Caution is required for its use in multiparous women or VBAC; in these circumstances oxytocin should be used at the discretion of the Consultant Obstetrician.

- **10 units oxytocin in 500 mls sodium chloride 0.9%** via volumetric pump.

- Regimen to be prescribed and signed by senior medical staff on prescription Kardex.

- Using the regimen set out below
    - increase the infusion rate until contractions are: 4-5 in 10 minutes

    - Only 3-4 contractions in 10 minutes for VBAC

- If epidural is to be sited only stop the oxytocin infusion if requested by the Anaesthetist or if the woman is too uncomfortable to be fully co-operative. Resume the oxytocin at half the finishing rate and then continue rate changes from then.

- N.B. Regime is the same irrespective of parity.
- **Should not progress beyond 60 mls per hour without discussion with Senior Medical Staff**

Time after starting (mins)	Volume infused mls per hour
0	3
30	6
60	12
90	24
120	36
150	48
180	60
210	***72***

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