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Related Trust Policies (to be read in conjunction with)	(Refer to the main body of the text) 04071 Standard Infection Prevention 04072 Hand Hygiene 08014 Guideline for management of fetal blood sampling 09007 Guideline for the management of bladder care

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3.1	Sarah Moon	Clarification to 7.6, 12.0 and 15.3	October 2012
3.2	Sarah Moon	Number sequencing at 7.0	December 2012
3.3	Deb Cobie	Clarification to point 12.4	November 2014
4.0	Abisola Adeleye, Obstetric Registrar		6th October 2015
5.0	Anita Dutta	Full review	23rd November 2018

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22. Appendices

A. Appendix A - Classification for operative vaginal delivery
B. Appendix B - Indications for operative vaginal delivery
C. Appendix C - Pre-requisites for operative vaginal delivery

1.0 Purpose

1.1 The aim of this guideline is to provide up-to-date information and guidance on the use of the forceps and vacuum extractor for both rotational and non-rotational operative vaginal deliveries.

2.0 Equality and Diversity

2.1 Mid Essex Hospital NHS Trust is committed to the provision of a service that is fair, accessible and meets the needs of all individuals.

3.0 Prevalence

3.1 Operative vaginal delivery rates have remained stable at between 10% and 13% in the UK.

4.0 Preparation for Operative Vaginal Delivery

4.1 The following outlines the procedures to be conducted prior to performing an operative vaginal delivery:

- **Full abdominal palpation:**
  Head is **≤ 1/5 palpable** per abdomen

- **Vaginal examination:**
  i. Vertex **presentation**
  ii. **Cervix** is fully dilated and the membranes ruptured
  iii. Exact **position** of the head can be determined so proper placement of the instrument can be achieved
  iv. **Pelvis** is deemed adequate
  v. Assessment of caput and moulding

- **Mother:**
  i. Verbal consent should be obtained for operative vaginal deliveries that take place in the delivery room; a clear explanation should be given and documented accurately in the 'Operative delivery and theatre care record'. For a trial of vaginal operative delivery, written consent should be obtained prior to transfer to obstetric theatre
  (Refer to point 9.1)
  ii. Appropriate and effective analgesia is in place, for mid-cavity rotational deliveries this will usually be a regional block
  iii. A pudendal block may be appropriate, particularly in the context of urgent delivery.
  iv. Maternal bladder has been emptied recently. Indwelling catheter (IDC) should be removed or balloon deflated
  v. The patient's legs should be placed in the lithotomy position
  vi. Use aseptic techniques.

- **Staff:**

i. The obstetric registrar/consultant on call must have the knowledge, experience and skills necessary to use the instruments
ii. Adequate facilities and back-up personnel are available
iii. Back-up plan in place in case of failure to deliver
iv. Anticipation of complications that may arise (i.e. shoulder dystocia, postpartum haemorrhage).
v. Paediatric senior house officer/registrar present who are trained in neonatal resuscitation.

5.0 Factors to Reduce the Decision for an Operative Vaginal Delivery

5.1 All patients should be encouraged to have continuous support during labour, as research has identified that a reduction in the incidence of operative vaginal delivery was evident particularly when the carer was not a member of staff. Use of any upright or lateral position, compared with supine or lithotomy positions was associated with a reduction in assisted deliveries.

5.2 Oxytocin in primiparous patients with epidurals will decrease the need for operative vaginal delivery.

5.3 Delayed pushing in primiparous patients with an epidural will reduce the risk of rotational and mid-cavity deliveries.

6.0 Classification of operative vaginal delivery

6.1 A standard classification of operative vaginal delivery should be used.
(Refer to appendix A)

7.0 Indications of Operative Vaginal Delivery

7.1 A standard classification of operative vaginal delivery should be used and obstetricians should be aware that no indication is absolute. Each case should be considered on an individual basis.
(Refer to Appendix B).

7.2 Operative intervention is used to shorten the second stage of labour. It may be indicated for conditions of the fetus or of the mother.
(Refer to Appendix B).

7.3 Vacuum extraction should not be used below 34+0 weeks gestation because of the susceptibility of the preterm infant to cephalohaematoma, neonatal jaundice as well as haemorrhage (subgleal/intracranial). Its safety between 34+0 and 36+0 weeks gestation is uncertain hence should be used with caution.

7.4 Forceps can be used for the after coming head of breech and in situations where maternal effort is impossible or contraindicated.

7.5 Fetal bleeding disorders (e.g. alloimune thrombocytopenia) or predisposition to fractures (e.g. osteogenesis imperfecta) are relative contraindications to operative vaginal delivery. Face presentation is an absolute contraindication.

7.6 Blood-borne viral infections of the mother are not a contra-inidication to operative vaginal delivery, however, it is sensible to avoid difficult operative delivery, fetal scalp clips or blood sampling during labour.

7.7 The indication for operative vaginal delivery should be recorded in the 'Operative Delivery and Theatre Care Record'.

8.0 Conditions for Safe Operative Vaginal Delivery

8.1 Safe operative vaginal delivery requires a careful assessment of the clinical situation, clear communication with the patient and healthcare personnel and expertise in the chosen procedure.

8.2 The operator should have the knowledge, experience and skills necessary to use the instruments and manage complications that may arise. The following obstetric staff can perform an operative vaginal delivery:

- Obstetric consultant
- Obstetric registrar
- Career obstetric senior house officer (SHO) under supervision from the obstetric registrar/consultant

9.0 Place of Operative Vaginal Delivery

9.1 Operative vaginal births that have a higher rate of failure should be considered a trial and conducted in the **obstetric theatre** where immediate re-course to caesarean section can be undertaken. Trial of operative vaginal delivery requires written consent and should be obtained prior to the procedure. In addition, assisted operative vaginal delivery undertaken in the labour room requires verbal consent. This should be documented both in the appropriate consent form and in the 'Operative delivery and theatre care record'.

9.2 An experienced obstetrician should be present from the outset for all attempts at rotational or mid-cavity operative vaginal delivery.

9.3 Higher rates of failure are associated with:

- Maternal body mass index greater than 30
- Estimated fetal weight greater than 4000 g
- Occipito-posterior position
- Mid-cavity delivery or when 1/5 head palpable per abdomen

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10.0 Choice of Instruments Used for Operative Vaginal Delivery

10.1 The obstetric registrar/ consultant on call should choose the instrument most appropriate to the clinical circumstances and their level of skill.

10.2 Forceps and vacuum extraction are associated with different benefits and risks. The options available for rotational delivery include Kielland forceps, manual rotation followed by direct traction forceps or rotational vacuum extraction.

10.3 Rotational deliveries should be performed by experienced practitioners, the choice depending upon the expertise of the individual obstetrician.

10.4 A Cochrane systematic review of recent research highlighted the following regarding the vacuum extractor compared with the forceps which are:

- More likely to fail at achieving vaginal delivery
- More likely to be associated with cephalhaematoma
- More likely to be associated with retinal haemorrhage
- More likely to be associated with maternal worries about baby
- Less likely to be associated with significant maternal perineal and vaginal trauma
- No more likely to be associated with delivery by caesarean section
- No more likely to be associated with low 5-minute Apgar scores
- No more likely to be associated with the need for phototherapy

11.0 When Should Operative Vaginal Delivery be Abandoned?

11.1 Operative vaginal delivery should not be attempted unless the criteria for safe delivery have been met.
(Refer to Appendix C)

11.2 Operative vaginal delivery should be abandoned where there is no evidence of progressive descent with each pull or where delivery is not imminent following three pulls of a correctly applied instrument by an experienced operator.

11.3 Adverse outcomes, including unsuccessful forceps or vacuum delivery, should trigger an incident report as part of effective risk management processes.

11.4 Paired cord blood samples should be processed and recorded following all attempts at operative vaginal delivery.
(Refer to 'Guideline for management of fetal blood sampling'. Register number 08014).

12.0 Place for Sequential Use of Instruments

12.1 Sequential instruments should only be used when a rotational delivery is required and when the vacuum/kiwi cup has slipped during an attempted 'pull'; furthermore, in particular situations when there is poor maternal effort.

12.2 The following points are mandatory when considering the use of sequential instruments:

- The obstetric registrar/ consultant on call should confirm the position of fetal head prior to application of the second instrument
- There should be progressive descent of the fetal head with each pull

12.3 The use of sequential instruments is associated with an increased risk of trauma to the infant. However, the obstetrician must balance the risks of a caesarean section following failed vacuum extraction with the risks of forceps delivery following failed vacuum extraction.

12.4 In the event that a Kiwi/Ventouse delivery is unsuccessful in the delivery room, consideration should be given to the transfer to theatre before the use of the sequential (second) instrument.

13.0 The Role of Episiotomy for Operative Vaginal Delivery

13.1 The role of episiotomy for operative vaginal delivery should be evaluated on an individual basis pertaining to each case.

14.0 Place of Prophylactic Antibiotics

14.1 There is insufficient data to make recommendations regarding prophylactic antibiotics in operative vaginal delivery.

14.2 Effective standards of hygiene and aseptic techniques are required.

15.0 Aftercare Following Operative Vaginal Delivery

15.1 Patients should be reassessed after an operative delivery for risk factors for venous thrombo-embolism.

15.2 Analgesia should be given after delivery. Regular paracetamol and ibuprofen should be considered after an operative vaginal delivery in the absence of contraindications.

15.3 Precautions for care of the bladder after delivery. The timing of the initial voiding of urine should be monitored and documented in the 'Postnatal care record – maternal'
(Refer to guideline for the management of bladder care. Register number 09007)

15.4 If postpartum urinary retention is suspected a fluid balance chart should be commenced post-void residual should be measured.
(Refer to guideline for the management of bladder care. Register number 09007)

15.5 Patients who have had spinal anaesthesia or epidural anaesthesia that has been topped up for a trial of labour may be at increased risk of retention and should be

offered an indwelling catheter, to be kept in place for at least 12 hours following delivery to prevent asymptomatic bladder overfilling.

15.6 Patients should be offered physiotherapy directed strategies to prevent urinary incontinence.
(Refer to guideline for the management of bladder care. Register number 09007)

15.7 Obstetric SHO/registrars should review the patient prior to hospital discharge and discuss the indication for operative delivery, management of any complications and the prognosis for future deliveries.

15.8 Advise patients for future deliveries. Patients should be encouraged to aim for a spontaneous vaginal delivery in a subsequent pregnancy, as there is a high probability of success.

16.0 Staff and Training

16.1 Obstetricians must have the knowledge, experience and skills necessary to use the instruments and manage complications that may arise.

16.2 Obstetricians should achieve experience in spontaneous vaginal delivery prior to commencing training in operative vaginal delivery.

16.3 Obstetric trainees should receive appropriate training in operative vaginal delivery. Competence should be confirmed prior to conducting unsupervised deliveries; this can be facilitated by training courses such as: ALSO and ROBUST.

17.0 Infection Prevention

17.1 All staff should follow Trust guidelines on infection prevention by ensuring that they effectively 'decontaminate their hands' before and after each procedure.

17.2 All staff should ensure that they follow Trust guidelines on infection prevention, using Aseptic Non-Touch Technique (ANTT) when carrying out procedures i.e. conducting operative vaginal deliveries and obtaining blood samples.

18.0 Audit and Monitoring

18.1 Audit of compliance with this guideline will be considered on an annual audit basis in accordance with the Clinical Audit Strategy and Policy (register number 08076), the Corporate Clinical Audit and Quality Improvement Project Plan and the Maternity annual audit work plan; to encompass national and local audit and clinical governance identifying key harm themes. The Women's and Children's Clinical Audit Group will identify a lead for the audit.

18.2 As a minimum the following specific requirements will be monitored:

- Operative vaginal delivery, which as a minimum must include:
- Who can perform the procedure
- Assessment prior to performing the procedure

- Documentation of why the procedure is indicated
- Documentation of informed consent
- Ensuring effective analgesia
- Care of the bladder
- When to use sequential instruments
- When the procedure should be abandoned
- Care following operative vaginal delivery

18.3 A review of a suitable sample of health records of patients to include the minimum requirements as highlighted in point 18.2 will be audited. A minimum compliance 75% is required for each requirement. Where concerns are identified more frequent audit will be undertaken.

18.4 The findings of the audit will be reported to and approved by the Multi-disciplinary Risk Management Group (MRMG) and an action plan with named leads and timescales will be developed to address any identified deficiencies. Performance against the action plan will be monitored by this group at subsequent meetings.

18.5 The audit report will be reported to the monthly Directorate Governance Meeting (DGM) and significant concerns relating to compliance will be entered on the local Risk Assurance Framework.

18.6 Key findings and learning points from the audit will be submitted to the Clinical Governance Group within the integrated learning report.

18.7 Key findings and learning points will be disseminated to relevant staff.

19.0 Guideline Management

19.1 As an integral part of the knowledge, skills framework, staff are appraised annually to ensure competency in computer skills and the ability to access the current approved guidelines via the Trust's intranet site.

19.2 Quarterly memos are sent to line managers to disseminate to their staff the most currently approved guidelines available via the intranet and clinical guideline folders, located in each designated clinical area.

19.3 Guideline monitors have been nominated to each clinical area to ensure a system whereby obsolete guidelines are archived and newly approved guidelines are now downloaded from the intranet and filed appropriately in the guideline folders. 'Spot checks' are performed on all clinical guidelines quarterly.

19.4 Quarterly Clinical Practices group meetings are held to discuss 'guidelines'. During this meeting the practice development midwife can highlight any areas for further training; possibly involving 'workshops' or to be included in future 'skills and drills' mandatory training sessions.

20.0 Communication

20.1 A quarterly ‘maternity newsletter’ is issued and available to all staff including an update on the latest ‘guidelines’ information such as a list of newly approved guidelines for staff to acknowledge and familiarize themselves with and practice accordingly.

20.2 Approved guidelines are published monthly in the Trust’s Focus Magazine that is sent via email to all staff.

20.3 Approved guidelines will be disseminated to appropriate staff quarterly via email.

20.4 Regular memos are posted on the guideline notice boards in each clinical area to notify staff of the latest revised guidelines and how to access guidelines via the intranet or clinical guideline folders.

21.0 References

Royal College of Obstetricians and Gynaecologists (2011) Operative vaginal delivery RCOG green top guidelines: London; January.

Hinshaw, K (2010) Operative Vaginal Delivery Techniques. Joint RCOG/BMFMS meeting. London: RCOG

Appendix A

Classification for Operative Vaginal Delivery

1.1 Term Definition

- **Outlet**
  Fetal scalp visible without separating the labia.
  Fetal skull has reached the pelvic floor.
  Sagittal suture is in the anterior-posterior diameter or right or left occiput anterior or posterior position (rotation does not exceed 45 degrees).
  Fetal head is at or on the perineum.

- **Low**
  Leading point of the skull (not caput) is at station plus 2 cm or more and not on the pelvic
  floor
  - **Two subdivisions:**
  (a) Rotation of 45 degrees or less from the OA position.
  (b) Rotation of more than 45 degrees including the OP position.

- **Mid**
  Fetal head is no more than1/5 palpable per abdomen.
  Leading point of the skull is above station plus 2 cm but not above the ischial spines
  -**Two subdivisions:**
  (a) Rotation of 45 degrees or less from the OA position.
  (b) Rotation more than 45 degrees including the OP position.

- **High**
  Not included in classification as operative vaginal delivery is not recommended where the head is 2/5 or more palpable abdominally and the presenting part is above the level of the ischial spines.

Appendix B

Indications for Operative Vaginal Delivery
Type of Indication • **Fetal** : Presumed fetal compromise • **Maternal** : Medical indications to avoid valsalva effects of the second stage (i.e. cardiac disease Class III or IV, a hypertensive crises, cerebral vascular disease, particularly uncorrected cerebral vascular malformations, myasthenia gravis, spinal cord injury) • **Inadequate progress**: Nulliparous women: lack of continuing progress for three hours (total of active and passive second stage labour) progress with regional anaesthesia, or two hours without regional anaesthesia Multiparous women: lack of continuing progress for two hours (total of active and passive second stage labour) with regional anaesthesia, or one hour without regional anaesthesia Maternal fatigue/exhaustion a New York Heart Association classification

Appendix C

Pre-requisites for Operative Vaginal Delivery
• Preparation essential • Full abdominal Head is ≤ 1/5 palpable per abdomen and vaginal vertex presentation Examination; cervix is fully dilated and the membranes ruptured • Exact position of the head can be determined so proper placement of the instrument can be achieved • Pelvis is deemed adequate • Mother Informed consent must be obtained and clear explanation given • Appropriate analgesia is in place, for mid-cavity rotational deliveries this will usually be a regional block • A pudendal block may be appropriate, particularly in the context of urgent delivery • Maternal bladder has been emptied recently • Indwelling catheter should be removed or balloon deflated • Aseptic techniques • Staff Obstetrician must have the knowledge, experience and skills necessary to use the instruments • Adequate facilities and back-up personnel are available • Back-up plan in place in case of failure to deliver • Anticipation of complications that may arise (e.g. shoulder dystocia, postpartum haemorrhage) • Personnel present who are trained in neonatal resuscitation