Worcestershire Acute Hospitals NHS Trust

Manual Vacuum Aspiration (Outpatient Surgical Management of Miscarriage under Local Anaesthetic)

This guidance does not override the individual responsibility of health professionals to make appropriate decision according to the circumstances of the individual patient in consultation with the patient and /or carer. Health care professionals must be prepared to justify any deviation from this guidance.	
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Lead Clinicians in service provision

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Key amendments to this guideline

Date	Amendment	Approved by:
29th December 2023	Document extended for another 6 months whilst under review.	Alex Blackwell
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Contents

1. Introduction

Early miscarriage is defined as the loss of pregnancy within the first 12 weeks of gestation where an empty pregnancy sac or sac with fetus and no fetal heart activity is identified. Approximately 15%-20% of all clinically recognisable pregnancies end in miscarriage and this can cause considerable distress to the patient, partner and the family.

Treatment and care should take into account women's needs and preferences in addition to the clinical indication. Treatment options available for the management of miscarriage include conservative, medical and surgical management. For surgical management of miscarriage (SMM), NICE guideline [CG154] recommends to offer the women a choice of MVA under local anaesthetic in an outpatient or clinic setting or surgical management in a theatre under general anaesthetic.

Manual vacuum aspiration (MVA) is a simple alternative procedure to electric suction or dilatation and curettage for evacuation of the uterine contents in surgical management of miscarriage or in termination of pregnancy. The MVA procedure is performed with a 60ml hand-operated vacuum syringe, typically under local anaesthetic. MVA is endorsed by a number of professional bodies in the UK including the Royal College of Obstetricians and Gynaecologists UK, the British Society of Abortion Care Providers and the Association of Early Pregnancy Units as it is accessible, easy to deliver, does not require a general anaesthetic, cost-effective and has a high safety profile. There is a plethora of evidence for patient satisfaction and acceptability of MVA in an outpatient setting.

An audit of Surgical Management of Miscarriage in March 2019 in Worcestershire Acute Hospitals NHS Trust revealed a mean waiting time of 5 days for elective SMM and anecdotal experience of the Early Pregnancy Assessment Unit (EPAU) staff attempting to book SMM report that the process is very time consuming.

Outpatient MVA services have been introduced in Worcestershire Acute Hospitals NHS Trust to improve the waiting times for the SMM, expand patient choice, improve patient experience and patient safety as procedures under general anaesthetic carry higher risk for some women, for example those with high BMI or COPD.

This guideline provides details of patient selections, indications, contraindications, roles & responsibilities of the medical and nursing staff involved, booking process, procedural aspects, analgesia/ local anaesthesia and procedure related complications regardless of the location of the procedure.

2. Objectives

1) To provide evidence-based guidance on the use of MVA in the surgical management of miscarriage

2) To facilitate a consultant-led service for women choosing MVA under local anaesthetic in the outpatient setting

3. Policy Scope

This policy applies to all medical, nursing and support staff, students, NHSP and agency staff, staff employed on honorary contracts who are involved with provision of care for women with early miscarriages attending Worcestershire Acute Hospitals NHS Trust.

4. Document Definitions and Abbreviations

EPAU	Early Pregnancy Assessment Unit
EGAU	Emergency Gynaecology Assessment Unit
WHU	Women's Health Unit
MVA	Manual Vacuum Aspiration
SMM	Surgical Management of Miscarriage
NICE	National Institute for Clinical Excellence
SHO	Senior House Officer
PO	per oral
Mg	milligram
TTO	To Take Out – medication to take home
BD	Twice per day
VTE	Venous Thromboembolism
LMWH	Low Molecular Weight Heparin
POC	Products of Conception
LA	Local Anaesthetic
PID	Pelvic Inflammatory Disease
STI	Sexually Transmitted Infections
HVS	High Vaginal Swab
IU	International Units
CRL	Crown rump length
LLETZ	Large loop excision of the transformation zone
DMPA	Depot Medroxyprogesterone Acetate
IUS	Intrauterine system
IUD	Intrauterine device
FBC	Full blood count
G&S	Group and save

5. Duties and Responsibilities

5.1 Gynaecology Medical Staff

Gynaecology Registrar On-Call (middle grade)

- Gynaecology Registrar on-call to review the patient and confirm suitability for MVA procedure, seeking appropriate advice from the Gynaecology Consultant if necessary
- Gynaecology Registrar on-call should consent the patient for the procedure using the Trust's e-consent form for Evacuation of Retained Products (section 7.7)
- Delegated consent for the procedure is suitable to be taken by an appropriately trained EPAU/EGAU nursing staff (and on the Trust register as trained to take delegated consent for this procedure)
- Gynaecology Registrar or SHO (junior doctor) to prescribe Misoprostol 400 micrograms at least 1-2 hours before the procedure (see section 8.5), antiemetic (Cyclizine 50mg, PO),

pre-operative analgesia (Ibuprofen 800mg, PO) and post-operative TTO's for antibiotics (Doxycycline 100mg, PO, BD for 3 days (see section 7.5 & 7.6))
- If the patient has contraindications to nonsteroidal anti-inflammatory drugs (NSAIDs), paracetamol and/or codeine can be used
- Check the Rhesus status and prescribe anti D if required (see section 17).
- Undertake VTE assessment as per Appendix 3 and prescribe postoperative prophylactic LMWH for 7 days if indicated
- Seek further advice from the Consultant on-call/Consultant leads for MVA or from the Haematology Consultant on-call, should the patient require preoperative VTE prophylaxis
- Discuss the full range of reversible contraceptive options (see section 6)

The doctors performing the procedure:

- The Consultant/Gynaecology Registrar trained to undertake MVA to see the patient prior to the MVA appointment to explain the procedure and obtain consent (see section 7.7)
- Ensure the Care Pathway for Outpatient MVA is commenced (appendix 4)
- Ensure Pregnancy Tissue Examination Consent Form (appendix 6) is completed
- Check results of the genital swabs undertaken at booking
- Check the pre-procedure check list completed by the nursing/HCA staff for relevant information and complete the procedure check list (MVA Care Pathway, Appendix 4)
- Following the procedure, the POC aspirated should be sent for examination if the patient has consented to this
- For cytogenetic studies (in recurrent miscarriage situation only), the POC should be sent dry in a pot to the lab with the Genomic Studies request form (Birmingham Women's Hospital) and ICE request and Pregnancy Tissue Examination Consent Form (appendix 6)
- Inform the patient that the results will be conveyed to her and the GP once the results are available and may take up to a few weeks as it is sent to the reference laboratory outside the hospital
- For histological examination, the POC should be put into a formalin pot with an ICE request and the Pregnancy Tissue Examination Consent Form (appendix 6)
- Inform the patient that the results will be conveyed to her and the GP only in the event of abnormal results such as molar pregnancy
- Complete the online MVA data collection form following completion of the procedure on the H-Drive

5.2 Nurses in EPAU / EGAU

- Discuss appropriate management options for surgical management of miscarriage including the MVA procedure under LA
- Book patients who opt for MVA and are eligible for the procedure on to a suitable slot
- Discuss with the clinician carrying out the procedure before booking if pregnancy is complicated or any clinical queries re suitability for the procedure
- If Patient is bleeding heavily, discuss with the Gynaecology Consultant on-call whether the patient is clinically stable to wait for an MVA slot under LA

MVA's should only be booked:
  - When the Gynaecology Consultant on-call is available on site
  - Maximum of 2 MVA's per day
  - Monday – Friday within standard hours of 0900 - 1700h, the procedure and recovery should be completed before 1700h
  - Saturday and Sunday – maximum of 1 MVA, when the Gynaecology Consultant on-call is available on site

  - Other factors to consider: the availability of the clinician carrying out the procedure, the ambulatory gynaecology clinic diary workload (see section 7.9)

- Ensure full blood count, and a group & save
- Ensure the Rhesus status is checked and Anti D will be available on the day of the procedure (see section 17)
- Complete the Pregnancy Tissue Examination Consent Form to indicate the patient wishes for POC if not already completed by the medical team (Appendix 6)
- Consider screening for Chlamydia, Trachomatis and Gonorrhoea / HVS for patients at high risk of PID/STI
- Ensure prescription for Misoprostol, anti-emetic is completed by the Gynaecology on-call doctors (section 7.5) in readiness for admission day
- Provide the patient with verbal and written information (Surgical Management of Miscarriage – MVA patient information leaflet, found on the Trust Intranet under Key Documents, Gynaecology, EPAU) explaining what the procedure involves and what happens afterwards, how much pain and bleeding to expect to help them prepare for the MVA procedure. Patients should be encouraged to eat and drink before the procedure to reduce the incidence of hypoglycaemia and vasovagal episodes
- If nursing staff are trained to do so (and on the Trust register as trained to take delegated consent for this procedure), they may take the patient through the consent process to gain written, informed consent for the procedure
- Provide patient with information about the different options for sensitive arrangements for POC including cytogenetics, if the patient fulfils the criteria for investigation of recurrent miscarriage (3 or more consecutive miscarriages).
  - After the procedure, for cytogenetic studies, the POC should be sent dry in a pot to the lab with the Genomic Studies request form (Birmingham Women's Hospital) and ICE request and Pregnancy Tissue Examination Consent form (appendix 6)
  - Inform the patient that the results will be conveyed to her and the GP once the results are available and may take up to a few weeks as it is sent to the reference laboratory outside the hospital.
  - After the procedure, for histological examination, the POC should be put into a formalin pot with an ICE request and Pregnancy Tissue Examination Consent Form (appendix 6)
  - Inform the patient that the results will be conveyed to her and the GP only in the event of abnormal results such as molar pregnancy
- Advise patient to avoid driving following discharge after the procedure and arrange transport home
- Provide patient with the contact number for EGAU for advice and concerns
- Send all the paperwork via internal post to the relevant unit to be available on the day
- Liaise with the ward clerk and generate the appointment letter

5.3 Inclusion Criteria

5.3.1 For elective pathway- booked through EPAU/EGAU

- Haemodynamically stable patient
- Confirmed missed miscarriage / early embryonic demise ≤9+0 (or CRL ≤25mm) to 12+0 weeks
- Incomplete miscarriage, RPOC < 50mm
- Failed medical management of miscarriage
- Evacuation of haematometra

NB: Nursing and junior/middle grade medical staff should seek advice from the Gynaecology Consultant on-call regarding the suitability for outpatient MVA in the following scenarios (or if in doubt)

- small amount of RPOC <2cm on the scan and/or if vascularity noted in RPOC (this may suggest organised retained tissues which are unlikely to be evacuated by routine MVA. This may require carrying out SSM with hysteroscopy/USS guidance or interval hysteroscopic removal in 2-3 months if a follow up scan (booked under the on-call consultant) in 6-8 weeks confirms RPOC)
- Suspected molar pregnancy (not an absolute contraindication for MVA)
- Postpartum < 6 weeks (consider perform MVA under US guidance)
- Minor anatomical variations of bicornuate uterus – (consider perform MVA under US guidance)
- Previous cervical knife cone treatment or LLETZ procedure – this is not an absolute contraindication, please discuss with Consultant on-call

5.3.2 For emergency pathway

- Women admitted with bleeding and confirmed miscarriage or incomplete miscarriage who are haemodynamically stable
- Suspected infected RPOC (fever/offensive discharge/generalised lower abdominal pain) in an otherwise medically stable patient: consider MVA after 24hrs of antibiotic therapy

5.3.3 Exceptional circumstance in emergency situations

- In rare emergency situations of haemorrhage during miscarriage with cardiovascular compromise, MVA can be carried out by trained Consultant in a treatment room on the EGAU or in a suitable clinical area within A&E
- MVA kit should be ideally included in the emergency gynaecology equipment list available at the emergency department. Alternatively, MVA kit can be used as a running pack (borrowed from EGAU) if the procedure is needed in the emergency department
- In these exceptional and emergency life-threatening situations, the need for local anaesthesia may not be necessary, particularly if the cervical osteum is open or if administration of local anaesthetic may result in an unacceptable delay. However, concurrent analgesia must be considered such as Morphine 3-5mg slow intravenous injection / Fentanyl 50 - 100micrograms slow intravenous injection. This should be discussed with the CEPOD duty anaesthetist or senior clinician in the Emergency Department (ED) and administered by the ED medical staff or the anaesthetist

5.4 Exclusion Criteria

- Patients who do not give consent for SMM / MVA
- Any complex mental health problems or communication concerns impacting on consenting or communicating during the procedure e.g., language barrier
- Patients with excessive anxiety about the procedure or local anaesthetic techniques
- If patient will be alone at home in the 24 hours following the procedure
- Under 16 years of age
- Poor toleration of vaginal examination including vaginal speculum. If the patient did not require the above examinations during assessment, the healthcare professional assessing the suitability for MVA should discuss this with the patient
- Haemorrhagic disorder or receiving anticoagulants - unless plan made after discussion with the haematologist and agreed with the clinician scheduled to perform the MVA
- Suspected ectopic pregnancy
- Uterine anomalies – Uterine Didelphys or complete septate uterus.
- Women who have adverse reactions to local anaesthetic agents

6 Improving access to contraception

- At the booking of the procedure the Gynaecology Registrar or suitably qualified healthcare professional who has the knowledge and skills to provide all contraceptive options should discuss the full range of reversible contraceptive options (Medroxyprogesterone Acetate-DMPA [Depo-Provera®], contraceptive implant, intrauterine methods (IUS/IUD), oral contraceptives, contraceptive patches, vaginal rings or barrier contraception) with the patient, if the pregnancy was unplanned and/or there is no wish to conceive in the immediate future
- Patient should be advised to make an appointment with her doctor or the Sexual Health Services to arrange contraception as implants and prescriptions for oral, vaginal or transdermal contraceptive are not available via WAHT at present
- Initiation of contraception for those who desire should not be delayed as ovulation can occur in the next cycle
- Hormonal methods such as oral contraceptive pills, injectables and the contraceptive patch can be started on the day of the procedure or ASAP
- Implants and intrauterine contraceptive devices can be placed immediately after an uncomplicated procedure
- For any reasons, if the patient cannot be started on a method immediately, she should be counselled on the use of condoms.
- If the patient chooses to have contraceptive injection or intrauterine methods on the same day of the MVA, the patient should be provided with the relevant patient information leaflets
- The patient's choice on IUS/IUD/DMPA should be communicated to the unit where the procedure is booked and document in the notes (If Bluespier is used for booking, this can be documented)
- If the patient opts to have IUS or IUD, provided this is available, this should be added on to the consent form during the consenting process
- If the patient chooses to have DMPA, "Depot Medroxyprogesterone Acetate 150mg by deep intramuscular injection" should be prescribed on the chart by the Gynaecology on call registrar or the SHO
- Clinician performing the MVA procedure should also be trained to provide information on contraceptive options so that if the patient is uncertain of her contraceptive choice at the time of booking of MVA, further counselling can be undertaken prior to the procedure. In this case the team should endeavour to arrange the desired method of contraception instigated on the day of the MVA if feasible.

7. Procedure

7.1 Service Provision

This service is usually delivered in the EGAU setting for patients who meet the inclusion criteria.

In rare circumstances, an MVA may be arranged at the Women's Health Unit at the Alexandra Hospital. This would need prior arrangement and agreement with the Women's Health Unit Alexandra Hospital, the on-call consultant gynaecologist and the performing clinician.

MVA are not carried out at Kidderminster Treatment Centre.

7.2 MVA Staffing

As a minimum, one registered nurse and one health care assistant are required to support the clinician performing the MVA under LA in addition to the recovery and admitting staff.

7.3 Patient Assessment and Treatment Plan

Patient should be assessed by the EPAU/EGAU nursing staff and the Gynaecology Registrar on-call (sections 5.1 and 5.2)

7.4 Investigations

EPAU/EGAU nursing staff should ensure following investigations are carried out:

- FBC and G&S
- Group & Save
- Consider screening for Chlamydia, Trachomatis and Gonorrhoea / HVS for patient at high risk of PID/STI

7.5 Prescription for Cervical Preparation, Analgesia and Antiemetic

Doctor to prescribe the following pre-operative medication:

- Misoprostol: Misoprostol 400micrograms, sublingual to be given 1 hour before the MVA procedure. Misoprostol should be administered in the clinic on the day of the procedure.
- Mifepristone - If the patient is allergic or intolerant to Misoprostol, consider cervical priming with 200 mg of oral Mifepristone administered 24 to 48 hours before the MVA
- Cyclizine 50mg, PO. This should be administered 1-2 hours before the procedure at the clinic on the day of the procedure
- Ibuprofen 800mg, PO. Advise the patient to take Ibuprofen at home 2 hours prior to attendance for the procedure. If the patient had not taken this at home, it should be prescribed on attendance to the procedure
- If the patient has contraindications to nonsteroidal anti-inflammatory drugs (NSAIDs), paracetamol and/or codeine can be used

7.6 Screening for infections / Antibiotic prophylaxis

- Patients who are high risk of PID / STI undergoing surgical evacuation should be offered screening for Chlamydia, Trachomatis and Gonorrhoea and HVS
- Offer antibiotic post-procedure prophylaxis with oral Doxycycline 100 mg twice a day for 3 days [1].
- If allergic to Doxycycline, advice from Microbiologist should be sought

7.7 Consent

- Fully counsel about risks, benefits, alternatives and what to expect during the procedure
- Written, informed consent for the MVA procedure should be obtained by the Gynaecology Registrar on-call or EPAU/EGAU nursing staff (and on the Trust register as trained to take delegated consent for this procedure)
- The patient should be provided with a copy of the consent form along with the Surgical Management of Miscarriage – MVA patient information leaflet (found on the Trust intranet under Key Documents, Gynaecology, EPAU).This enables the patient to have sufficient time to read and understand the contents of the consent form and clarify queries if any prior to the procedure
- Well informed patients are less likely to be anxious and therefore perceive less pain. Knowing what to expect before, during and after the procedure can empower the patient to manage their pain during the procedure
- The Trust's e-consent form for Evacuation of Retained Products of conception can be used and local anaesthesia should be ticked as the type of anaesthesia. It is important to record the following additional risks on the form:
    - Discomfort and abdominal cramps during the procedure
    - The need for Misoprostol for safe cervical dilatation which can cause bleeding, pain and passage of products of conception
    - Possibility of abandoning the procedure if the patient is unable to tolerate or cervical dilation is difficult
    - Conversion to general anaesthetic
- EPAU/EGAU nursing staff /on-call Gynaecology medical staff should complete the Pregnancy Tissue Examination Consent Form (Appendix 6)
- On the day of the procedure, the doctor performing the procedure should check and confirm:
    - Consent form for Evacuation of Retained Products is complete and provide opportunity for the patient to confirm her understanding and clarify any queries re: the proposed procedure
    - Completion of Pregnancy Tissue Examination Consent Form (Appendix 6)

7.8 Provision of Patient Information leaflets

Patients should be provided with the Trust information leaflets on early pregnancy loss & miscarriage management options and Manual Vacuum Aspiration.

7.9 Booking process for MVA under Local Anaesthetic

Patients will be booked by the EPAU/EGAU nursing staff once a diagnosis of miscarriage is made and the patient chooses this option.

Booking procedure for EPAU/EGAU nursing staff:

- Appointments should be booked on EGAU into the EGAU diary, as available (following Section 5.2 criteria)
- **EPAU/EGAU nurses to liaise with the on call Gynaecology consultant/registrar prior to booking a slot for MVA, as per Section 5.2**
- In rare circumstances where the MVA will be carried out at the Women's Health Unit (WHU), the on-call Consultant should call a member of the Operational Team to ascertain whose clinic this appointment could be added to and request them to check that the clinician is happy to carry out the MVA
- The operational team will arrange for this to be booked via PAS

- The EGAU nursing team will be informed of the WHU appointment and contact the WHU Sister directly to inform them to enable any preparation (equipment and medical notes) to be sent
- In all cases EGAU nursing staff will prepare the patient for the procedure:
    - Ensure consent form for procedure and Pregnancy Tissue Examination Consent Form (Appendix 6) are completed
    - Ensure the Care Pathway for Outpatient MVA has been commenced to record the entire episode of care (Appendix 4)
    - Ensure relevant patient information leaflets (section 7.8) and necessary information are given to the patient
    - Ensure prescription for Misoprostol section 7.5 (anti D if indicated) is completed by the Gynaecology on-call doctors
    - Check the rhesus status and anti D should be arranged (section 17) to be available on the day
    - Inform the patient that fasting is not required for the MVA procedure under local anaesthesia
    - Advise the patient to avoid driving on discharge following the procedure and arrange a ride home
    - Ensure the patient will be admitted at least 90 minutes prior to the MVA procedure to allow administration of pre-medications.
    - Provide the patient with the contact number for EGAU should she require subsequent clarifications on the information provided or regarding the appointment or for any clinical advice for any concerns

8. Cervical priming

- For women who are having an MVA procedure offer cervical priming with 400 micrograms sublingual Misoprostol as per the NICE guideline on Abortion Care 2019
- Misoprostol should be prescribed at the time of booking of the MVA procedure
- Misoprostol should be administered after admitting the patient and 1 hour before the procedure
- The patient should be admitted at least 90 minutes prior the procedure time for preparation
- For patients who do not wish to have Misoprostol via sublingual route, 400 micrograms Misoprostol can be administered vaginally 2-3 hours before the procedure
- If Misoprostol cannot be used, consider cervical priming with 200mg oral Mifepristone given 24 to 48 hours before the procedure
- Explain to women that cervical priming:
    - reduces the risk of incomplete procedure (retained tissues) for women who are parous
    - makes dilation easier for women who are parous or nulliparous
    - shortens operative time by reducing the need for mechanical dilation, but this does not always translate into reduced pain throughout the procedure
    - could result in mild discomfort and vaginal bleeding

9 Pain Management for Outpatient MVA

9.1 Pain Management Before and During the Procedure

- Satisfactory pain control for patients undergoing MVA in an outpatient setting is important for patient comfort and satisfaction
- A multimodal approach to pain control (a combination of treatments) including preoperative NSAIDs, administration of local anaesthesia to the cervix and non-pharmacologic interventions such as the vocal local – a staff member dedicated to the

emotional support of the patient, visual or auditory distraction should be used to improve patient satisfaction during the procedure

- Preoperative NSAIDs reduce the postoperative pain therefore 800mg of Ibuprofen [2] should be administered orally, 1 hour before the procedure unless the patient is allergic/intolerant to NSAIDs, has a history of asthma that is worsened with NSAIDs or if the patient has already taken NSAIDs at home prior to attending the procedure.
- Verbal support techniques (support person, distraction) and music help women to cope with the procedure but do not necessarily reduce pain. Patients may listen to their own music using head phones; however, staff should be aware that this may pose difficulty in communicating with the patient. Therefore, establish a plan of communication with the patient prior to the procedure in these circumstances
- Oral opioids do not decrease procedural pain
- Oral anxiolytics decrease anxiety but not the experience of pain
- Paracetamol was found to be ineffective to relieve post-procedural pain following surgical abortion in randomised controlled trials and was similarly ineffective at reducing pain during medical abortion [2]. Therefore, the use of paracetamol is not recommended to decrease pain [4]. It should be however made available at the patient's request.

9.2 Post Procedure Pain Management:

- Pre-procedure pain relief with NSAIDs may be sufficient for post-procedure pain management
- Additional pain relief may be required
- In such cases, it is important to consider any underlying complications such as haematometra or perforation accounting for additional analgesic requirement
- Once reasonably sure that complications are not the reason for ongoing pain, additional pain relief management could be considered
- If preoperative analgesia (e.g. NSAID) had not been taken, the patient should be encouraged to take it if there are no contraindications to it. Rectal suppositories of Diclofenac Sodium 100mg could be considered for acute pain relief. However, administration of multiple NSAIDs should be best avoided as it is well recognised that taking multiple NSAIDs can lead to increased gastrointestinal adverse effects.
- If the patient is unable to take NSAIDs and pain is not settled with Codeine Phosphate 30-60mg and/or Paracetamol 1g, Tramadol Hydrochloride 100mg PO may be required
- Oral Morphine (Oromorph 10mg) or subcutaneous (10mg) / intravenous (5mg) Morphine may be seldom required if standard pain relief has not helped in achieving sufficient pain control
- As this is relatively uncommon, consideration should be given to admit the patient for observation and to rule out any complications
- NB, If the patient is having the MVA procedure at the WHU and further observation / rule out complications is required, the on-call Consultant should be contacted and EGAU NIC informed of the patient transfer. Patients should be transferred to EGAU by blue light ambulance for further assessment
- On discharge, the patient should be advised to take a further dose of NSAIDs (Ibuprofen 400-800mg not earlier than 6hrs after the procedure, as per BNF recommended dose) if required and has no contraindications to it
- Ibuprofen: maximum 2.4 g daily. Caution: high-dose Ibuprofen (≥ 2.4 g daily); use should be avoided in patients with established ischaemic heart disease, peripheral arterial disease, cerebrovascular disease, congestive heart failure (New York Heart Association classification II-III), and uncontrolled hypertension
- Alternative if patient is intolerant or has contraindications to NSAIDs: Codeine phosphate 30-60mg 4-6hrly

- Although there is no evidence for post procedure pain relief with Paracetamol, women's preference should be respected and advised to take 0.5–1 g every 4–6 hours; maximum 4 g per day
- There is no evidence-based recommendation regarding the effectiveness of antispasmodics eg. Buscopan (Hyoscine Butylbromide) in reducing pain associated with MVA and its use is at the discretion of the performing clinician

10 Anaesthesia for MVA

- MVA can be undertaken with:
    - local anaesthesia alone
    - conscious sedation (Entonox- inhaled mixture of nitrous oxide and oxygen gas) with local anaesthesia
    - deep sedation
    - general anaesthesia
- For outpatient setting, only the local anaesthesia with or without Entonox is used
- To help women make an informed choice, discuss the options with them and explain that having local anaesthesia means they will be able to spend less time in hospital
- Intravenous sedation and general anaesthesia for women who are anxious about the procedure are beyond the scope of this guideline as currently MVA services under deep sedation are not available. The general anaesthesia regimens are at the discretion of the duty anaesthetist (intravenous propofol and a short-acting opioid such as fentanyl is preferred over inhalational anaesthesia - NICE)
- The patient should be offered Entonox and instructed on how to use it in line with Guidelines for Administration of Entonox

11 Local Anaesthesia for MVA

- Intracervical (deep infiltration of the cervical stroma) and paracervical blocks (PCB) have similar effects
- PCB can be two sites (4 and 8 o'clock) or 4 sites (2, 4, 8 and 10 o'clock). Deep injection at 4 and 8 in comparison to 3 and 9 o'clock position reduces the risk of directly injecting in to uterine vessels
- Intracervical injection is performed at 3, 5, 7 and 9 o'clock in order to have the deep infiltration closer to the nerve innervation along uterine vessels
- Deep paracervical injections (3 cm) have been found to be more effective than shallow injections (1.5 cm)
- PCB /Intracervical block is performed by injecting the local anaesthetic continuously from superficial to deep (3 cm) to superficial
- Slower injection (>60 seconds) was found to be associated with less injection pain than a fast injection (>30 seconds.)
- Waiting 3 min to allow onset of action for infiltration of anaesthesia to the cervix does not improve pain scores
- Atraumatic tenacula are not associated with less pain than single-tooth tenacula
- Injection into the proposed tenaculum site on the lip of the cervix reduces pain with tenaculum placement
- Local anaesthetics that can be administered using a dental syringe are 3% Mepivercaine Hydrochloride (Scandonest® 3% plain), 3% Prilocaine Hydrochloride and felypressin (3% Citanest® DENTAL with Octapressin®) or 2% Lidocaine Hydrochloride with Adrenaline 1:80000 (Lignospan Special)
- It is important to administer to the full length of the needle to ensure 3cm deep penetration for effective anaesthesia and may have to use a long dental syringe to enable this depending on the body habitus

- See Appendix 5 for maximum doses for each local anaesthetic and local anaesthetic toxicity
- Intrauterine instillation of topical local anaesthetic (Instillagel® containing Lidocaine 200mg) using a sterile single use extension tube inserted into the external osteum (Instilaquil®) has been suggested by some clinicians performing MVA procedure. The anaesthetic takes about 5 to 10 minutes to work after the gel has been applied. No robust data is available at present for the efficacy and effectiveness before introducing this technique into routine clinical practice
- Although instillation of topical local anaesthetic into the cervical canal may not reduce pain, it may reduce the incidence of vasovagal reactions [8] therefore, instillation of intra-cervical Lidocaine gel is an option at the discretion of the performing clinician
- Nitrous Oxide in a 50/50 mixture (Entonox®) has the advantage of quick onset of action with analgesic, anxiolytic and sedative effects with short duration of action. The effects of the gas dissipate within minutes after administration is stopped
- Although Nitrous Oxide in a 50/50 mixture does not appear to reduce pain, it should be available at the request of the patient

12 Environment for Outpatient MVA

- Multipurpose procedure room that is quiet, relaxing and comfortable
- Health care staff caring the patient should have a calm, friendly, empathetic approach, be attentive to the patient's needs and concerns and respectful of the patient's privacy and confidentiality
- Recliner chair for recovery post procedure

13 Equipment/set up

See Appendix 1

14 Patient Preparation on the day of the Procedure

- The patient does not need to be fasted for the local anaesthetic MVA procedure
- Admit the patient 90 minutes before the procedure
- Admitting Nurse/HCA should complete the pre-procedure check list, MVA Care Pathway, Appendix 4
- An initial set of observations (pulse and blood pressure) should be taken and recorded in the case notes
- Encourage the patient to have analgesia 1-2hrs prior to the procedure
- Encourage the patient to void shortly before the procedure to avoid urinary bladder catheterisation and post-procedure urine retention
- Patient to remove undergarments in a separate changing room (or staff to leave the procedure room whilst the patient undresses) and wear a hospital gown or draw sheet wrapped around the waist
- The patient should be checked in by the clinician and introduced to the team
- The planned procedure should be reviewed with her and the confirmation of the consent form signed
- Ensure the **VTE assessment** is complete and Anti D prophylaxis has been arranged and prescribed if the patient is Rhesus negative and > 10 weeks of gestation (see section 17)
- A patient sticker is put in the clinic procedure log book and time noted
- Patient is positioned on the treatment couch, the legs supported on the leg rests with the hips flexed to about 45º maintaining symmetry of leg position

- HCA/nurse stands beside her to offer support. The patient should be kept covered until ready to commence the procedure

15 MVA Procedure

- The nurse will work from the working trolley providing necessary assistance to the clinician
- Check the device by releasing the valve to hear the "hiss noise" to ensure a vacuum is working
- The patient is positioned on the on dorsal lithotomy
- Bimanual examination is performed to assess the position of the uterus and cervix. The scan report/scan images may be used as an adjunct to find out the uterine position
- A Cusco's speculum is inserted to visualise the cervix
- Although there is no evidence that routine cleaning of the cervix with antiseptic solution will reduce the infection, it should be used at the clinician's discretion
- An appropriately sized uterine cannula is chosen. Usual guide is cannula size=gestation or one size smaller than the gestational age (e.g. if 9 weeks, the cannula size should be 9 or 8) but **not** one size above the gestation as sometimes practiced when SSM is conducted under GA. This is to have a snug fit to maintain vacuum during the MVA procedure
- Apply the tenaculum at the anterior lip (if uterus is anteverted) or the posterior lip (if uterus is retroverted) after injecting 2ml of anaesthetic at the tenaculum site in order to facilitate the straightening of the cervico-uterine axis by gentle traction
- Perform the PCB or intracervical block as described above Appendix 2
- The cervical os is gently dilated either with the rounded tip of the cannula, or alternatively, Hegar dilators can be used. It is important to allow the dilators to follow the natural curve of the cervical canal and force is not used. Instead gentle pressure to rotate the dilator whilst it traverses the cervical canal
- Use a no touch technique i.e. do not touch the tip of the cannula/dilator
- Following dilatation of the cervix, the MVA uterine cannula is introduced into the uterine cavity until it reaches the fundus. Note the length of the cavity then slightly withdraw 1-2 cm back in to the uterine cavity to avoid touching the fundus
- Perform the aspiration of products of conception as described below:
  - The MVA syringe is 'charged', that is, a vacuum is created by pressing distal valves of the syringe until they click into the locking position. The plunger is then pulled backwards to generate a vacuum, until it locks.
  - Keep the wings of the cannula, the valve wings and plunger arms in one plane for better orientation
  - Always hold the charged syringe from the body, not the plunger arms to prevent accidental release of the plunger.
  - The charged syringe is then attached to the cannula
  - In order to minimise the risk of uterine perforation, push the cannula into the syringe rather than syringe into the cannula when attaching the syringe to the cannula whilst the cannula is placed in the uterine cavity so that the cannula does not move forward into the uterus
  - Alternative is to attach the charged syringe to the cannula before the cannula is introduced in to the uterine cavity. Then advance the cannula until it gently touches the fundus and then withdraw it slightly
  - Once the cannula is in place and ready to commence the procedure, the proximal valves on either side of the syringe are released
  - The operator moves the syringe in a rotating motion (the idea of gently rotating the syringe 180 degrees keeping the syringe at a fixed length in the middle of the uterine

cavity i.e. "round and round" approach, is to allow intrauterine contents being aspirated into the cannula rather than trying to reach it with back and forth movements that could run the risk of uterine perforation. On the other hand, touching the fundus and or uterine walls is more painful). Very gentle in-and-out motion is performed whilst completing the procedure

- Vacuum decreases at approximately 80 percent, or if the syringe contains 50ml or more POC
- The syringe is then detached from the cannula. The contents of the syringe are emptied into a bowl. The syringe is charged again and reattached to the cannula and the process repeated until the uterine cavity is empty
- It is sometimes more efficient to have more than one “charged” aspirator available for use, particularly at higher gestations
- The decrease in vacuum however may occur before the aspiration is complete if the cannula is withdrawn past the osteum prematurely, if the cannula is clogged or due to incorrect assembly
- If the cannula becomes clogged, a lack of tissue or bubbles flowing into the aspirator will be noted. Caution: never try to unclog the cannula by pushing the plunger back in to the cylinder. To unclog, remove the cannula and remove the tissue clogging the cannula with a sterile pair forceps or sterile gauze
- If the cannula tip passes the os accidentally, the aspirator must be emptied and “recharged.”
- Complete aspiration of uterine contents is indicated by no further tissue seen passing through the cannula, appearance of pink froth and bubbles in the cannula, feeling of gritty sensation as the cannula passes over the surface of the evacuated uterus, uterus clamping down on the cannula making the cannula harder to move and the patient experiencing increasing cramps and back pain
- If any doubt of incomplete evacuation, USS should be undertaken immediately or arranged via radiology department if the clinician performing MVA procedure not qualified to undertake ultrasonography
- Sharp curettage is generally not indicated and is not routinely recommended following MVA
- Use of medications containing Oxytocin or Ergometrine is not recommended for prophylaxis to prevent excessive bleeding at the time of vacuum aspiration [4]
- Remove the cannula and examine the cervix for any bleeding from tenaculum site

- During the MVA procedure most women will feel a moderate amount of cramping that tends to increase when the uterus contracts at the end of the evacuation. After the procedure has ended, cramping usually decreases rapidly. This should be fully explained to the patient before the procedure
- It is important that the procedure is completed in its entirety and therefore keeping the patient talking / providing distraction during this time is helpful. However, the nurse will assess the patient’s ability to tolerate the discomfort and act as the patients advocate, communicating this with the clinician and team
- Use of USS: Pre- and post-procedure USS may be useful to assess uterine position and also to ensure completeness of the procedure. Real time USS could be used when MVA is performed in postpartum women and also to train the clinicians performing MVA where the trainer could assess the uterine cannula position

16 Post Procedure Management

- Sensitive communication is required due to the emotional impact of the miscarriage and MVA and support should be given to the patient and her family
- The products retrieved in the bowl should be inspected for confirmation of products of conception and sent for histology or cytogenetics if consented (refer to 'Pregnancy Tissue Examination Consent Form (appendix 6)
- Ensure that tissue is not visible to the patient by keeping the histology pot out of sight under the trolley unless the patient wishes to visualise it
- The Pregnancy Tissue Examination Consent Form must be followed to ensure the patient's wishes for POC are honoured
- If the POC are to be sent for histological examination, they MUST be sent in a Formalin histology pot with an ICE request and a copy of the Pregnancy Tissue Examination Consent Form (Appendix 6).
- If the POC are to be sent for Cytogenetic examination for investigation of recurrent miscarriage, they MUST be sent in a dry pot with an ICE request, the Birmingham Women's Hospital Genomics request form and a copy of the Pregnancy Tissue Examination Consent Form (Appendix 6).
- Bar codes stickers from all instruments used/opened must be stuck into the patients/nursing notes
- All trays and reusable instruments should be repackaged and returned for re-sterilisation
- When the patient is clean, dressed and ready, they can be taken to the recovery area
- Further analgesia should be given as necessary
- Nursing/clinicians' documentation is completed in patient notes and entry made in clinic diary of procedure if histology/cytogenetics samples been sent
- Refreshments are offered to the patient at an appropriate time during their recovery
- When the patient feels comfortable, the recovery nurse/HCA should request them to complete the patient satisfaction questionnaire (if 3-yearly audit is being carried out)
- Upon completion of the questionnaire, nurse/HCA should hand in the questionnaire to the receptionist
- The receptionist should file the questionnaire in the designated folder kept in EGAU Reception
- Administer Anti D once patient stable, if required (please see below).
- Post procedure pain management
- Clinician performing the MVA procedure should:
    - Provide information on contraceptive options if this had not already been addressed
    - Ensure VTE assessment is completed at booking for MVA and instigate the VTE prophylaxis plan taking any complications e.g. haemorrhage during the procedure into consideration.
    - Anti D is arranged if indicated prior to discharge
    - Complete clinic outcome form
    - Complete the online data collection form on the H:drive (MVA data collection folder) for audit purpose
- Observations (oxygen saturations, pulse, BP and respiratory rate) should be taken in the recovery area every 15 minutes for 30-60 minutes. It should be recorded in the NEWS chart and acted on according to Guidelines for the Use of Modified Early Warning System in Gynaecology.
- Any concerns during recovery should be escalated to the clinician who performed the MVA
- If oxygen saturation on pulse oximetry falls below 95%, oxygen should be administered until oxygen saturation can be sustained at 95% or above on air
- Naloxone must be kept in all areas where MVAs will be undertaken in the emergency drug cupboard in the unlikely case where opiates been used and overdose is suspected

- In most cases two sets of observation at 15 and 30min after the procedure are adequate. If these are within normal range and the patient is recovered, she should be discharged home with necessary advice
- For patients needing to stay more than 30 minutes, observations should be taken every 15 minutes in the first hour. If no concerns but not quite ready for discharge at this point, observations can be taken every 30 minutes

17 Anti D rhesus prophylaxis

- Explain the reasons and offer anti-D prophylaxis to women who are rhesus D negative and having had a MVA procedure after 10+0 weeks' gestation [1,5]
- Women up to and including 10+0 weeks' gestation, the volume of fetal blood cells transmitted to the mother is unlikely to cause maternal sensitisation
- In miscarriages under 12 weeks, the minimum dose of Anti D should be 250IU deep intramuscular injection. This should be prescribed and administered on the day and not later than 72hrs of the procedure, with patient consent
- There is no need to arrange a test for feto-maternal haemorrhage (Kleihauer test)

18 VTE Risk Assessment and Prophylaxis (Appendix 4, Care Pathway, page 6)

- VTE risk in the 1st trimester (up to 15 weeks) is high, and this risk is further elevated if there are co-existing risk factors for VTE such as advanced maternal age or if within the postpartum period
- The procedure itself or medications used in the surgical or medical management of miscarriage do not increase VTE as they are not prothrombotic and the procedure (MVA) itself, is short
- There is limited good quality evidence to inform the best practice on VTE prophylaxis for women having medical management of miscarriage/termination
- NICE guideline on abortion care recommends low-molecular-weight heparin (LMWH) for at least 7 days after the procedure for women who need pharmacological thromboprophylaxis and duration of prophylaxis is further extended based on the risk level
- The Obstetric Haematology Society is the only guideline available to guide the practice of objective assessment of perioperative VTE prophylaxis for SSM[5]. The guideline recommends to adhere to RCOG VTE risk matrix to assess the risks
- Pharmacological thromboprophylaxis is not indicated if the score is 0-3. If the score is 4 or more, Low molecular-weight heparin is indicated for at least 7 days after the procedure
- Inform the patient that thromboprophylaxis with low-molecular-weight heparin does not result in excessive bleeding
- The registrar booking the MVA should perform the risk assessment and prescribe post operative LMWH if indicated. If pre-operative LMWH is required, this should be discussed with the consultant on call for haematology and should alert the clinician performing the procedure
- Clinician undertaking the procedure should confirm the VTE risk assessment and ensure appropriate VTE prophylaxis is arranged post procedure

19 Discharge process

- Most women are ready to be discharged within 1-2 hours of the procedure. They are advised to rest for the remainder of the day and will be advised to return to work when ready
- The patient should be advised to avoid driving on discharge and arrange a ride home
- If the patient received Tramadol, they should remain in the hospital for at least 2 hours after the last dose, be accompanied on discharge, be advised not to drive for 24 hours and have normal observations at the time of discharge
- On discharge the patient is given the EGAU/EPAU contact number in case of any problems or the if patient requires any advice following procedure
- Advice re post-procedure pain relief (see section 6.7)
- The patient should be made aware that it is normal to have a bloody discharge for up to 4 weeks following the procedure
- The patient should be advised to contact EGAU/EPAU if they are unable to pass urine, develop temperature, become unwell or offensive vaginal discharge or heavy bleeding more than a period
- Persistent bleeding and/or cramping post-procedure may be a sign of retained products of conception or another complication
- The patient is instructed to do a urine pregnancy test 3 weeks after the procedure. If it is positive they are advised to contact the EPAU
- Vaginal intercourse should be avoided for at least one week following the procedure to reduce the risk of infection
- If contraception has not been decided, the patient should be advised to make an appointment with their GP to discuss this further if they are not planning to conceive
- On-call doctor / recovery nurse should complete the electronic discharge letter providing sufficient information about the procedure and follow up appointments, if any
- On discharge, all patients should be given a copy of the discharge letter for their information and to share with clinicians if needed
- The ward clerk should file the patient satisfaction questionnaire and file as electronic copy in the shared M-drive (M:\Acute\WomenAndChildren\Women&Children\2 GYNAECOLOGY\EGAU-GIU\EGAU\1 EGAU Documents)

20 Follow up

- No routine follow-up is necessary unless specifically required eg in the event of any complication
- The patient should be instructed to telephone EGAU if they have heavy bleeding or severe pain after the MVA procedure. A written information leaflet should be provided with EGAU contact number
- In the case of uncontrolled, heavy bleeding, the patient should attend emergency department

21 Immediate complications of MVA and management

- Patients may need admission to the inpatient Gynaecology ward if there are any complications requiring additional monitoring
- If the procedure is performed at the WHU and they are unable to provide extended monitoring beyond 1hr post-procedure, the patient should be transferred to WRH. The clinician who carried out the MVA should contact the on-call consultant and liaise with EGAU staff
- Nursing staff at the WHU should organise the ambulance transfer (see section 7.9)

21.1 Vasovagal episode

During the MVA procedure, a vasovagal episode can be caused by stimulation/manipulation of the cervix. This results in the patient experiencing nausea, vomiting, near syncope or syncopal episode. The clinical signs include pallor, cold clammy extremities, bradycardia, hypotension and collapse (rarely cardiac arrest - asystole)

Action:

- Immediately stop the procedure and remove instruments
- Reassure patient and calmly try to rouse them by talking to them
- Monitor pulse rate and blood pressure and record on observation chart
- Often it is self-limiting or managed with simple measures as below:
    - Elevate the foot end of the examination couch higher than the head end of couch
    - Ensure fan is on and facing the patient
- Once the vasovagal episode has fully recovered, completion of the procedure should be attempted with the patient's consent
- If the patient's pulse rate and blood pressure continues to remain low:
    - Follow ABCDE approach of resuscitation
    - Give high flow oxygen 15L
    - Call the Medical Emergencies Team on 2222 if necessary
    - IV access and fluids may be required
    - Bring the Resusitation Trolley to the procedure room – Atropine may be required, kept in the Emergency Drugs Box
    - Administer Atropine 300 micrograms IV(preferably)/IM (maximum 2 doses depending on the response) [11]
- The patient will remain under observation on the unit until well enough to go home
- If the procedure is undertaken at the WHU, transfer to EGAU by ambulance may be considered for further observation until the patient is well enough to be discharged

21. 2 Haemorrhage

- Sudden bleeding may indicate retained tissues, uterine atony or cervical trauma or rarely uterine perforation
- On-call Gynaecology Consultant should be informed as soon as possible
- If the MVA is being carried out at the WHU, seek assistance from a Consultant Gynaecologist (undertaking other clinical activities on site), if required. If a Consultant Gynaecologist is not available on site and additional support is required, the on-call Gynaecology Consultant should be requested to attend urgently
- First perform speculum examination to observe any cervical trauma and if noted often it is at the tenaculum site. This could be usually managed by applying pressure for 2-3 minutes. Rarely a cervical laceration may need a haemostatic suture with 2-0 vicryl
- If no cervical trauma, gently explore the uterine cavity with a Pipelle device to check for increase in uterine cavity length. If perforation suspected, follow the below action plan
- If no uterine perforation suspected, explore the cavity with a re-aspirate or consider USS to check for retained tissues prior to re-aspirate
- If the uterine cavity proves empty, this would indicate bleeding is due to uterine atony. Empty the bladder to assist uterine contractions and administer Syntometrine ® 1ml ampoule (contains 500 micrograms Ergometrine Maleate and 5IU Oxytocin) intramuscular injection or Ergometrine 500micrograms intramuscular or intravenous injection). Advise the patient that they may feel nauseous or vomit following administration of Syntometrine ®.

Anti-emetics such as Cyclizine may be required if not already administered prior to procedure

- If Syntometrine ® is ineffective in controlling the bleeding, 250micrograms of Cabaprost (Haemobate) intramuscular injection may be required. Ensure the patient does not have a history of asthma
- If the bleeding is ongoing despite ensuring cavity is empty, no uterine perforation and uterotonics have been administered, insertion of size 20 Foley's catheter and inflation of balloon with 30ml of saline should be considered
- If the procedure is performed at WHU, the patient should be transferred to the EGAU (if the patient is haemodynamically stable) by ambulance. Inform the EGAU staff and the on call Gynaecology team prior to the transfer
- Any haemodynamic instability warrants urgent exploration +/- Laparoscopy
- This may require urgent CEPOD theatre interruption of elective Gynaecology or any other specialty theatre. Hence the staff should liaise with anaesthetic and theatre staff at the relevant site

21.3 Suspected or Confirmed Uterine Perforation

- Perforation is suspected if there is advancement of the dilator/uterine sound/Pipelle device beyond the anticipated uterine cavity length measurements on the scan (if undertaken) or estimated uterine size on clinical assessment. The patient may complain of increased pain and become faint or may notice increased bleeding vaginally
- Site of perforation could be fundal, cervical, posterior or anterior uterine walls. This can cause intraperitoneal/retroperitoneal bleed or bleeding in to the broad ligament
- If there is deterioration in the patient clinical condition and observations without vaginal bleeding, uterine perforation should be suspected
- Management should include
  a) ABCDE structured approach in resuscitation including administration of high flow Oxygen, intravenous access, fluid resuscitation with intravenous fluid/blood; (cross matched blood or O negative blood in the event of acute collapse and there is insufficient time for cross match blood to be available)
  b) Inform the on-call Gynaecology Consultant immediately and on-call team for assistance
  c) Administration of uterotonics (Syntometrine ® one ampoule intramuscular injection or Ergometrine 500micrograms intramuscular or intravenous injection or 250micrograms of Cabaprost) to facilitate uterine contractions in order to compress any bleeding
- If the procedure was carried out at the WHU and the patient is cardiovascularly stable, the on-call Consultant and Nurse-in-Charge on EGAU should be informed at WRH and the patient transferred by blue light ambulance to EGAU for assessment
- Keep patient for at least 24hrs for monitoring, observations and antibiotics
- Imaging with USS should be considered to look for blood in the pelvis or CT pelvis/abdomen to look for free gas or intra/retroperitoneal blood which are indicative of uterine perforation
- If the patient required dilatation beyond Hegar 5 or perforation suspected during aspiration, diagnostic laparoscopy should be performed [6]

21.4 Haematometra

- May present immediately after procedure or later
- The patient may complain of sudden increase in pain and bleeding may be minimal
- Perform USS that will demonstrate blood in uterus
- Provided no suspicion of perforation, perform re-aspirate
- Administer uterotonics
- Further observation at least for 1 hr

21.5 Abandoning the procedure

There may be a need to stop the procedure prior to completion due to: poor toleration of the procedure, a vasovagal episode that is not self-limiting or any complication during the procedure

- Ensure cardiovascular stability
- Call for help and initiate resuscitation if unstable
- If the procedure is carried out at the WHU, evaluate the need for transfer to EGAU for further observation or transfer to CEPOD theatre if emergency surgical procedure required
- Consider a dose of Syntometrine to arrest bleeding
- If clinically stable and the patient feels well, offer SSM under general anaesthetic on another day
    - Ensure MRSA swabs are taken, theatre booking form completed and a date to come in is confirmed prior to the discharge of the patient
- Provide the patient with EGAU contact number should the patient need any advice

22 Audit, Training and Service Evaluation

- Patient satisfaction survey – see Appendix 7
- All doctors who perform the MVA should be trained and signed off as competent before they perform the procedure independently
- All doctors who perform the MVA should be trained and competent in identification and management of local anaesthetic toxicity
- Nursing and HCA staff assisting MVA should e confident in setting up of the equipment and in the handling of products of conception
- A database is maintained to assess number of procedures per list, average time per procedure, number of procedures abandoned and patient satisfaction
- Patient satisfaction audit should be undertaken every 3 years
- This guideline will be reviewed every three years unless national guidance, legislation or clinical evidence-based practice requires revision at an earlier date

Monitoring	Frequency	Method	Lead	Reporting to	Action Plan Review by
Patient Satisfaction	3yearly	Patient Survey	Consultant Lead for MVA	Gynae governance	Gynae governance Consultant lead

23 Risk management

- Any MVA related notifiable patient safety incident should reported by completing a DATIX as soon as they happen or within 24hrs
- **"Notifiable safety incident**" means any unintended or unexpected incident that occurred in respect of a patient during the provision of a regulated activity, that in the reasonable opinion of a healthcare professional, could result in, or appears to result in: a catastrophic harm, severe harm, moderate harm or prolonged psychological harm of the patient
- **catastrophic harm** (the death of the patient, where the death relates directly to the incident rather than to the natural course of the patient's illness or underlying condition),
- **severe harm -** a permanent lessening of bodily, sensory, motor, physiologic or intellectual functions, including removal of the wrong limb or organ or brain damage that is related directly to the incident and not related to the natural course of the patient's illness or underlying condition
- **moderate harm or prolonged psychological harm of the patient** (which a patient has experienced, or is likely to experience, for a continuous period of 28 days)
- **moderate harm** - means harm that requires a moderate increase in treatment and significant, but not permanent, harm. Moderate increase in treatment means an
  1) unplanned return to surgery,
  2) an unplanned readmission, a prolonged episode of care,
  3) extra time in hospital (or as an outpatient),
  4) transfer to another treatment area (such as intensive care).
  5) cancelling of treatment
- Verbal apology and the Duty of Candour leaflet must be offered by the clinician and recorded in the patient's records and on DATIX
- Staff who have been involved in a difficult or sensitive incident should be offered support
- The clinicians performing MVA procedures and unit leads of the sites performing MVA should maintain a log of any complications for audit and monitoring

References

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4) The Care of Women Requesting Induced Abortion Evidence-based Clinical Guideline Number 7 RCOG 2011
5) Bagot C N, Parvod C, Hunt BJ, British Society of Haematology Obstetric Haematology Special Interest Group. Managing venous thromboembolic risk in women undergoing spontaneous or induced early pregnancy loss: a consensus statement from the British Society of Haematology Obstetric Haematology Special Interest Group; Br J Haematol 2020 Jul;190(1):115-118
6) Shakir F. The perforated uterus; The Obstetrician & Gynaecologist; 2013;15:256–61
7) RCOG guideline 2011 (Royal College of Obstetricians and Gynaecologists (Great Britain), 2011
8) Green-top Guideline No. 59 March 2011 Best Practice in Outpatient Hysteroscopy
9) Manual versus electric vacuum aspiration first trimester abortion: A systematic review. BJOG, Vol 115, issue 1, pages 5-13, Dec 2007.
10) 2. Manual vacuum aspiration: a safe alternative for the surgical management of early pregnancy loss. BJOG. 2009 Aug: 116(9):1268-71
11) Service Standards for Resuscitation in Sexual and Reproductive Health Services- January 2013

Appendix 1

Equipment & Trolley Set up

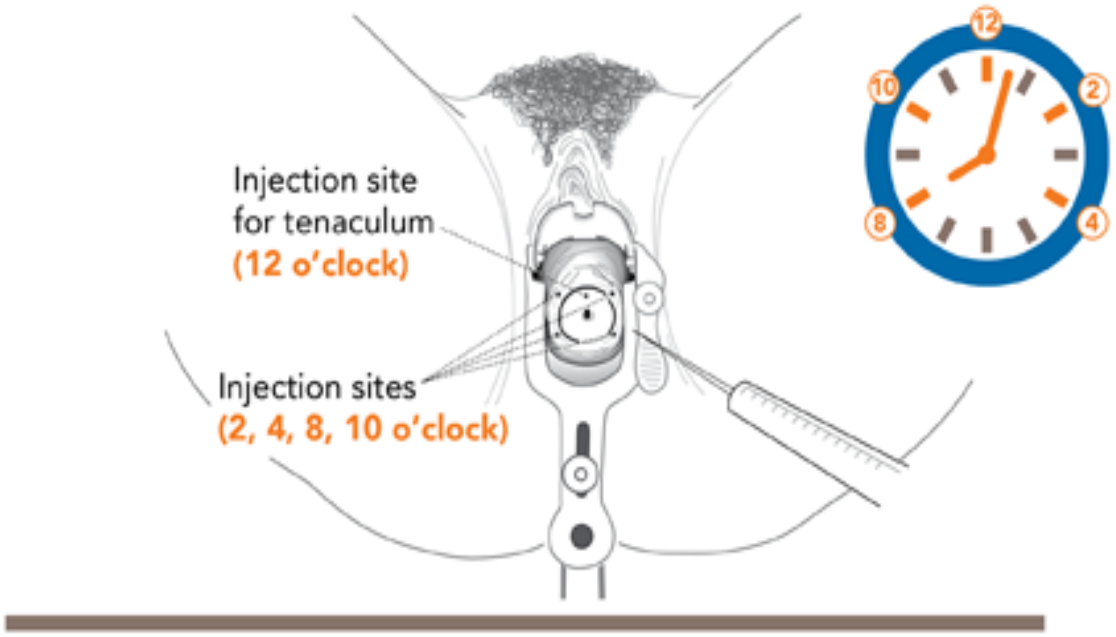
Working Trolley
MVA Syringe IPAS 60mls.
MVA Cannulas Size 4-10
Set of Hagar's dilators size 4-10.
Sponge holders x 2
Polyp forceps x 1
Dental syringe & needles
Vials/ Ampoules of local anaesthetic
Vulsellum Forceps X 1
Cleaning solution x 1 sachet (clinician discretion)
Large histology pot x 1
Gauze swabs with radiological markings x 1 pack
Light source
Clean Gloves

Trolley Preparation:
Open tray maintaining a clean field. Place the following instruments on the tray:

MVA syringe and cannulas
Sponge holder X 1
Dental syringe & Needles
Hagar Dilators
Pour cleaning solution into gallipot - clinicians discretion
The clinician will give instructions for any additional instruments to be opened

Appendix 2 Paracervical block:

PARACERVICAL BLOCK TECHNIQUE



1. Prepare lidocaine syringe using 20mL of 1% lidocaine and a 3cm (1in) needle.
2. Place the speculum and perform cervical antiseptic prep.
3. Inject 2mL of lidocaine superficially into the anterior lip of the cervix where the tenaculum will be placed (12 o'clock).
4. Grasp cervix with the tenaculum at 12 o'clock.
5. Inject remaining lidocaine in equal amounts at the cervicovaginal junction, at 2, 4, 8 and 10
6. Begin procedure without delay.

Appendix 3: RCOG VTE assessment

Risk factors for VTE

Pre-existing risk factors	Tick	Score
Previous VTE (except a single event related to major surgery)		4
Previous VTE provoked by major surgery		3
Known high-risk thrombophilia		3
Medical comorbidities e.g. cancer, heart failure; active systemic lupus erythematosus, inflammatory polyarthropathy or inflammatory bowel disease; nephrotic syndrome; type I diabetes mellitus with nephropathy; sickle cell disease; current intravenous drug user		3
Family history of unprovoked or estrogen-related VTE in first-degree relative		1
Known low-risk thrombophilia (no VTE)		1[a]
Age (> 35 years)		1
Obesity		1 or 2[b]
Parity ≥ 3		1
Smoker		1
Gross varicose veins		1
Obstetric risk factors		
Pre-eclampsia in current pregnancy		1
ART/IVF (antenatal only)		1
Multiple pregnancy		1
Caesarean section in labour		2
Elective caesarean section		1
Mid-cavity or rotational operative delivery		1
Prolonged labour (> 24 hours)		1
PPH (> 1 litre or transfusion)		1
Preterm birth < 37+0 weeks in current pregnancy		1
Stillbirth in current pregnancy		1
Transient risk factors		
Any surgical procedure in pregnancy or puerperium except immediate repair of the perineum, e.g. appendicectomy, postpartum sterilisation		3
Hyperemesis		3
OHSS (first trimester only)		4
Current systemic infection		1
Immobility, dehydration		1
TOTAL		

Abbreviations: ART assisted reproductive technology; IVF in vitro fertilisation; OHSS ovarian hyperstimulation syndrome; VTE venous thromboembolism.

[a] If the known low-risk thrombophilia is in a woman with a family history of VTE in a first-degree relative postpartum thromboprophylaxis should be continued for 6 weeks.

[b] BMI ≥ 30 = 1; BMI ≥ 40 = 2

Summary of recommendations for thromboprophylaxis in women experiencing spontaneous or induced pregnancy loss at less than 15 weeks gestation.

Women should undergo VTE risk assessment as per RCOG guidelines.*

RCOG risk assessment score*	Action
0–3 points	No thromboprophylaxis†
≥4 points	Thromboprophylaxis to start as soon as healthcare services aware that patient is pregnant, continuing for seven days post-event; educated regarding the small risk of increased vaginal bleeding with the use of LMWH

Women who require an overnight stay in hospital following the procedure should receive seven days thromboprophylaxis post-procedure as per RCOG guideline 2011 [6]

The dose of LMWH received should be based on the women's weight as per RCOG guidelines (Nelson-Piercy et al., 2015). This is available on https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg37a/

Appendix 4

M:\Acute\WomenAndChildren\Women&Children\2 GYNAECOLOGY\2 EGAU-GIU\Documents

The master copy of the MVA Care Pathway is stored electronically at the above link and in paper form in the Master Folder in EGAU Reception for photocopying.

Appendix 5

Local Anaesthetic Systemic Toxicity; prevention identification and management

All healthcare workers should familiarise themselves with the policies and procedures for handling situations where patients are adversely affected by local anaesthetic toxicity.

Toxicity relates to the free peak plasma concentration of the local anaesthetic drug and the toxic side effects occur when excessive blood levels occur. This is usually due to:

- Accidental rapid intravenous injection.
- Rapid absorption, such as from a very vascular site i.e. mucous membranes, infected or inflamed tissues
- An overdose

Impaired excretion can also result overdose - e.g. Hepatic and renal impairment, elderly and frail patients.

Adverse effects could also occur with the vasoconstrictor constituent (adrenalin. vasopressin) of the local anaesthetic agents - Caution in patients with cardiovascular disease eg ischaemic heart disease.

The systemic toxic effects due to local anaesthetic overdose primarily involve the central nervous (CNS) and cardiovascular systems (CVS). The former is more sensitive to local anaesthetics than CVS. Therefore CNS manifestations tend to occur earlier.

Early or mild toxicity:

Patients often will not volunteer information about these symptoms unless asked.

CNS

- dizziness
- tinnitus
- circumoral numbness
- abnormal taste
- confusion and drowsiness.

CVS

- tachycardia/ tachyarrhythmias and rise in blood pressure. (This will usually only occur if there is adrenaline in the local anaesthetic).
- bradycardia
- hypotension

Severe toxicity:

- tonic-clonic convulsion leading to progressive loss of consciousness, coma
- respiratory depression, and respiratory arrest
- cardiac arrhythmias and hypotension. Initially hyperdynamic (tachycardia, hypertension, ventricular arrhythmias) then progressive hypotension and conduction block, bradycardia, and asystole

Reducing the risk of toxicity

- Calculate the **total dose** of drug that is allowed according to the table below
- Consider patient characteristic and alter the dose - see below
- Consider the vascularity of the site of injection
- Use the lowest effective dose
- Use the least toxic drug available. Bupivacaine is more cardio toxic than Lignocaine
- Local anaesthetic effect is more dependent on volume of drug injected than the total dose. Therefore if more volume is needed it is better to dilute the local anaesthetic with 0.9% saline than to add more local anaesthetic and increase the dose unnecessarily
- Add adrenaline (Epinephrine) to reduce the speed of absorption

  Adrenaline allows the increase in dose of Lignocaine but not other anaesthetics. As Lignocaine is a vasodilator hence increases the absorption and the toxicity. Adrenaline is a vasoconstrictor and counteracts the action of Lignocaine and prolongs the duration of local anaesthetic action.

- Aspirate regularly looking for blood to indicate an accidental intravenous injection. This is not possible when dental syringe is used
- Inject the drug slowly (slower than 10ml/minute)
- Injection of a test dose of 2-3ml of local anaesthetic containing Adrenaline. This will often (but not always) cause a significant tachycardia if accidental intravenous injection occurs, hence marker of intravascular injection

Determining the optimal dose of local anaesthetic is usually based on body weight but consideration should be given to the patient characteristics and perfusion of the site of injection (risk of rapid absorption if the site of injection is highly vascular)

Care should be exercised in obese patients and pregnant patients when calculating the optimum dose based on the body weight as it could lead to potential risk of overdose

There is increased risk of toxicity in patients with severe renal impairment due to rapid absorption due hyperdynamic circulation and a reduced clearance of local anaesthetic agents

Similarly patients with liver disease, clearance of local anaesthetics drugs is reduced increasing the risk of toxicity

Elderly patients are at a risk of toxicity due to reduced organ function lowering the drug clearance. Moreover, elderly patients frequently have multiple co-morbidities altering pharmacokinetics and pharmacodynamics of local anaesthetics

Adrenalin containing local anaesthetics could increase the heart rate that could impact elderly women with abnormal heart rhythms such as atrial fibrillation

Dose calculation rule: the number of milligrams per millilitre(**mg/ml**) = percentage concentration of solution x 10. E.g., 2% Lignocaine contains 2 X 10 = 20mg per ml

Drug	**Maximum dose for infiltration**
Lignocaine	4.5mg/kg or maximum 300 mg (70kg)

Lignocaine with adrenaline	7mg/kg
Bupivacaine	2mg/kg
Bupivacaine with adrenaline	3mg/kg
mepivacaine Hydrochloride (Scandonest® 3% plain)	7mg/kg
Prilocaine (citanest)	6mg/kg
Prilocaine *hydrochloride* and *felypressin* (3% Citanest® with Octapressin®)	8mg/kg

Treatment of Local Anaesthetic Systemic Toxicity (LAST)

If a patient shows any signs or symptoms of toxicity during injection of local anaesthetic

- **Stop the injection and assess the patient.**
- **Call for help (dial 2222)**
- **Treatment is based on the A B C D of Basic Life Support**

A. Ensure adequate **airway**, give **oxygen** 15l via non re-breathe bag
B. Ensure that the patient is **breathing** adequately. Ventilate the patient with a self-inflating bag if there is inadequate spontaneous respiration
C. Start chest compressions if cardiac arrest. If circulatory failure (hypotension), gain IV access and start with intravenous fluids and may need vasopressors once the resuscitation team arrives. Treat arrhythmias occurs
D. If fitting administer IV Lorazepam 4mg or rectal Diazepam 10mg

Administration IV Intralipid therapy

The most reasonable approach to implement Lipid therapy is based on clinical severity and the rate of LAST.

Infusion of Lipid therapy at the earliest sign of LAST could avoid progression to severe toxicity.

In cases where anaesthetic-induced cardiac arrest that is unresponsive to standard therapy and cardio-pulmonary resuscitation, Lipid therapy should be initiated.

AAGBI Safety Guideline Management of Severe Local Anaesthetic Toxicity

Guideline_manageme
nt_severe_local_anae

Treatment protocol for Intralipid

- Intralipid 20% 1.5 mL/kg over 1 minute
- Follow immediately with an infusion at a rate of 0.25 mL/kg/min
- Continue chest compressions (Lipid must circulate)
- Repeat bolus every 3-5 minutes up to 3 mL/kg total dose until circulation is restored
- Continue infusion until haemodynamic stability is restored
- Increase the rate to 0.5 mL/kg/min if BP declines

- Recommended maximum total dose: 8 mL/kg

In practice, in resuscitating an adult weighing 70kg:

- Take a 500ml bag of Intralipid 20% and a 50ml syringe
- Draw up 50ml and give stat IV X 2 (100ml)
- Attach the Intralipid bag to a giving set and run it over the next 15 minutes (1000ml/hour)
- Repeat the initial bolus up to maximum of three times if spontaneous circulation has not returned
- Do not exceed a maximum cumulative dose of 840ml
- NB: Some hospital laboratories have encountered difficulty analysing blood drawn during Lipid emulsion therapy. If clinical circumstances allow, it may be prudent to draw blood for later analysis before Lipid emulsion therapy begins

- If you use Intralipid to treat a case of local anaesthetic toxicity, please report

    1. the incident via Datix
    2. the case at www.lipidrescue.org
    3. ensure that a new bag of Intralipid replaces what's been used

Appendix 6

Pregnancy Tissue Examination Consent Form

M:\Acute\WomenAndChildren\Women&Children\2 GYNAECOLOGY\2 EGAU-GIU\Documents

The master copy of the Pregnancy Tissue Examination consent form is stored electronically at the above link and in paper form in the Master Folder in EGAU Reception for photocopying.

Appendix 7 MVA Patient satisfaction Survey

Manual Vacuum Aspiration – Patient Satisfaction Survey

The Gynaecology Team at Worcester Acute Hospital Trust constantly strive to improve our service and provide excellent care to our woman. We would appreciate if you can complete this survey to inform us of your experience. Please rate your experience along each of the following questions.

1. **Information provided in the pre procedure leaflet was adequate:**

Strongly Agree Agree Disagree Strongly disagree

2. **Information and explanation given by healthcare professional on the day was adequate**

Strongly Agree Agree Disagree Strongly disagree

3. **Healthcare professional answered questions you had adequately**

Strongly Agree Agree Disagree Strongly disagree

4. **Nursing staff were friendly, courteous and made you feel comfortable**

Strongly Agree Agree Disagree Strongly disagree

5. **Information and explanation given by nursing staff on the day was adequate**

Strongly Agree Agree Disagree Strongly disagree

6. **Questions you had were answered by nursing staff adequately**

Strongly Agree Agree Disagree Strongly disagree

7. **You felt safe during and after your procedure**

Strongly Agree Agree Disagree Strongly disagree

8. **You felt that the pain relief provided for the procedure was adequate considering outpatient setting?**

Strongly Agree Agree Disagree Strongly disagree

9. **Overall how satisfied are you with your experience in this clinic?**

Highly satisfied Satisfied Dissatisfied Highly dissatisfied

10. **Would you willingly see this team again if you needed any other treatment?**

Yes No

11. Will you recommend having this procedure to your friends and family?

Yes No

12. Pain scored 0-10 during procedure (0 being nothing 10 being the worst)

0 1 2 3 4 5 6 7 8 9 10

Any other comments / suggestions

Appendix 8 H-Drive Data collection form- available on MVA data collection folder on H drive

Date	No of procedures	No of MVA	Clinic start time	Clinic finish time	MVA procedure length	Designation of the clinician	Procedure abandonment yes/no	Complications yes/no	Description of complication

Appendix 9: Monitoring Tool

This should include realistic goals, timeframes and measurable outcomes.

How will monitoring be carried out?

Who will monitor compliance with the guideline?

Page/ Section of Key Document	Key control:	Checks to be carried out to confirm compliance with the policy:	How often the check will be carried out:	Responsible for carrying out the check:	Results of check reported to: *(Responsible for also ensuring actions are developed to address any areas of non-compliance)*	Frequency of reporting:
	WHAT?	**HOW?**	**WHEN?**	**WHO?**	**WHERE?**	**WHEN?**
	Patient Satisfaction & Experience	Survey / Audit	6 months following initiation of service. Thereafter annually – Core Audit Programme.	Lead Clinician	Directorate, Clinical Improvement Group	
	Key Stakeholders Experience	Survey / Audit	6 months following initiation of service or sooner if capacity is a problem Then annually	Lead Clinician	Gynaecology Directorate	

	Capacity of Service	Exception reporting	Ongoing	Lead Clinician	Directorate Management Team	

Appendix 10: Contribution List

This key document has been circulated to the following individuals for consultation:

Designation (All O&G Consultants within the trust)	
Mr A Thomson	Mr J Hughes
Mr P Moran	Ms H Rai
Mrs Pratibha Arya	Miss D Ghosh
Mr S Agwu	Ms Brown
Ms R Duckett	Miss Catherine Hillman Cooper
Ms A Blackwell	Miss R Panchal
Ms Manon Van Seters	Miss J Lee
Mr Ambikapathy Abimanue	Ms Veal

This key document has been circulated to the chair(s) of the following committee's / groups for comments

Committee
Gynaecology Governance Meeting

Appendix 11: Supporting Document 1 - Equality Impact Assessment Tool

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

		Yes/No	Comments
1.	**Does the policy/guidance affect one group less or more favourably than another on the basis of:**		
	• Race	No	
	• Ethnic origins (including gypsies and travellers)	No	
	• Nationality	No	
	• Gender	No	
	• Culture	No	
	• Religion or belief	No	
	• Sexual orientation including lesbian, gay and bisexual people	No	
	• Age	No	
2.	**Is there any evidence that some groups are affected differently?**	No	
3.	**If you have identified potential discrimination, are any exceptions valid, legal and/or justifiable?**	N/A	
4.	**Is the impact of the policy/guidance likely to be negative?**	No	
5.	**If so can the impact be avoided?**	N/A	
6.	**What alternatives are there to achieving the policy/guidance without the impact?**	N/A	
7.	**Can we reduce the impact by taking different action?**	N/A	

If you have identified a potential discriminatory impact of this key document, please refer it to Human Resources, together with any suggestions as to the action required to avoid/reduce this impact.

For advice in respect of answering the above questions, please contact Human Resources.

Appendix 12: Supporting Document 2 – Financial Impact Assessment

To be completed by the key document author and attached to key document when submitted to the appropriate committee for consideration and approval.

	Title of document:	Yes/No
1.	Does the implementation of this document require any additional Capital resources	Yes
2.	Does the implementation of this document require additional revenue	Yes
3.	Does the implementation of this document require additional manpower	Yes
4.	Does the implementation of this document release any manpower costs through a change in practice	Yes
5.	Are there additional staff training costs associated with implementing this document which cannot be delivered through current training programmes or allocated training times for staff	No
	Other comments:	

If the response to any of the above is yes, please complete a business case and which is signed by your Finance Manager and Directorate Manager for consideration by the Accountable Director before progressing to the relevant committee for approval