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Published Online 19 August 2024

DOI: 10.1111/1471-0528.17907

BJOG An International Journal of Obstetrics and Gynaecology

RCOG GREEN-TOP GUIDELINE

Outpatient Hysteroscopy

(Green-top Guideline no. 59)

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This is the second edition of this guideline. The first edition of the guideline was published under the *Best Practice in Outpatient Hysteroscopy* title in 2011.

Key recommendations

- All gynaecology departments should provide a dedicated outpatient hysteroscopy service to aid care of women and people with abnormal uterine bleeding, reproductive problems, and insertion/retrieval of intrauterine devices. [Grade A]
- Written information should be provided to the woman prior to their appointment. This should include details about the procedure, the benefits and risks, advice regarding pre-operative analgesia, as well as alternative options for care and contact details for the hysteroscopy unit. [Good Practice Point]
- Women should be made aware of other settings and modes of anaesthesia for hysteroscopy (e.g. under general or regional anaesthesia or intravenous sedation). [GPP]
- The woman should be advised that if they find the procedure too painful or distressing at any point, they must alert the clinical team who will stop the procedure immediately. The clinical team should alert the hysteroscopist if the woman appears to be in too much pain or is experiencing a vasovagal episode and therefore unable to voice the concerns so that the procedure can be stopped. [GPP]
- Women should be advised to take standard doses of oral non-steroidal anti-inflammatory agents (NSAIDs) one hour before their scheduled appointment.
- Vaginoscopy should be the standard technique for outpatient hysteroscopy unless the use of a vaginal speculum is required (e.g. for administering local cervical anaesthesia or dilating the cervix). [Grade A]
- When performing operative hysteroscopy, the smallest diameter hysteroscope should be used, with consideration given to the use of hysteroscopes with expandable outer working channels because they are associated with less pain. [Grade B]
- Mechanical hysteroscopic tissue removal systems should be preferred over miniature bipolar electrodes to remove endometrial polyps. [Grade A]
- Local anaesthesia should not be routinely administered prior to outpatient hysteroscopy where a vaginoscopic approach is used. It should be considered where use of a vaginal speculum is planned e.g. for cervical dilatation if anticipated, due to either cervical stenosis and/or the utilisation of larger-diameter hysteroscopes (≥5mm outer diameter). [Grade A]
- Saline should be instilled at the lowest possible pressure to achieve a satisfactory view. [Grade A]
- Conscious sedation should not be routinely used in outpatient hysteroscopic procedures. [Grade B]

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1 | PURPOSE AND SCOPE

The aim of this guideline is to provide clinicians with up to date, evidence-based information regarding outpatient hysteroscopy, with particular reference to minimising pain and optimising the experience of the woman or person. The scope has been widened since the first edition to cover operative outpatient hysteroscopy, prevention of infection, training, and documentation. This guideline should be read in conjunction with the RCOG Good Practice Paper No. 16 *Pain Relief and Informed Decision Making for Outpatient Hysteroscopy*.[1]

It is important to acknowledge that it is not only women for whom it is necessary to access women's health and reproductive services in order to maintain their gynaecological health and reproductive wellbeing. Gynaecological and obstetric services and delivery of care must therefore be appropriate, inclusive and sensitive to the needs of those individuals whose gender identity does not align with the sex recorded at birth.

2 | INTRODUCTION AND BACKGROUND EPIDEMIOLOGY

Outpatient hysteroscopy is an established diagnostic and therapeutic procedure,[2-4] widely used across the UK.[5-7] The procedure involves the use of miniaturised endoscopic equipment to directly visualise the uterine cavity, without the need for intravenous sedation or regional/general anaesthesia necessitating the use of formal theatre facilities.[8] However, women or people should be made aware of other settings and modes of anaesthesia for hysteroscopy (e.g. procedure under general or regional anaesthesia, intravenous sedation) as an alternative to outpatient hysteroscopy. Outpatient hysteroscopy is indicated primarily in the assessment of women or people with abnormal uterine bleeding[2-4] but is also employed in the diagnostic work up of reproductive problems. Advances in endoscopic technology and ancillary instrumentation have facilitated the development of operative hysteroscopic procedures in an outpatient setting with or without the use of local anaesthesia. Common procedures include endometrial polypectomy,[7,9,10] removal of submucous fibroids,[11] endometrial ablation,[12-15] removal of chronic retained products of conception[16] and retrieval of lost intrauterine devices.[17]

Outpatient hysteroscopy, whether diagnostic[2,18] or operative[7,9–17] is successful, safe and well tolerated by most women. However, as with any procedure requiring instrumentation of the uterus, outpatient hysteroscopy can be associated with significant pain,[19,20] anxiety and embarrassment.[21,22] This not only impacts upon the satisfaction of women with their experience, but also limits the feasibility and possibly the safety, accuracy and effectiveness of the procedure. In order to minimise pain and discomfort, variations in hysteroscopic equipment, adaptations in technique and use of pharmacological agents have been advocated. This guideline assesses these components along with issues relating to optimal service provision.

3 | IDENTIFICATION AND ASSESSMENT OF EVIDENCE

Four databases (MEDLINE, EMBASE, CINAHL, Cochrane) were systematically searched from inception to March 2023. No restrictions were placed on the searches in an attempt to reduce selection bias. The databases were searched using relevant MeSH terms and keywords. The main keywords used were 'hysteroscopy', outpatient', 'office' and 'ambulatory' which were combined with the following words depending upon the area of hysteroscopy being examined; 'analgesia', 'analgesic', 'local anesthetic', 'local anesthesia', 'local anaesthetic', 'local anaesthesia', 'local infiltration', 'tetracaine', 'procaine', 'prilocaine', 'lidocaine', 'ethyl chloride', 'emla cream', 'cocaine', 'bupivacaine', 'benzocaine', 'sedation', 'sedative', 'hypnotic', 'tranquilizing agents', 'cervical ripening', 'prostaglandin', 'estrogen', 'oestrogen', 'progestin', 'laminaria', 'mifepristone', 'dilapan', 'progesterone', 'gestagen', 'cervical dilatation', 'cervical ripening', 'cervical preparation', 'cervix dilatation and effacement', 'no touch', 'vaginoscopy', 'vaginoscopic', 'sodium chloride', 'carbon dioxide', 'glycine', 'mannitol', 'sorbitol', 'saline', 'dextrans', 'glucose', 'distension media', 'distension medium', 'hysteroscope', 'endometrial ablation', 'flexible', 'rigid', 'diameter', 'size', 'angle', 'infection', 'sepsis', 'endometritis', 'antibiotic', and 'pyometra'. The results of the searches were systematically reviewed to include randomised controlled trials or systematic reviews of randomised controlled trials only, in order to capture the highest level of evidence for the basis of this guideline. The definitions of the types of evidence used in this guideline originate from the Scottish Intercollegiate Guideline Network (SIGN) methodology and developed in accordance with the standard methodology for producing RCOG Green-top Guidelines.[23]

Where possible, recommendations are based on, and explicitly linked to, the evidence that supports them. Areas lacking evidence are highlighted and annotated as 'good practice points' (GPP), which were agreed upon by consensus at the British Society for Gynaecological Endoscopy (BSGE) Ambulatory Care Network (ACN) Meeting, held virtually on Friday 18th June 2021.[24]

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4 | SERVICE PROVISION

4.1 | What are the requirements for running an effective outpatient hysteroscopy service?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
All gynaecology departments should provide a dedicated outpatient hysteroscopy service to aid care of women or people with abnormal uterine bleeding, reproductive problems, and insertion/retrieval of intrauterine devices.	**1+**	**A**	One randomised controlled trial (RCT)[25] showed that outpatient hysteroscopy provides quicker mobilisation and recovery, less time off work, less lost income and lower travel costs when compared to hysteroscopy performed under general anaesthesia, while maintaining equivalently high levels of satisfaction for the woman.
Outpatient hysteroscopy should be conducted outside of the formal operating theatre setting in an appropriately sized, equipped and staffed treatment room with adjoining, private changing facilities and toilet. This may be a dedicated hysteroscopy suite or a multipurpose facility.	**4**	**GPP**	An operating theatre environment is likely to provoke anxiety in the woman and negate the advantages associated with the outpatient setting.
There should be a minimum of two support staff consisting of at least one registered nurse and one healthcare assistant.	**4**	**GPP**	Staff should provide reassurance, explanation and support; one of the support staff should be dedicated to act as an advocate for the woman.[1]

An outpatient hysteroscopy service offers a safe, convenient and cost-effective means of diagnosing and treating abnormal uterine bleeding, as well as aiding the management of reproductive problems and insertion/retrieval of intrauterine devices.[26] A randomised controlled trial reported rapid mobilisation post-operatively (0 minutes [0–5] versus 105 minutes [80–120], $P<0.001$) and quicker recovery to pre-operative levels (2 days [range 1–2.7] versus 3 days, $P<0.05$) favouring diagnostic outpatient hysteroscopy compared with traditional day-case hysteroscopy under general anaesthesia.[24] The same study demonstrated high and equivalent levels of satisfaction with outpatient hysteroscopy when compared to hysteroscopy under general anaesthesia. Women undergoing outpatient hysteroscopy also required significantly less time off work (0.8 days versus 3.3 days, $P<0.001$), lost less income and incurred lower travel costs.[27] *[Evidence level 1+]*

Outpatient hysteroscopy should be performed in an appropriately sized and fully equipped treatment room. This may be a dedicated hysteroscopy suite or a multipurpose facility. Outpatient hysteroscopy can be associated with substantial anxiety[21] and so the treatment room should be private and patient friendly, with a separate, and ideally adjoining, changing area with a toilet. Adequate resuscitation facilities must be available, as should a comfortable recovery area with refreshment making facilities. Access to on site or off-site decontamination facilities of an appropriate standard is necessary. Outpatient hysteroscopy should not be performed in a formal, operating theatre setting because this environment is likely to provoke anxiety in the woman and negate the economic advantages associated with the outpatient setting. Music[28,29] and the use of virtual reality headsets[30] have been shown to reduce the pain and/or anxiety associated with outpatient hysteroscopy. However, if these are to be used then units must ensure that communication with healthcare staff is not affected and be aware that such adjuncts may not be suitable for all women or people. *[Evidence level 4]*

Appropriate staffing levels are required and these will vary according to local circumstances (patient populations, numbers seen per clinic) and the type of service offered (concomitant pelvic ultrasound, pure diagnostic service or diagnostic and therapeutic service). In general, there will be a complement of ideally three, but a minimum of two, support staff, consisting of at least one registered nurse and one healthcare assistant. One of the staff members should act as an advocate for the women during the procedure to provide reassurance, explanation and support. Communication with the woman in this way may help alleviate anxiety. If the woman wishes for a partner or friend to be present during their appointment, this wish should be accommodated, unless infection control precautions prevent this.[1] *[Evidence level 4]*

4.2 | What information should be provided prior to outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Written information should be provided to the woman prior to their appointment. This should include details about the procedure, the benefits and risks, advice regarding pre-operative analgesia as well as alternative options for care and contact details for the hysteroscopy unit.	**4**	**GPP**	Pre-procedural information is essential to allow women and people to make informed decisions regarding their care, which can be clarified and discussed further at the time of their appointment.[1]
Women and people should be made aware of other settings and modes of anaesthesia for hysteroscopy (e.g. under general or regional anaesthesia or intravenous sedation).	**4**	**GPP**	

Adequate, clear and simple, written information should be provided to the woman with the appointment letter, in

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the preferred language for the woman where possible. This information should include the recommendation to take oral pain relief (see section 5) one hour before their scheduled appointment. It should also provide details about what the procedure entails, benefits and risks (including pain), and alternative options for care (e.g. alternatives to undergoing an outpatient hysteroscopic procedure) and pain-relief (e.g. inhaled analgesia, local anaesthesia etc.). Where simultaneous treatments are offered ('see and treat' services), it is important that this fact is reflected in the patient information to facilitate informed choice. In addition, the provided information should make women aware that there are alternative types of pain management (e.g. intravenous sedation, regional or general anaesthesia) that they can choose if they have concerns about undergoing hysteroscopy in the outpatient setting or if the procedure needs to be abandoned at the woman's request. Women and people should be aware that these alternative options can be discussed at their clinic appointment and that their hysteroscopy can be rescheduled to accommodate their preferred model of care and pain management as necessary.[8]

It is important to recognise that hysteroscopy can cause more pain and trauma for some women, but predicting such adverse experiences can be difficult. However, women should be made aware that an outpatient procedure may be more painful and traumatic for them if they have experienced:

- Faintness during their menstrual period because of pain
- Severe pain or anxiety during previous vaginal examinations, including undergoing cervical smears
- Traumatic events especially sexual violence.

Women should also be provided with up to date local contact details, should they have any questions or concerns before their procedure.

If a woman attending her appointment is unaware that she has been referred for an OPH, then she should be given the opportunity to reschedule the hysteroscopy after being given written and verbal information, once she has had time to consider her options. Similarly, any woman who is unsure whether she wants to proceed with an OPH should be allowed more time to make a decision and offered a further appointment.

Units are advised to access the joint Royal College of Obstetricians and Gynaecologists (RCOG) and British Society for Gynaecological Endoscopy (BSGE) standards for further guidance,[1] however, the information may vary according to local circumstances and the type of service offered. Women should be directed to, or provided with, the joint Royal College of Obstetricians and Gynaecologists (RCOG) and British Society for Gynaecological Endoscopy (BSGE) patient information on outpatient hysteroscopy, in the absence of adequate, contemporary local patient information based on the RCOG patient information or to supplement the local resources.[31]

4.3 | How should consent be obtained prior to outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Verbal and / or written informed consent should be given by the woman during their appointment, prior to hysteroscopy being performed.	**4**	**GPP**	This is considered good clinical practice.[1]
The woman should be advised that if they find the procedure too painful or distressing at any point, they must alert the clinical team who will stop the procedure immediately. The clinical team should alert the hysteroscopist if the woman appears to be in too much pain or is experiencing a vasovagal episode and is therefore unable to voice the concerns so that the procedure can be stopped.	**4**	**GPP**	This is considered good clinical practice.[1]

The clinical team should be mindful of the fact that arrival of the woman or person at the clinic does not imply consent has been given for the procedure. The hysteroscopist is the responsible clinician and must be certain that the woman has had sufficient information and enough time for consideration to give informed verbal and written consent on the day of their procedure. Units should consider providing women with a pre-prepared written or electronic consent form for them to review before attending their appointment. Their appointment should be rescheduled if the women feels that they need more time to consider their decision, especially if they have not received or read the pre-procedural patient information prior to attending.[1]

The hysteroscopist must inform the woman that they are likely to experience period-like cramping and lower abdominal pain during and/or after the procedure. However, the woman or person should be advised that if they find the procedure too painful or distressing at any point, then they must alert the clinical team who will stop the procedure immediately. The clinical team should alert the hysteroscopist if the woman appears to be in too much pain or is experiencing a vasovagal episode and therefore is unable to voice their concerns so that the procedure can be stopped. The team should then make subsequent arrangements for the hysteroscopy to be rescheduled and to involve an alternative type of pain management (e.g. intravenous sedation, regional and general anaesthesia) or consider alternative options for ongoing management in agreement with the woman.[1]

The RCOG and BSGE, in conjunction with NHS England and NHS Improvement "Getting it Right First Time

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(GIRFT)" programme, have recently developed relevant standardised consent documents for outpatient hysteroscopy, operative hysteroscopy and endometrial ablation.[32-34] This should include the indication for the procedure, what it involves, any additional procedures that may be necessary, possible adverse effects, and the benefits and risks when compared to other alternative options for care, which should encompass other settings and modes of anaesthesia for hysteroscopy. *[Evidence level 4]*

4.4 | Should a pre-procedural safety checklist be performed prior to outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Completion of a safety checklist should be considered prior to outpatient hysteroscopy.	**4**	**GPP**	This can help ensure that essential information such as patient identity checks and allergy status is not missed.[25]
Pregnancy should be excluded in all women who are premenopausal and sexually active.	**4**	**GPP**	A urinary pregnancy test should either be undertaken routinely in women or people who are premenopausal and sexually active, or based upon the timing of their last menstrual period and history of unprotected sexual intercourse.[1]

Units should consider using a checklist (e.g. a specifically adapted World Health Organisation [WHO] surgical safety checklist[35] or a locally developed outpatient procedure safety standard checklist) to make sure essential elements such as patient identity checks, allergy status and exclusion of pregnancy are recorded where appropriate.[1] If the woman or person declines to provide a pregnancy test and states that they are definitely not pregnant, their wishes should be respected should they want to proceed with hysteroscopy. While involving women in a checklist can be empowering, for others, it may make the outpatient setting feel more like an operating theatre and induce anxiety. Units should therefore consider how and when they complete the safety checklist prior to the outpatient hysteroscopy. In self-contained, enclosed clinical areas with adjoining procedure rooms and changing areas, safety checks can be completed with the woman during the pre-procedural consultation. If safety checks are undertaken in the procedure room, women should not be unnecessarily exposed during the process.

A urinary pregnancy test should either be undertaken routinely in women who are premenopausal and sexually active, or based upon the timing of their last menstrual period and history of unprotected sexual intercourse.[1] If unable to exclude a pregnancy, based upon recent unprotected sexual intercourse and the fact that it may be too early for a urinary pregnancy test to provide a reliable result, then the woman or person should be offered the chance for their appointment to be deferred. However, if the woman prefers to proceed with hysteroscopy, then this should be respected.

A checklist which captures the following information is suitable for use in outpatient hysteroscopy:

- Date
- Confirmation of identification (3 identifiers; e.g. name, date of birth, address)
- Discussion of alternative pain management and settings in which these will be offered (e.g. intravenous sedation, regional/general anaesthesia in a day-case theatre setting)
- Consent performed (verbal and / or written)
- Allergy status
- Exclusion of pregnancy (with urinary pregnancy test if applicable)
- Details of whether and what pre-procedural analgesia has been taken (including timing and dose). *[Evidence level 4]*

4.5 | How should care after outpatient hysteroscopy be provided?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Clinical findings, further care and likely timescales of results, where appropriate, should be discussed with the woman once they are changed and comfortable. A written summary of this information should be provided to the woman and their general practitioner (GP).	**4**	**GPP**	This is considered good clinical practice.[1]
Women should be provided with both verbal and written information as to when and how to contact their local unit.	**4**	**GPP**	This allows for the woman to be reviewed in the case of severe pain, heavy bleeding and/or signs and symptoms of genital tract sepsis.[1]
Units should have a dedicated recovery area with comfortable chairs/recliners and curtained off areas with bed(s)/ trolley(s). Access should be available to extended recovery when pain cannot be easily controlled, or complications have arisen during the procedure.	**4**	**GPP**	This allows for the woman's condition, comfort and pain control to be assessed and monitored, and analgesia be provided when necessary.[1]

Following the procedure, the woman or person should be given time to change back into their clothes for a post-procedure consultation, which should ideally take place away from the procedure area. The hysteroscopist should

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explain the clinical findings and explain when and how histological/cytological/microbiological results will be communicated, if appropriate. If further care is required, it should be discussed in light of the clinical findings, and the woman should be informed when and how this will take place. This information should be summarised and written copies given to both the woman and their general practitioner (GP).[1] *[Evidence level 4]*

The woman should be given post-procedural information, ideally both verbally and written.[1] This should include contact numbers (e.g. a direct line to the clinic and an out of hours contact number) should the woman have any problems or concerns over the next two weeks. In particular, women should be told to make contact if they experience abdominal pain not controlled with simple analgesia, bleeding heavier than a period, or symptoms/signs of sepsis (fever, rigors and/or malodourous vaginal discharge). *[Evidence level 4]*

Women or people may prefer to leave after their post-procedure consultation without staying for a period of observation. However, recuperation and refreshments should be offered to all women in a dedicated recovery area with comfortable chairs/recliners and privacy (e.g. curtained off areas with bed(s)/trolley(s)). The woman's condition, comfort and pain control should be assessed, monitored and analgesia be provided when necessary. Access should be available to a longer duration recovery area when pain cannot be easily managed or complications have arisen during the procedure.[1] *[Evidence level 4]*

4.6 | How should training and standards in outpatient hysteroscopy be provided and assessed?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
A hysteroscopic training programme should include knowledge and understanding of both basic and advanced skills relevant to hysteroscopic procedures alongside aspects of clinical governance in hysteroscopy.	**4**	**GPP**	Hysteroscopists should be proficient in outpatient procedures and also have a thorough understanding of pre-operative planning, case selection and service development.
Simulation should be considered an important adjunct to hysteroscopy training.	**2++**	**B**	This allows hysteroscopists in-training to learn basic manoeuvres without impacting adversely on the woman's experience.

The RCOG offers a Special Interest Training Module in "Therapeutic Hysteroscopy" which requires competence in hysteroscopy.[36] The European Society for Gynaecological Endoscopy (ESGE) has developed a diploma programme for laparoscopic and hysteroscopic skills training, known as the Gynaecological Endoscopic Surgical Education and Assessment Minimally Invasive Gynaecological Surgery (GESEA MIGS) Diploma, of which there are two hysteroscopy modules of different levels of difficulty (Hysteroscopic Skills Training and Testing method [HYSTT® 1 and 2]).[37] These curricula not only cover hysteroscopic procedures but also pre-operative planning, case selection and service development. *[Evidence level 4]*

Achievement of competency in outpatient hysteroscopy requires having the opportunity to undertake training in the clinical setting on women while they are awake. It is important to consider, however, that this may lead to a prolonged procedure time and in turn impact upon the woman or person's experience. Training packages have tried to address this by using various models and simulators in order to improve psychomotor skills and performance. As illustrated by a systematic review on training and assessment of hysteroscopic skills, vegetables (e.g. potatoes, pears, butternut squash etc.), animal organs (e.g. porcine hearts, pig bladders, cattle uteri, etc.) and synthetic models (e.g. HYSTT box trainer [European Academy of Gynecological Surgery, Leuven, Belgium]) have been used to simulate intrauterine pathology, allowing for the development of a variety of different hysteroscopic skills (e.g. fibroid resection, septoplasty, etc.).[38] Virtual reality simulators (e.g. HystSim™ [VirtaMed AG, Zurich, Switzerland]) have a variety of pathologies and cases that the user can access, allowing for a standardised environment where data can be collected to allow an objective assessment of the trainee's performance.

Clinicians undertaking outpatient hysteroscopy clinics should have sufficient workload in the job plan to maintain competencies and enhance their skills. Clinicians are expected to review their clinical outcomes and participate in audits for quality assurance purposes (refer to Auditable Topics).

5 | Analgesia

5.1 | What analgesia should be recommended prior to outpatient hysteroscopy and how should it be given in order to reduce the pain felt by women during and after their procedure?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Women or people should be advised to take standard doses of oral non-steroidal anti-inflammatory agents (NSAIDs) one hour before their scheduled appointment.	**1++**	**A**	Meta-analysis[39] showed that NSAIDs are the only medication that have been shown to reduce pain both during and after hysteroscopy without an increase in side-effects.

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Recommendation	Evidence quality	Strength	Rationale for the recommendation
Where NSAIDs are contraindicated (e.g. in certain asthmatics, women or people with renal impairment or gastric ulceration etc.) or declined, the use of transcutaneous electrical nerve stimulation (TENS), could be considered. Oral opioid or antispasmodic agents can be used for women with contraindications to NSAIDs, provided they are made aware of the increased risk of adverse effects.	**1++**	**A**	Meta-analysis[39] showed that TENS reduced pain without an increase in side-effects. As these devices are not widely available, opioids and antispasmodics can be used instead, so long as women are made aware of the increased risk of drowsiness with opioids and vasovagal episodes with antispasmodics.
Women or people should be offered inhaled nitrous oxide (at an equimolar gas mixture of 50% nitrous oxide and 50% oxygen). Penthrox® should be considered for the reduction of pain associated with outpatient hysteroscopy.	**1+**	**B**	One RCT[40] demonstrated a reduction in intra-procedural pain with the use of inhaled nitrous oxide, although some women felt dizziness. One small RCT[66] has comparing Penthrox® with placebo did not find a significant reduction in pain with the use of Penthrox® during diagnostic hysteroscopy but found a significant reduction in pain where subsequent operative procedures were undertaken, such as the excision of polyps or fibroids, the insertion of intrauterine devices or when an endometrial biopsy was taken.

A systematic review and meta-analysis[39] identified twenty-two randomised controlled trials (RCTs)[41-62] examining the use of analgesics against a control prior to outpatient hysteroscopy for the reduction of pain.

Meta-analysis showed a statistically significant reduction in intra-procedural (standardized mean difference [SMD] −0.72; 95% confidence interval [CI] −1.27 to −0.16)[50,52,55,57,58,59,62] and post-procedural (SMD −0.55; 95% CI −0.97 to −0.13)[50,52,55,57,59,62] pain when giving an NSAID compared to a control. Subgroup analysis showed that the oral route[52,55,57,59,62] was associated with the greatest reduction in pain both during (SMD −0.87; 95% CI −1.59 to −0.15) and after (SMD −0.56; 95% CI −1.02 to −0.10) hysteroscopy. The NSAID was given one hour prior to the procedure[55,57,59,62] in all but one[52] study. There was no significant difference in side-effects (namely in the form of vasovagal reactions [e.g. nausea, vomiting, sweating, dizziness, vertigo, bradycardia, hypotension]) in women randomised to NSAIDs or their controls (Peto OR 1.01; 95% CI 0.52–1.98).[46,47,49,52,57,59,62] *[Evidence level 1++]*

There was a statistically significant reduction in intra-procedural (SMD −0.99; 95% CI −1.67 to −0.31)[54,61] and post-procedural (SMD −0.54; 95% CI −0.95 to −0.12)[61] pain when comparing TENS to a control. Reported side-effects were vasovagal episodes, but there was no significant difference between women receiving TENS or a suitable control (Peto OR 0.86; 95% CI 0.46–1.61). *[Evidence level 1++]*

A statistically significant reduction in intra-procedural (SMD −0.50; 95% CI −0.97 to −0.03)[43,51,53,59] and post-procedural (SMD −0.73; 95% CI −1.07 to −0.39)[43,59] pain was demonstrated when giving an opioid (given 40–60 minutes prior to commencing hysteroscopy) compared to a control. Women randomised to opioids were also significantly more likely to suffer from side-effects when compared to their controls (Peto OR 7.30; 95% CI 3.96–13.47),[43,45,53,59] with drowsiness being commonly cited. *[Evidence level 1++]*

Meta-analysis showed a statistically significant reduction in intra-procedural (SMD −1.48; 95% CI −1.82 to −1.13) and post-procedural (SMD −1.02; 95% CI −1.34 to −0.69) pain[55,62] when giving an antispasmodic one hour prior to hysteroscopy, compared to a control. The risk of side-effects, however, primarily in the form of vasovagal episodes, was significantly greater (Peto OR 11.34; 95% CI 3.96—13.47).[62]

Three trials[40,63,64] have been published since the aforementioned systematic review[39] was performed. The first trial[64] randomised postmenopausal women undergoing diagnostic hysteroscopy to tramadol or placebo, and was in keeping with the conclusions of the aforementioned systematic review. The second trial[63] randomised women undergoing diagnostic hysteroscopy and directed biopsy or operative hysteroscopy to either oral diclofenac, oral diclofenac and hyoscine, or placebo. Their findings contrasted slightly with the systematic review because a significant reduction in intra-procedural pain with oral diclofenac was restricted to women with a prior history of chronic pelvic pain (P=0.04). The third trial[40] evaluated the use of inhaled nitrous oxide (at an equimolar gas mixture of 50% nitrous oxide and 50% oxygen, also known as Entonox®) compared to inhaled air and to a paracervical block using 1% lidocaine. Approximately one third of the 314 participants had a diagnostic hysteroscopy and directed biopsy with the remainder undergoing operative hysteroscopy. A significant reduction in pain recorded 5–10 minutes after the procedure was demonstrated in women randomised to nitrous oxide compared to inhaled air alone (P=0.001). No significant difference in adverse events (P=0.26) was found between these groups (attributed to pain, anxiety and vasovagal symptoms), although it was noted that 5% of women reported dizziness with nitrous oxide. *[Evidence level 1+]*

There has been recent interest in using another inhalational agent called Penthrox® (methoxyflurane) as an easily administered, short acting, pain control solution for ambulatory procedures like hysteroscopy. Penthrox® is anaesthetic agent which is self-administered through a custom-built handheld inhaler and is currently used for the relief of moderate to severe trauma-associated pain in emergency

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settings.[65,66] One small RCT has compared Penthrox® with placebo for the reduction of pain in outpatient hysteroscopy. This RCT did not find a significant reduction in pain with the use of Penthrox® during diagnostic hysteroscopy (34.2 ±28.0 [n = 45] versus 43.2 ±29.8 [n = 44]; $P = 0.05$) on a 100mm visual analogue scale (VAS), but found a significant reduction in pain (20.4 ±25.2 [n = 35] versus 34.6 ±30.1 [n = 32]; $P = 0.03$) where subsequent operative procedures were undertaken such as the excision of polyps or fibroids, the insertion of intrauterine devices or when an endometrial biopsy was taken. The pain scores 15 minutes after hysteroscopy were not significantly different in patients randomised to Penthrox® or placebo ($P > 0.05$).[67]

6 | CERVICAL PREPARATION

6.1 | Should cervical preparation be used in order to facilitate outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Cervical preparation should not be used routinely.	**1++**	**A**	Meta-analysis[68] showed that vaginal prostaglandins reduced pain, although they are associated with genital tract bleeding, abdominal pain and gastrointestinal side-effects. The risk of failure and complications such as cervical trauma and uterine perforation was not reduced.
If vaginal prostaglandins are to be administered, they should be given 12 hours before hysteroscopy. However, clinicians should consider the feasibility of administration, side-effect profile and alternative options (including the use of local anaesthesia and cervical dilatation).	**1++**	**A**	Two RCTs[69,70] showed that giving vaginal prostaglandins 12 hours before hysteroscopy provided better pain relief than when given 3 hours before.
Cervical preparation with vaginal prostaglandins can be considered in selected cases (e.g. where cervical stenosis is anticipated or there is need to dilate the cervix beyond 6mm to accommodate uterine instrumentation).	**4**	**GPP**	There is no robust evidence to identify specific groups of women or people who may benefit most from cervical preparation.

Uterine trauma (lacerations to the cervix or uterine perforation) is recognised with blind and endoscopic instrumentation of the uterus,[2,71,72,73,74] with an estimated incidence of perforation of 0.002–1.7%. The incidence of uterine trauma is low for diagnostic outpatient hysteroscopy performed with small diameter endoscopes (≤3.5mm outer sheath diameter) under direct vision, however, cervical preparation has been historically used to dilate the cervix to facilitate easier hysteroscopic entry and reduce the risk of uterine trauma.[2] Factors associated with uterine trauma include the need for blind dilatation beyond 6mm for intrauterine instrumentation (e.g. for the use of larger-diameter operative hysteroscopes), cervical stenosis (e.g. due to atrophy, cervical surgery, previous caesarean section, nulliparity), a tortuous cervical canal (e.g. in association with fibroids) and a deviated uterine cavity (e.g. acute flexion, pelvic adhesions, fibroids).[1,18]

A systematic review and meta-analysis[68] investigating the impact of cervical preparation on pain during hysteroscopy, identified twenty-four[46,49,69,75–95] RCTs. Administration of a cervical preparation (between 3–24 hours prior), when compared against a placebo, significantly reduced intra-procedural pain (SMD −0.67, 95% CI −1.05 to −0.29).[76,77,79,81,84,87–90,92,93] Subgroup analysis according to the agent given found that misoprostol (SMD −0.64; 95% CI −0.97 to −0.31),[76,81,84,87–89,92,93] and dinoprostone (SMD −2.24; 95% CI −2.75 to −1.74)[90] significantly reduced intra-procedural pain, however, mifepristone (SMD −0.13; 95% CI −0.65 to 0.38),[77] and carboprost (SMD 0.09; 95% CI−0.02 to 0.20)[79] did not. Subgroup analysis based on route of administration of misoprostol showed pain was only reduced during hysteroscopy when given vaginally (SMD −0.68, 95% CI −1.04 to −0.32),[76,81,84,87,89] rather than orally (SMD −0.52, 95% CI −1.54 to 0.51).[92,93] Subgroup analysis based on menopausal status found that misoprostol reduced intra-procedural pain in premenopausal women (SMD −0.86, 95% CI −1.18 to −0.54),[76,81,84,87,92,93] but not postmenopausal women (SMD 0.10, 95% CI −0.30 to 0.51).[88,93] Only two studies[76,80] randomised women to different doses of cervical prostaglandins, where 400 micrograms of vaginal misoprostol did not show any significant reduction in pain when compared to 200 micrograms (P=0.32). Only one study[69] randomised women to receive a cervical preparation at different times and found that pain was only significantly reduced when 400 micrograms vaginal misoprostol was given 12 hours, rather than 3 hours before hysteroscopy (P<0.001). Since this systematic review[68] was published, a further randomised controlled trial has supported these findings, with 3 milligram vaginal dinoprostone only showing a significant reduction in intra-procedural pain when given 12 hours (P<0.001), rather than 3 hours (P=0.1) before outpatient hysteroscopy.[70]

Prostaglandins are associated with gastrointestinal side-effects and are contraindicated in severe uncontrolled asthma, chronic adrenal failure, acute porphyria and renal or hepatic impairment.[96] In the systematic review[68] described above, meta-analysis of adverse events in women randomised to either a cervical preparation or placebo prior to outpatient hysteroscopy found a significant increase in their incidence when a cervical preparation was given (OR 2.94, 95% CI 1.58–5.47).[46,49,76,78,79,81,84,86–94] These included genital tract bleeding, abdominal pain/cramping, nausea,

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vomiting, diarrhoea, pyrexia/fever and vasovagal episodes. The incidence of complications were too small and balanced between groups for meta-analysis, and were only reported in studies randomising women to either misoprostol or placebo/nil.[46,49,76,78,81,84,86–89,91–94] These included cervical trauma (n = 7), false passage (n = 4), severe pain (n = 4), uterine perforation (n = 1), infection (n = 1) and genital tract bleeding requiring emergency department admission (n = 1) in women randomised to misoprostol (n=18/711; 2.5%) and cervical trauma (n = 4), false passage (n = 5), uterine perforation (n = 3) and severe pain (n = 1) in women randomised to placebo/nil (total 13/694; 1.9%).

One of the main reasons for failure to successfully perform an outpatient hysteroscopy is the inability to access the uterine cavity due to cervical stenosis, and this is most commonly encountered in a postmenopausal population.[1] The previously mentioned systematic review,[68] showed that administration of cervical preparation was associated with significantly greater cervical dilatation prior to hysteroscopy (gauged by the size of Hegar dilator the cervical canal could accommodate), when compared with placebo (SMD 0.81, 95% CI 0.08–1.53).[76,77,79] In addition, meta-analysis of ease of hysterosopic entry, as scored by the operator on either a 5-point Likert scale or 10cm Visual Analogue Scale (VAS), showed that giving a cervical preparation was associated with significantly easier hysteroscopic entry when compared to placebo (SMD 0.89, 95% CI 0.32–1.46).[76,81,84,87,89,90] The incidence of failed hysteroscopies due to cervical stenosis, however, was too small for meta-analysis, with 29/2001 (1.4%) women randomised to a cervical preparation and 32/1183 (2.7%) women randomised to placebo/nil.

No comparative studies were identified for other methods of cervical dilatation prior to outpatient hysteroscopy (e.g. local / systemic administration of oestrogens or osmotic agents).

7 | TYPE OF HYSTEROSCOPE

7.1 | What size and angle of hysteroscope should be used in the outpatient setting?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Hysteroscopes of 3.5 mm or less in outer diameter should be used for diagnostic outpatient hysteroscopy.	**1+**	**A**	Meta-analysis[97] showed that miniature hysteroscopes confer less pain to women during hysteroscopy.
When performing operative hysteroscopy, the smallest diameter hysteroscope should be used, with consideration given to the use of hysteroscopes with expandable outer working channels because they are associated with less pain.	**1+**	**B**	One RCT[98] showed that a hysteroscope with a smaller initial diameter but larger resultant diameter confers less pain than a rigid hysteroscope.
When performing operative hysteroscopy using mechanical hysteroscopic tissue removal systems, the smallest diameter system available that is appropriate for the procedure should be used.	**4**	**GPP**	This is considered best practice.
Choice of hysteroscope lens angle should be left to the discretion of the clinician.	**4**	**GPP**	There is insufficient evidence to recommend 0° or fore-oblique optical lenses for routine outpatient hysteroscopy.

A systematic review and meta-analysis[97] identified seven RCTs[99-105] examining how the diameter of the outer sheath of the hysteroscope affected pain during outpatient hysteroscopy. Women randomised to mini-hysteroscopes (outer diameter 3–3.5mm) experienced significantly less pain during hysteroscopy when compared to women randomised to conventional hysteroscopes (outer diameter ≥5mm) (SMD –3.64; 95% CI –5.16 to –2.12). Data pertaining to image quality, failure rate, procedural timing and adverse events were not meta-analysed. Image quality was either not reported,[100,101] showed no significant difference between scope sizes,[99,102,103] or found significantly better visualisation with the use of a smaller-diameter hysteroscope.[104] In one study,[105] was significantly less conclusive with the use of a miniature hysteroscope but this was due to the leakage of carbon dioxide distension media, rather than due to the device used. Two studies[104,105] reported a significant increase in success when using a smaller-diameter hysteroscope, whereas the other three studies[99-101] reporting failure showed no significant difference between groups. In the three studies commenting on procedural duration, a significantly shorter time was required with the use of a miniaturised hysteroscope in two,[99,101] with no significant difference found between scope sizes in the other.[100] The incidence of vasovagal reactions was significantly lower when using a smaller-diameter hysteroscope in one study,[99] with the rest[100-104] showing no significant difference between the two groups.

A systematic review[106] identifying the operative devices used in outpatient hysteroscopy to determine which technologies confer the least pain, found one randomised controlled trial[98] comparing hysteroscope diameters for operative hysteroscopy in the outpatient setting. Women randomised to the use of a semi-rigid hysteroscopic system (Alphascope™ [Gynecare, division of Ethicon, NJ, USA]) with a collapsible sheath (3.5mm diameter) and 7Fr forceps (total diameter 5.8mm) found polypectomy significantly less painful than when randomised to a lens based hysteroscope with 5Fr forceps (total diameter 5mm) ($P < 0.05$), despite the resulting hysteroscopic diameter being greater, with the incidence

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of adverse events minimal and balanced between groups ($P = 0.09$). *[Evidence level 1++]*

There were no studies comparing the outer diameters of mechanical hysteroscopic tissue removal (mHTR) systems for the reduction of pain in operative hysteroscopy, however, these are generally between 5 and 6.25mm which are suitable for use in the outpatient setting.[107] *[Evidence level 3]*

No studies were identified that compared 0° hysteroscopes with off-set distal lenses (e.g. 12°, 30°). Off-set lenses offer a wider field of view and this property can be advantageous in visualising the corneal recesses and tubal ostia within the uterine cavity with minimal external movement of the hysteroscope. Fore-oblique lenses facilitate visualisation of ancillary instrumentation and so are advantageous for operative hysteroscopy. However, 0° hysteroscopes are more intuitive, facilitating entry into the uterine cavity through the cervical canal which may reduce the need for cervical dilatation, as well as minimising discomfort and uterine trauma. *[Evidence level 4]*

7.2 | Should rigid or flexible hysteroscopes be used routinely in the outpatient setting?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Choice of whether a rigid or flexible hysteroscope is used should be left to the discretion of the hysteroscopist.	**1+**	**B**	Two RCTs[108,109] have shown that flexible hysteroscopes are associated with less pain during diagnostic outpatient hysteroscopy. However, rigid hysteroscopes may provide better images, fewer failed procedures, quicker examination time and reduced cost.

Two, small randomised controlled trials compared the pain experienced during outpatient hysteroscopy with the use of a flexible hysteroscope versus a rigid hysteroscope.[108,109] Both found that the use of the flexible hysteroscope significantly reduced pain during the procedure ($P = 0.0001$ and $P < 0.001$, respectively). One of these studies reported no difference between the flexible and rigid groups in terms of procedure time and image view, with no failed hysteroscopies in either group.[109] The other study found that rigid scopes gave significantly better image quality ($P < 0.001$), significantly shortened the time taken to perform the procedure ($P = 0.003$), were cheaper to purchase and easier to sterilise and maintain.[108] In addition, while there were no failed hysteroscopies when rigid scopes were used, seven women randomised to flexible scopes had a failed procedure due to the inability to negotiate the cervical canal (n = 5) and an inadequate view (n = 2). Both these trials were published over twenty years ago and so their findings may not reflect the relative advances in technologies and techniques, such as vaginoscopy.[108]

7.3 | What devices should be used for operative procedures in the outpatient setting?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Mechanical hysteroscopic tissue removal systems should be preferred over miniature bipolar electrodes to remove endometrial polyps.	**1+**	**A**	One RCT[110] showed that mechanical hysteroscopic tissue removal systems are less painful, quicker, more successful and more acceptable to women for the removal of endometrial polyps when compared to using a miniature bipolar electrode.
The choice of device for outpatient endometrial ablation should be left to clinician discretion and familiarity.	**4**	**GPP**	There is an absence of comparative data examining newer generation (quicker and smaller-diameter) ablative devices.
Inactivated mechanical mini-scissors should be preferred over miniature bipolar electrodes to remove uterine septa.	**1+**	**B**	One RCT[111] showed that inactivated mechanical mini-scissors is associated with less pain than the use of a miniature bipolar electrode.

A systematic review[106] identifying the operative devices used in outpatient hysteroscopy to determine which technologies confer the least pain, found seven randomised controlled trials[98,110,112–116] investigating technologies for endometrial polypectomy, two trials[117,118] investigating endometrial ablation devices, and one trial[111] for uterine septoplasty.

Two trials[110,113] compared the use of a bipolar electrode (using a 5Fr Versapoint™ [Gynecare, division of Ethicon, NJ, USA] mini-electrode) for polypectomy, against a mHTR system (Truclear™ 5mm system [Medtronic, MN, USA]) that allows for simultaneous cutting and aspiration of polyp tissue. While the earlier study, which was larger and of higher quality, found a significant reduction in pain during polypectomy when using a mHTR system ($P < 0.001$),[110] the later one did not ($P > 0.05$).[113] This difference in findings may be explained by the fact that the earlier study[110] compared a 5mm diameter mHTR system (Truclear™ 5mm system [Medtronic, MN, USA]) with an expandable 3.5mm (Alphascope® [Gynecare, division of Ethicon, NJ, USA]) or rigid 5mm operative hysteroscope (Bettocchi® [Karl Storz, Tuttlingen, Germany]), whereas the later study[113] compared the same 5mm diameter mHTR system with a larger 5.5mm diameter hysteroscope (Olympus GmbH, Hamburg, Germany). Both studies showed that morcellation was significantly faster ($P < 0.001$) and associated with a higher success rate. While the incidence of adverse events was higher in women randomised to a bipolar electrode in both studies, the majority of these related to procedural failure, with no

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serious complications (e.g. uterine perforation), reported in either group. When patient satisfaction was reported, there was a statistically significant preference for the use of the mHTR system ($P=0.009$).[110] Another trial[114] found no significant difference in pain experienced by women undergoing polypectomy using a diode laser (980nm Ceralas® HPD laser [Biolitec AG, Vienna, Austria]) when compared to a bipolar electrode (5Fr Versapoint™ [Gynecare, division of Ethicon, NJ, USA] mini-electrode) ($P>0.05$), however, it should be noted that laser fibres like these are not in widespread use and comparisons with modern mechanical hysteroscopic tissue removal (mHTR) systems are lacking.

In the two trials[117,118] comparing endometrial ablation devices, women were randomised to either bipolar radiofrequency impedance-controlled ablation (Novasure® [Hologic, MA, USA]), thermal balloon ablation (Thermachoice III® [Gynecare, division of Ethicon, NJ, USA] or Thermablate® [Idoman Teoranta, Toronto, Canada]). Pain scores were not significantly different with the use of either device type, however, these older devices have been replaced by smaller-diameter and more rapid ablative technologies (e.g. Novasure® ADVANCED [Hologic, MA, USA], LiNA Librata™ [LiNA Medical, Glostrup, Denmark], Minitouch™ [MicroCube, Fremont, CA, USA] etc.). *[Evidence level 4]*

One small randomised controlled trial[111] compared the use of inactivated 7Fr mini-scissors against a bipolar electrode (using a 5Fr Versapoint™ [Gynecare, division of Ethicon, NJ, USA] mini-electrode) through an expandable 3.5mm (Alphascope® [Gynecare, division of Ethicon, NJ, USA]) operative hysteroscope for resection of sonographically diagnosed uterine septa <2cm, and found that mechanical resection was significantly less painful ($P=0.013$), with similar operative times ($P=0.25$) and no adverse events recorded with either technique. All women, regardless of which technique was used, had complete resection of their septum noted at hysterosalpingogram 3 months post-procedure. *[Evidence level 1+]*

8 | DISTENSION MEDIUM

8.1 | Which uterine distension medium should be used during outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Saline is recommended as the distension medium for outpatient hysteroscopy.	**1++**	**A**	Meta-analysis[119] showed that saline is associated with less post-procedural pain, better image quality, fewer side-effects, shorter procedural time, greater patient satisfaction and allows for operative hysteroscopy.

A systematic review and meta-analysis[119] investigating the optimal distension media for outpatient hysteroscopy identified 18 RCTs.[49,102,120–135] The only distension media types that were compared in this systematic review were saline and carbon dioxide.

Meta-analysis showed no significant difference in intra-procedural pain[102,120–126] (SMD −0.12; 95% CI −0.36 to 0.13) or post-procedural pain (immediately after,[122] 1 minute after[127] and 15 minutes[102] after hysteroscopy) (SMD 5.54; 95% CI −2.34 to 13.43) between saline and carbon dioxide, however, after excluding the lower quality study,[127] a statistically significant reduction in post-procedural pain was demonstrated with the use of saline[102,122] (SMD −0.65; 95% CI −1.14 to −0.16). There was a statistically significant reduction in hysteroscopies with an unsatisfactory view with saline (Peto OR, 0.38; 95% CI 0.22–0.66).[102,120,122,124,126] Women randomised to saline had significantly fewer side-effects compared to women randomised to carbon dioxide (Peto OR, 0.29; 95% CI 0.20–0.40).[102,120–127] Vasovagal symptoms (e.g. nausea, vomiting, dizziness, and fainting) (n = 38/50, 76%) were the main side-effects attributed to saline, however, shoulder pain (n = 8/50, 16%) and bleeding (n = 4, 8%) were also cited. Similarly, vasovagal symptoms (n = 71/134, 53%) were the predominant side-effects noted with carbon dioxide, however, shoulder pain was much more prevalent (n = 49/134, 44%) and bleeding (n = 4/134, 3%) was also reported. Complications either did not occur or were not recorded. A statistically significant reduction in procedural time was found when carbon dioxide was used (SMD 5.46; 95% CI 0.96–9.96),[120,121,122,125,127] however, when subgroup analysis was performed according to risk of bias, the highest quality studies[122,125] showed a significant reduction in time taken when saline was used (SMD −0.40; 95% CI −0.74 to −0.05). Finally, a significant increase in patient satisfaction was noted when using saline compared to carbon dioxide (SMD 1.39; 95% CI 0.51–2.28).[121,122]

Saline allows for the efficient practice of "see and treat" services, where diagnosis is immediately followed by treatment, in the same outpatient hysteroscopy appointment. Furthermore, it is isotonic, which minimises risks associated with fluid overload and conducts electricity to allow for the operation of miniature bipolar electrosurgical electrodes.[136] Finally, saline is the distension medium of choice when using hysteroscopic tissue retrieval systems, as the use of carbon dioxide with these devices has not been evaluated. *[Evidence level 3]*

8.2 | How should uterine distension media be delivered during outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Saline should be instilled at the lowest possible pressure to achieve a satisfactory view.	**1++**	**A**	Meta-analysis[119] showed that higher uterine distension pressures cause more pain.

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Recommendation	Evidence quality	Strength	Rationale for the recommendation
Warming saline to approximate body temperature for outpatient hysteroscopy can be considered.	**1-**	**B**	Meta-analysis[119] did not show a reduction in pain with warmed saline, however, one RCT[133] showed improved patient satisfaction.

Fluid instillation methods and the effect on pain, acceptability and feasibility have not been compared for outpatient hysteroscopy, however, current approaches include:[25,107]

- Use of automated fluid management systems, e.g. setting initial intrauterine pressures at 40–50 mmHg and increasing to the minimum needed to obtain a satisfactory view.
- Manually distilling fluid via a syringe and titrating distention.
- Titrating inflow using the tap on the inflow channel (and/or outflow channel if a continuous flow hysteroscope).
- Using continuous flow via a gravity feed or external compression, although care needs to be taken to ensure initial pressure is kept low and that it is maintained to ensure the view is adequate.

A systematic review and meta-analysis[119] identified four randomised control trials[128-131] randomising women to receive saline distension media at different filling pressures, of which three studies[128-130] compared more than one pressure threshold. Women randomised to undergo hysteroscopy at pressures of ≤40 mmHg had intra-procedural pain scores that were significantly reduced when compared to women undergoing hysteroscopy at pressures above this threshold (SMD, −0.67; 95% CI −1.09 to −0.26). When comparing women receiving filling pressures of ≤50mmHg versus >50mmHg, ≤60mmHg versus >60mmHg, ≤70mmHg versus >70mmHg and ≤80mmHg versus >80mmHg, no significant difference in pain scores could be found. With regards to post-procedural pain, any reduction in distension media pressure resulted in a statistically significant reduction in pain. Despite lower filling pressures being associated with less pain, it also resulted in lower likelihood of a satisfactory view. At pressures of 30–40mmHg, the proportion of satisfactory hysteroscopies was between 81.25–88.75%, whereas at pressures of 50–100mmHg, the proportion increased to a range between 94.87–98.75%.[128-130] There was insufficient data available to comment upon the impact of filling pressure on procedural time and side-effects. No serious complications were reported in the studies investigating distension media filling pressure. Data relating to the impact of distension media filling pressure on pain associated with outpatient hysteroscopy should be interpreted cautiously because unless using modern fluid management systems (which themselves are not completely reliable due to dynamic fluid losses through the fallopian tubes, cervix, intravascularly etc.), then intrauterine pressures are not being accurately measured. Finally, one must consider that the flow rate of distension media through the hysteroscope and subsequent uterine pressure will depend on the hysteroscope diameter, fluid reservoir height and dynamic losses.

Four randomised controlled trials[132-135] allowed for the meta-analysis of pain scores of women randomised to either saline at room temperature or warmed saline in the previously mentioned systematic review,[119] of which three[132-134] reported intra-procedural pain and all four reported post-procedural pain (recorded immediately after,[135] and at 1,[132] 5[134] and 15[133] minutes following the end of hysteroscopy). No significant difference in pain was observed either during (SMD 0.59; 95% CI −0.14 to 1.33) or after (SMD 0.22; 95% CI −0.35 to 0.79) hysteroscopy. Additionally, no significant difference was found regarding procedural time (SMD −0.17; 95% CI −0.47 to 0.13). Adverse events or failure either did not occur or were not reported. Three of the trials, however, did comment on patient satisfaction,[132-134] with only one study[133] finding a significant difference, where women randomised to warmed saline reported higher satisfaction rates ($P = 0.05$). Since the publication of the aforementioned systematic review,[119] a quasi-randomised control trial investigating the impact of warmed saline against room temperature found that warming was associated with a significant reduction in intra-procedural ($P = 0.02$) and post-procedural ($P = 0.003$) pain at diagnostic hysteroscopy, although the clinical significance of the observed reduction in pain is unclear.[137] Again, no adverse events were recorded in either group.

9 | LOCAL ANAESTHESIA AND CERVICAL DILATATION

9.1 | Should routine dilatation of the cervical canal be performed prior to insertion of the hysteroscope in the outpatient setting?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Routine cervical dilatation should be avoided prior to outpatient hysteroscopy.	**2+**	**C**	This practice is associated with pain, vasovagal reactions and uterine trauma, and is unnecessary where miniature hysteroscopes (with an outer diameter ≤3.5mm) are used.

Blind dilatation of the cervix in order to instrument the uterine cavity is commonly performed under general anaesthesia and is associated with cervical and uterine trauma.[2,71–74] However, in the outpatient setting, dilatation of the cervix causes pain and discomfort and generally requires the use of local anaesthesia.[1] No RCTs examining the routine or selective use of blind cervical dilatation prior to outpatient hysteroscopy were identified.[68]

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9.2 | Should local anaesthesia be administered prior to outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Local anaesthesia should not be routinely administered prior to outpatient hysteroscopy where a vaginoscopic approach is used. It should be considered where use of a vaginal speculum is planned e.g. where cervical dilatation is anticipated, due to either cervical stenosis and/or the utilisation of larger-diameter hysteroscopes (≥5mm outer diameter).	1++	A	While meta-analysis[138] showed that local anaesthesia reduces pain during and after outpatient hysteroscopy, the clinical benefit regarding its analgesic benefit is uncertain when compared to the use of vaginoscopy. The same meta-analysis does not show that local anaesthesia reduces the risk of vasovagal episodes nor the chances of a failed procedure.

A systematic review and meta-analysis[138] identified 37 RCTs[42,47,51,55,58,82,105,124,139–167] examining pain in women undergoing outpatient hysteroscopy randomised to receive either a local anaesthetic or a control. Meta-analysis showed that administering local anaesthesia significantly reduced pain during outpatient hysteroscopy (SMD −0.57, 95% CI −0.79 to −0.34) when compared against placebo or nil.[51,105,124,139–145,147,149,152,156–160,163–165] Local anaesthesia also reduced pain after outpatient hysteroscopy (SMD −0.30, 95% CI −0.54 to −0.06), when aggregated from pain scores recorded at 5,[143] 10,[139] 15,[144,145,152] 30[141,149,156,157,159,160] and 60[158] minutes following hysteroscopy. Local anaesthesia did not, however, reduce the incidence of vasovagal episodes (OR 0.73, 95% CI 0.50–1.09),[47,105,139,140,144,145,148,152,153,156,158–160,162,163,165,167] nor reduce the rate of failure (OR 0.72, 95 % CI 0.47–1.11),[105,140,141,143–149,152,153,156,158–160,162–165] when compared against placebo or nil. The incidence of complications was too small to determine an association to either local anaesthesia or its control.

The clinical significance for the demonstrated reduction in average pain scores remains unclear, especially when considering that few studies commented on the impact of the reduction in pain on satisfaction and acceptability of administration of local anaesthesia when compared to their control. In studies where a placebo was administered, instead of a local anaesthetic, a lower than expected difference in mean pain was likely observed because instillation of placebo into the cervix/uterus still causes pain. A systematic review[168] investigating the impact of the vaginoscopic approach on pain in outpatient hysteroscopy identified one RCT randomising women to either hysteroscopy with intracervical mepivacaine or to hysteroscopy using the vaginoscopic approach.[169] This found a significant reduction in pain both during (3.8±2.7 versus 5.34±3.23) and after (3.02±2.50 versus 4.57±3.30) diagnostic hysteroscopy when the vaginoscopic approach was used, despite using a hysteroscope with a 3.7mm diameter. The adoption of vaginoscopy has been facilitated by the development of miniature hysteroscopes (≤3.5mm outer diameter), and so as this has been found to confer less pain and side-effects, this supports the use of local anaesthesia only when cervical dilation is anticipated.[168]

9.3 | Which local anaesthesia should be administered and how should it be given prior to outpatient hysteroscopy?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
The choice of local anaesthetic agent for outpatient hysteroscopy should be left to the discretion of the hysteroscopist.	1++	A	While meta-analysis[138] showed that mepivacaine and bupivacaine were the only agents associated with both a reduction in pain during and after outpatient hysteroscopy and mepivacaine was the only agent to reduce vasovagal episodes, there are no direct head-to-head comparisons between anaesthetic agents to make robust conclusions as the existing comparisons are against either nil or placebo.
The choice of route(s) of administration of local anaesthesia for outpatient hysteroscopy should be left to the discretion of the hysteroscopist, however, intrauterine fundal anaesthesia should be considered for the reduction of pain during outpatient endometrial ablation.	1++	A	Meta-analysis[138] showed that all routes of administration of local anaesthesia prior to outpatient hysteroscopy reduce pain during the procedure. One RCT[158] demonstrated a significant reduction in pain during endometrial ablation when intrauterine fundal anaesthesia was given.
Short-acting local anaesthetics (e.g. mepivacaine, lidocaine and prilocaine) require at least 2 minutes and longer acting agents (e.g. bupivacaine) require at least 5 minutes to allow for onset of effect.	1++	A	Meta-analysis[138] showed that the interval between administration of local anaesthesia and commencement of the procedure will depend upon the pharmacokinetics of the local anaesthetic and how it is administered.

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In the previously mentioned systematic review and meta-analysis,[138] subgroup analyses were performed in order to identify the specific local anaesthetic agents that were effective in reducing pain during and after outpatient hysteroscopy, when compared to nil or placebo. Bupivacaine, a long-acting local anaesthetic, produced the greatest reduction in intraprocedural pain (SMD −4.27, 95% CI −5.06 to −3.49).[139] There was a significant reduction in pain during hysteroscopy with the use of short acting local anaesthetics (lidocaine [SMD −0.34, 95% CI −0.52 to −0.16];[124,141,143,147,149,152,156,159,160,163,165] mepivacaine [SMD −0.60, 95% CI −1.03 to −0.17][51,105,144,145,164] and prilocaine [SMD −0.40, 95% CI −0.68 to −0.12]).[157] Mepivacaine (SMD −0.66; 95% CI −1.19 to −0.14)[144,145] and bupivacaine (SMD −1.55; 95% CI −2.05 to −1.06)[139] were the only local anaesthetics to significantly reduce pain after hysteroscopy. While meta-analysis of vasovagal episodes did not show any benefit when local anaesthesia was given, subgroup analysis according to the type of local anaesthetic given found a significant reduction in vasovagal episodes, only when mepivacaine was given (OR 0.33, 95% CI 0.19–0.60).[105,144,145,162,167]

The same systematic review and meta-analysis[138] also performed subgroup analyses to identify which specific routes of local anaesthesia administration led to a reduction in pain during and after outpatient hysteroscopy. Topical (application of local anaesthesia directly onto the ectocervix), transcervical (instillation of local anaesthesia through the cervix via either a cannula or within the distension medium), intracervical (injection of local anaesthesia directly into the ectocervix) and paracervical (injection of local anaesthesia into the cervicovaginal junction) routes were investigated when given in an outpatient setting. All routes of administration were associated with a significant reduction in pain during outpatient hysteroscopy when compared against placebo or nil; this encompassed the topical (SMD −0.36, 95% CI −0.66 to −0.06),[140,156,163,165] transcervical (SMD −0.33, 95% CI −0.64 to −0.02),[124,144,147,152,156,160] intracervical (SMD −0.38, 95% CI −0.57 to −0.19)[51,141,149,157] and paracervical (SMD −1.09, 95% CI −0.90 to −0.31)[105,139,143,145,159,164] routes. In contrast, no specific route of administration of local anaesthesia led to a significant reduction in pain following hysteroscopy. When subgroup analysis was performed to determine the optimal route of administration for the reduction of vasovagal episodes, a significant reduction was observed only when given through the transcervical route (OR 0.39, 95 % CI 0.18–0.83).[47,144,156,160,167] A randomised controlled trial found that giving intrauterine fundal anaesthesia, using a combination of mepivacaine and bupivacaine, during outpatient hysteroscopy three minutes prior to outpatient endometrial ablation, showed a statistically significant reduction in intra-procedural (SMD −0.49, 95 % CI −0.90 to −0.07) but not post-procedural (SMD 0.00, 95% CI −0.40 to 0.41) pain, when compared against placebo.[158] The incidence of vasovagal episodes was balanced between groups (OR 2.44, 95% CI 0.53–11.32).

Unless given within the distension media,[124] local anaesthesia in the aforementioned systematic review and meta-analysis[138] was given two minutes (lidocaine),[147,152] five minutes (lidocaine,[141,143,156,159,160,163,164] mepivacaine,[51,105,144,164] bupivacaine[139]) or ten minutes (EMLA™,[140] mepivacaine[145]) before outpatient hysteroscopy. No RCTs randomised women to receive the same local anaesthetic route or agent at different times prior to outpatient hysteroscopy. In the absence of data to support a specific local anaesthetic regime, standard local protocols regarding the type, maximum dosage and route of administration of local anaesthesia should be implemented to ensure adequacy of anaesthesia and help both recognise and prevent rare, but potentially serious side-effects resulting from systemic vascular absorption.[170]

10 | CONSCIOUS SEDATION

10.1 | Should conscious sedation be used to reduce pain associated with outpatient hysteroscopic procedures?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Conscious sedation should not be routinely used in outpatient hysteroscopic procedures.	**1–**	**B**	Meta-analysis[171] showed no benefit of intravenous conscious sedation and led to more side-effects. There were no data regarding adverse events available to make recommendations for the use of inhaled conscious sedation.
If conscious sedation is to be employed, women and people must be appropriately selected beforehand and hysteroscopy must be performed in a suitable environment, where there is a separate staff member who has the skills and equipment necessary to monitor vital observations and recognise and care for women and people who are over-sedated.	**4**	**GPP**	Life threatening complications can result from the use of conscious sedation and so it is imperative that guidance produced by the Academy of Medical Royal Colleges in the safe use of conscious sedation is followed.[172]

Sedation induces a depression in consciousness, which ranges from minimal sedation and anxiolysis, through to moderate or 'conscious' sedation, deep sedation, and finally ending with general anaesthesia. While responsiveness is always suppressed, as the level of sedation becomes deeper, so does the potential ability of the woman to maintain their airway, ventilation and cardiovascular function.[173] Conscious sedation is therefore defined as a "drug-induced depression of consciousness during which women respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation" (i.e. not a painful stimulus) where "no interventions are required to maintain a patent airway when

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spontaneous ventilation is adequate" and "cardiovascular function is usually maintained".[174]

A systematic review and meta-analysis[171] investigating the role of conscious sedation against suitable controls for the control of pain for outpatient hysteroscopy, included seven RCTs.[44,55,56,60,151,175,176] Intravenous conscious sedation, when compared with local anaesthesia, reduced pain during (SMD −0.26, 95% CI −0.51 to −0.01), but not after (SMD −0.18, 95% CI −0.43 to 0.07) outpatient hysteroscopy.[55,151] No significant difference in side-effects were noted when the studies were pooled (OR 15.58, 95% CI 0.08–2891.91).[55,151] Intravenous conscious sedation, when compared to an oral analgesic and antispasmodic, was associated with increased pain, both during (SMD 1.03, 95% CI 0.56–1.49) and after (SMD 0.49, 95% CI 0.04–0.93) hysteroscopy and was associated with significantly more side-effects (OR 134.33, 95% CI 16.14–1118.17).[55] Side-effects in women randomised to conscious sedation were either vasovagal symptoms occurring at the time of or shortly after hysteroscopy, or dizziness that persisted longer than one hour following the end of hysteroscopy. Intravenous sedation, when compared with an oral analgesic alone, did not show any significant difference in intra-procedural pain (SMD −0.16, 95% CI −0.59 to 0.26).[56] *[Evidence level 1++]*

Inhaled conscious sedation (in the form of 70% N_2O/30% O^3), when compared to oral analgesia and anxiolysis, showed the greatest reduction in pain during hysteroscopy (SMD −1.04, 95% CI −1.57 to −0.52), however side-effects were not recorded, and so its use cannot be supported outside of a research context.[60] *[Evidence level 1++]*

Because sedative drugs depress the central nervous system and have the potential to impair respiration, circulation or both, close monitoring of the woman or person must be undertaken by a designated staff member, separate to the hysteroscopist, to ensure maintenance of vital observations (heart rate, blood pressure, respiratory rate, pulse oximetry, with electrocardiography and capnography performed where appropriate) peri- and post-procedurally, in accordance with guidance produced by the Academy of Medical Royal Colleges.[172] This individual must be able to identify a woman who becomes over-sedated and ensure the appropriate response is taken such as requiring the administration of a reversal agent, airway maintenance, and, rarely, full cardiopulmonary resuscitation. Patient selection is of paramount importance, in order to minimise the risks associated with conscious sedation, where obese, elderly and/or comorbid women may either not be suitable or require different sedating regimes. Many centres do not have the equipment, clinic space and staff necessary to deliver conscious sedation safely in the outpatient setting, which require facilities to convert to a general anaesthetic in the event of cardiorespiratory compromise. In those that do, it is performed in an endoscopy suite, and does not confer the benefits of being in an "office setting"; women still need to arrive at the start of the session to be seen by an anaesthetist, be fasted prior to their procedure, and cannot be discharged until the effects of the conscious sedative wear away, often necessitating a hospital bed. In keeping with this, the European Society for Gynaecological Endoscopy (ESGE), the American Association of Gynecologic Laparoscopy (AAGL) and the Global Congress of Hysteroscopy (GCH) recently produced a standardised nomenclature to enable consistency in reporting of hysteroscopic procedures, where the facility to administer parenteral medications with a sedative effect, or regional/general anaesthesia is considered an operating room, as opposed to an outpatient setting.[8] *[Evidence level 4]*

11 | VAGINOSCOPY

11.1 | Does a vaginoscopic approach to outpatient hysteroscopy reduce pain and increase the feasibility of the procedure?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Vaginoscopy should be the standard technique for outpatient hysteroscopy unless the use of a vaginal speculum is required (e.g. when dilating the cervix or obtaining a blind endometrial biopsy).	**1++**	**A**	Meta-analysis[168] showed that vaginoscopy is significantly less painful, quicker and associated with fewer vasovagal episodes when compared to the use of a vaginal speculum.
Vaginoscopy should still be considered after using a vaginal speculum to administer local anaesthesia to the cervix and/or cervical dilatation in order to reduce the pain associated with genital tract instrumentation and increase manoeuvrability of the hysteroscope.	**4**	**GPP**	This is in order to reduce the pain associated with genital tract instrumentation and increase manoeuvrability of the hysteroscope.

Vaginoscopy or the 'no touch' approach to hysteroscopy refers to a technique where the hysteroscope is introduced into the vagina, through the cervical canal and into the uterine cavity without the need for a vaginal speculum or cervical instrumentation. By performing hysteroscopy without a vaginal speculum, which causes lower genital tract pain, manoeuvrability of the hysteroscope within the uterine cavity is improved because there is no vaginal speculum restricting movement. This is particularly advantageous in women and people who cannot lie supine due to medical comorbidities (e.g. heart failure, respiratory disease etc.), are obese, who have acutely flexed uteri and in those who have restricted hip movement. Women who are nulliparous, suffer from vaginismus, are virgo intact and/or suffer from genital tract atrophy may also benefit from vaginoscopy, where distension of the vagina is minimised. A systematic review and meta-analysis[168] identified seven RCTs comparing vaginoscopic versus traditional outpatient hysteroscopy, which

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employed the use of a vaginal speculum as a minimum.[169,177–182] The vaginoscopic approach was significantly less painful during (SMD −0.27, 95% CI −0.48 to −0.06)[169,177,180,182] and 15 minutes after hysteroscopy (SMD −0.55, 95 % CI −0.91 to −0.18).[169] Vaginoscopy was also significantly quicker (SMD −0.25, 95 % CI −0.43 to −0.08)[169,177,178–180,182] and associated with significantly fewer vasovagal episodes (OR 0.35, 95 % CI 0.15–0.82).[169,177,182] Complications were only found in one of the six trials;[182] this reported no significant difference in the incidence of post-operative infection between the two methods; infection was reported in 27/798 women (3.4%) who had vaginoscopy, compared with 31/799 women (3.9%) who underwent the traditional approach ($P=0.60$). All other complications that were reported occurred in women randomised to the use of a vaginal speculum and included cervical trauma (n = 2), admission for analgesia (n = 2) and postprocedural haemorrhage (n = 1). Neither the vaginoscopic technique nor the traditional approach reduced failure rates (OR 0.98, 95 % CI 0.69–1.38).[169,177–182]

In women who require a vaginal speculum for administration of local anaesthesia, many clinicians remove the speculum before performing hysteroscopy to invoke the aforementioned benefits of the vaginoscopic approach.[47,82,140,157]

12 | PREVENTION OF INFECTION

12.1 | Should routine antibiotic prophylaxis be employed in outpatient hysteroscopic procedures to reduce the incidence of procedural-related infection?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
Routine antibiotic prophylaxis is not recommended for outpatient hysteroscopic procedures.	**1++**	**A**	One RCT[183] found no benefit in administering antimicrobial prophylaxis for the reduction of post-procedural infection. Clinicians should also bear in mind that there is no evidence to support the use of prophylactic antibiotics when performing an endometrial ablation.
Outpatient hysteroscopy should be delayed and genital tract swabs taken and / or antibiotics administered if pelvic infection is suspected and confirmed microbiological infection should be treated with antibiotics. If a pyometra is diagnosed at the time of outpatient hysteroscopy, antibiotics should be administered immediately to minimise the risk of systemic infection.	**3**	**D**	This recommendation was made based on a survey of practice.[184]

Only one RCT examined the incidence of post-procedural infection in women undergoing outpatient hysteroscopy randomised to receive either antibiotic prophylaxis (in the form of 1g cefazolin intramuscularly) or placebo (10ml saline intramuscularly).[183] No trials have investigated the role of prophylactic antibiotics for the reduction of post-operative infection following endometrial ablation. All procedures were therapeutic; including hysteroscopic polypectomy, septoplasty, myomectomy and intrauterine adhesiolysis. Post-procedural infection was diagnosed if two or more of the following criteria were met in the 5 days post-hysteroscopy: "(i) fever (body temperature greater than 38°C or 100.4°F at repeated measurements over a period of at least 48 hours); (ii) lower abdominal pain; (iii) uterine, adnexal, or cervical motion tenderness; (iv) purulent leucorrhoea; (v) vaginal discharge or itchiness; and (vi) dysuria". In the 1046 women who underwent hysteroscopy, only 12 (1.15%) were found to meet the criteria of post-procedural infection, where 5/523 women (1.0%) were initially allocated cefazolin and 7/523 women (1.3%) were allocated placebo ($P>0.05$). Antibiotics were prescribed in all cases, leading to complete resolution of infection in all cases, with no women developing upper genital tract/pelvic infection, as confirmed by clinical and sonographic examination. No trials have investigated the role of prophylactic antibiotics for the reduction of post-operative infection following endometrial ablation. *[Evidence level 1++]*

Despite the low incidence of pelvic infection following hysteroscopy[185] and the absence of evidence for reduction of post-operative infection with the routine use of antibiotics, women with symptoms and signs of genital tract infection, including a pyometra, should have their procedure deferred, genital tract swabs taken and/or empirical antibiotics administered. In post-menopausal women, a non-sterile pyometra should be suspected when intrauterine fluid is seen on pelvic scanning and/or there is a mucoid vaginal discharge. If a pyometra is diagnosed during an outpatient hysteroscopy there is a risk of rapid dissemination of pelvic and systemic infection and so antibiotics should be administered as soon as possible, with the initial dose ideally administered intravenously to optimise the onset of action followed by a full oral course.[184] *[Evidence level 3]*

13 | DOCUMENTATION

13.1 | How should procedural technique and findings at hysteroscopy be recorded?

Recommendation	Evidence quality	Strength	Rationale for the recommendation
A standardised proforma is recommended for the documentation of hysteroscopic technique and findings.	**4**	**GPP**	This is considered best practice.[25]

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The majority of units use either a written or digital/computerised standardised proforma to record procedural technique and findings. *[Evidence level 4]*

Items that should be recorded pertaining to technique include:

- Operator / surgeon
- Hysteroscope/operative device used, including instrument diameter as a minimum
- Approach (vaginoscopy or speculum)
- Distension medium used
- Local anaesthesia (agent, volume, route)
- Cervical instrumentation (tenaculum, cervical dilatation)
- Biopsy performed (and if so, method used e.g. directed/blind and device used i.e. Pipelle or other device)
- Operative procedure performed, if applicable (e.g. polypectomy, myomectomy, septoplasty, coil removal, removal of retained pregnancy tissue etc.)
- Use of oral or inhalational medications with an analgesic or sedative effect (e.g. Entonox®, Penthrox®)
- Procedural success (yes/no) and reasons for abandonment (e.g. intolerable pain, poor visualisation etc.), if applicable
- Complications (e.g. vasovagal reaction, uterine perforation, heavy bleeding etc.) *[Evidence level 4]*

Items that should be recorded regarding findings include:

- Impression and description of vulva, vagina, cervix and endometrium (functional or pathological)
- Visualisation of both ostia
- Details of any congenital (hypoplastic 'T' or 'Y' shaped uterus, septum, other structural anomalies) or acquired uterine pathology (adhesions, cervical niches, fibroids FIGO Type 0–3, polyps, retained products of conception)
- The uterocervical length should be recorded when a global biopsy is taken or an intrauterine device fitted. *[Evidence level 4]*

Pictures and/or diagrams may also be helpful in recording findings at hysteroscopy. Where possible, digital images of the uterine cavity and/or cervix (e.g. panoramic view of the cavity, magnified views of the tubal ostia/cornual regions, fundus, uterine walls, cervical canal etc.) should be captured, especially where there is any intrauterine pathology (e.g. global endometrial appearances such as vascularity, thickening, irregularity, necrosis; focal endometrial lesions such as polyps, fibroids, adhesions, congenital uterine anomalies, embedded coils etc.).[25] *[Evidence level 4]*

14 | RECOMMENDATIONS FOR RESEARCH

- Effect of cervical preparation with prostaglandins on pain relief and feasibility in outpatient hysteroscopy.
- Safety, acceptability and feasibility of hysteroscopy according to angle of distal optical lens.
- Effectiveness of the vaginoscopic approach to outpatient hysteroscopy in relieving pain compared with traditional approaches with local anaesthesia.
- Relative effectiveness of different types, routes, doses and timings of local anaesthesia on pain and incidence of vasovagal reactions.
- Effectiveness of warming fluid distension media on pain relief and satisfaction.
- Effectiveness of methoxyflurane (Penthrox®) on pain relief and satisfaction.
- Assessment of specific operative hysteroscopic technologies including endometrial ablative devices, regarding pain, acceptability, feasibility and effectiveness.
- Evaluation of technical, analgesic, anaesthetic and sedative interventions for specific operative outpatient hysteroscopic procedures.
- Qualitative research exploring patient experience and preferences.
- Qualitative research exploring patient recovery and return to daily activity following outpatient hysteroscopy.

15 | AUDITABLE TOPICS

Units should consider collecting data for quality assurance purposes. The lower estimate of the confidence intervals have been used to define the minimum audit standard or where data are lacking or considered inappropriate, expert opinion has been relied upon (BSGE Ambulatory Care Network).[23] However, the data sources have been provided to allow units / practitioners to set and aim for higher standards as appropriate where units / practitioners should strive for continual improvement.

Criteria	Procedure(s)	Standard	Source(s)
WOMAN-CENTRED			
Provision of pre-appointment written information on OPH		≥95%	88.7% (95% CI 87.8%–89.5%)[22] however expert opinion[23] felt that the standard should be higher
Mean peak intra-procedural pain score (on an 11-point Visual Analogue Scale)	Diagnostic hysteroscopy +/- global endometrial biopsy	≤5.2	≤5.2 (95% CI 5.12–5.29)[22]
	Insertion/retrieval of intrauterine device (IUD)	≤5.2	≤5.16 (95% CI 4.91–5.41)[22]
	Hysteroscopic polypectomy	≤5.1	≤5.1 (95% CI 4.91–5.29)[22]
	Hysteroscopic myomectomy	≤6.4	≤6.37 (95% CI 5.37–7.36)[22]
	Endometrial ablation	≤6.5	≤6.48 (95% CI 5.8–7.16)[22]

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Criteria	Procedure(s)	Standard	Source(s)
Procedure acceptability (yes/no)	Diagnostic hysteroscopy	≥97%	≥97.8% (95% CI 97.0–98.5%)[182]
	Hysteroscopic polypectomy	≥95%	97.8% (95% CI 94.9%–99.3%)[186]; 99.2% (95% CI 95.4%–99.9%)[110]
	Endometrial ablation	≥77%	93.6% (95% CI 78.6–99.2%)[117]; 77%–94%[187]
Mean overall level of care	All hysteroscopies & endometrial ablation	9.7/10	≥9.73 (95% CI 9.70–9.75)[22]
PROCEDURAL			
Compliance with safety checklists	All hysteroscopies & endometrial ablation	≥99%	Expert opinion[23]
Documentation completion rates°	All hysteroscopies & endometrial ablation	≥99%	Expert opinion[23]
Vasovagal reaction	Diagnostic hysteroscopy	≤2%	1.1% (95% CI 0.7%–1.9%)[182]
	Hysteroscopic polypectomy & endometrial ablation*	<12%	5.8% (95% CI 2.4%–11.6%)[110]
Uterine / cervical trauma	All hysteroscopies & endometrial ablation*	≤0.5%	≤0.1% (95% CI 0.02–0.50%)[182]; 0%[186]
Infection	All hysteroscopies#	≤5%	≤3.6% (95% CI 2.80–4.70%)[182]
	Endometrial ablation	≤16%	4.8% (95% CI 0.6%–16.1%)[117]
Hospital admission	All hysteroscopies & endometrial ablation+	<5%	≤2.0% (90% CI 0.3%–4.8%)[188]
Hospital readmission	All hysteroscopies & endometrial ablation+	≤3 .5%	≤1.5%; (90% CI 0.1%–3.5%)[188]

Nb. There are no reliable data for operative outpatient myomectomy or removal of retained products of conception

* No data available for outpatient endometrial ablation

No data available for outpatient hysteroscopic polypectomy or outpatient endometrial ablation

+ No data available for outpatient hysteroscopic polypectomy or outpatient endometrial ablation

° documentation should cover the points listed in section 13.1 of the GTG

16 | USEFUL LINKS

The following British Society for Gynaecological Endoscopy (BSGE) quality assurance tools for outpatient hysteroscopy are recommended:

- BSGE outpatient hysteroscopy patient satisfaction survey, allowing for local data to compared with national standards.[22] A template of the survey be accessed from: https://www.bsge.org.uk/wp-content/uploads/2019/09/Outpatient-hysteroscopy-patient-survey-FINAL-010919.pdf
- BSGE Surgical Information Collection System (BSGE SICS) to collect data on demographic, technologies, feasibility and complications of outpatient hysteroscopic procedures (diagnostic outpatient hysteroscopy, polypectomy, myomectomy, septoplasty, removal retained products of conception, tubal cannulation / sterilisation, endometrial ablation). This can be accessed from: https://www.bsgesics.com/

ACKNOWLEDGEMENTS

The authors acknowledge the contributions of Dr A Mahmud PhD MRCOG PGDip (MedEd), Dr H Stevenson MRCOG MSc MEd, Dr A Carnegy BMedSc (Hons) MBChB, Dr L Wilson BSc, MBChB (Hons), Dr CS Graham BSc (Hons) FRCA and Ms L Davies.

FUNDING INFORMATION

All those involved in the development of the Green-top Guidelines, including the Guidelines Committee, Guidelines Committee co-chairs, guideline developers, peer reviewers and other reviewers, are unpaid volunteers and receive no direct funding for their work in producing the guideline. The exception to this are the RCOG staff involved who are salaried employees of the College and Guidelines Committee members who receive reimbursement for expenses for attending Guidelines Committee meetings. Please see more information on travel expense rules on the RCOG website.

CONFLICT OF INTEREST STATEMENT

PMD has received part funding for a PhD stipend from Tommys and the Birmingham Women's Hospital Ambulatory Gynaecology Fund and travel and accommodation funding for attending a meeting from Hologic (Smith & Nephew). PPS has received an honorarium for speaking from Medtronic (Smith & Nephew). NAMC has received an honorarium for attending an advisory meeting from Hologic. TJC has received research grants, honoraria for speaking and running courses, and honoraria for attending advisory board meetings from Hologic (Cytyc) and Medtronic (Smith & Nephew); he is also a former president of the British Society for Gynaecology and Endoscopy (BSGE).

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How to cite this article: De Silva PM, Smith PP, Cooper NAM, Clark TJ. Outpatient Hysteroscopy. BJOG. 2024;131(13):e86–e110. https://doi.org/10.1111/1471-0528.17907

APPENDIX 1: Explanation of grades and evidence levels

Classification of evidence levels

1++	High-quality meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a very low risk of bias
1+	Well-conducted meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a low risk of bias
1–	Meta-analyses, systematic reviews of randomised controlled trials or randomised controlled trials with a high risk of bias
2++	High-quality systematic reviews of case–control or cohort studies or high-quality case–control or cohort studies with a very low risk of confounding, bias or chance and a high probability that the relationship is causal
2+	Well-conducted case–control or cohort studies with a low risk of confounding, bias or chance and a moderate probability that the relationship is causal
2–	Case–control or cohort studies with a high risk of confounding, bias or chance and a significant risk that the relationship is not causal
3	Non-analytical studies, e.g. case reports, case series
4	Expert opinion
Grades of Recommendation	
A	At least one meta-analysis, systematic reviews or RCT rated as 1++, and directly applicable to the target population; or a systematic review of RCTs or a body of evidence consisting principally of studies rated as 1+, directly applicable to the target population and demonstrating overall consistency of results
B	A body of evidence including studies rated as 2++ directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 1++ or 1+
C	A body of evidence including studies rated as 2+ directly applicable to the target population, and demonstrating overall consistency of results; or Extrapolated evidence from studies rated as 2++
D	Evidence level 3 or 4; or Extrapolated evidence from studies rated as 2+
Good Practice Points	
GPP	Recommended best practice based on the clinical experience of the guideline development group.*

* on the occasion when the guideline development group find there is an important practical point that they wish to emphasise but for which there is not, nor is there likely to be any research evidence. This will typically be where some aspect of treatment is regarded as such sound clinical practice that nobody is likely to question it. These are marked in the guideline, and are indicated by ✓. It must be emphasised that these are NOT an alternative to evidence-based recommendations, and should only be used where there is no alternative means of highlighting the issue.

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This guideline was produced on behalf of the British Society of Gynaecological Endoscopists and the Royal College of Obstetricians and Gynaecologists by:

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All RCOG guidance developers are asked to declare any conflicts of interest. A statement summarising any conflicts of interest for this guideline is available from: https://www.rcog.org.uk/en/guidelines-research-services/guidelines/gtg59.

The final version is the responsibility of the Guidelines Committee of the RCOG.

The guideline will be considered for update 3 years after publication, with an intermediate assessment of the need to update 2 years after publication.

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This means that RCOG Guidelines are unlike protocols or guidelines issued by employers, as they are not intended to be prescriptive directions defining a single course of management. Departure from the local prescriptive protocols or guidelines should be fully documented in the patient's case notes at the time the relevant decision is taken.

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