Hysteroscopic sterilization is an important in-office procedure with excellent outcomes for patients and significant benefits to clinicians. In this article, 4 obstetrician/gynecologists and 1 registered nurse discuss the Essure procedure performed in the office setting and provide practical pearls for clinicians who either perform the procedure or are considering adding it for their patients.

Defining an in-office procedure

DR LEVY: Many so-called in-office procedures require a “mini-hospital” set-up in the office. I don’t regard these as true office-based procedures. To me, office-based procedures are those that can be done in a standard-sized, carpeted examination room; that is, they are incisionless and noninvasive. Hysteroscopic sterilization fulfills these criteria—this is why I am so excited about the Essure procedure as an option for my patients.

DR GREENBERG: I agree. Office-based procedures must be relatively comfortable for the patient and require limited pain management. In my opinion, if intravenous (IV) conscious sedation is necessary, the procedure is not truly office-based. Hysteroscopic sterilization should not require anesthesia or hospitalization.1

DR ZIMMERMAN: In an office procedure, preoperative...
REIMBURSEMENT ISSUES
The potential financial benefits of in-office procedures may be best examined by evaluating relative value units (RVUs). Hysteroscopic sterilization performed in a nonoffice (hospital or outpatient) setting yields 12.11 RVUs. An in-office procedure yields 57.91 RVUs. For Medicare patients, this translates into payments of about $450 (hospital-based) versus $2180 (office-based). Therefore, the office-based reimbursement (which includes the cost of the device) covers the use of office staff and equipment.

Additional savings are not captured in the above analysis, including the additional efficiency regarding the use of physician time.

—BARBARA LEVY, MD

This procedure is comparable in difficulty to those we perform regularly

medications must be oral; no injectable medications should be needed with the exception of ketorolac (Toradol®). The patient should experience little or no discomfort and be able to leave the office immediately postprocedure.

Transitioning from hospital to office

DR LEVY: We agree that an office-based procedure fits the flow of our regular office activities. Hysteroscopic sterilization meets these standards. How did you decide to bring this procedure into the office?

DR DOBBINS: I performed the procedure in the hospital for about a year. I was aware that the procedure could be performed with minimal sedation, though excessive sedation was administered in the hospital setting. I realized that I did not need to do a procedure requiring minimal sedation in the hospital. We compared the charges for a laparoscopic tubal ligation with in-hospital hysteroscopic sterilization and with in-office hysteroscopic sterilization. The latter was 30% to 50% less expensive than other options. Studies have demonstrated cost savings with in-office procedures.2

DR GREENBERG: I first performed the procedure in the operating room with the patient under general anesthesia or very heavy sedation. With each subsequent patient, I asked the anesthesiologist to reduce the sedation until I was using only a paracervical block. Patients were comfortable with this level of sedation; I then knew I could do the procedure in my office. We already did office hysteroscopy, so we had to acquire only a few pieces of equipment.

DR ZIMMERMAN: I have done office hysteroscopy for more than 15 years. We, too, perform other office-based procedures and had hysteroscopes and most of the equipment available. My main issue was training my nurse and medical assistants in the procedure.

DR DOBBINS: I had never done hysteroscopy in the office, although we do many sonohysterograms. Introducing this procedure was significant for us. We observed other physicians and saw that the procedure was comparable in difficulty to those that we perform regularly, such as colposcopy, and easier than others, such as the loop electrosurgical excision procedure (LEEP).

Given the large body of evidence concerning the efficacy of the procedure3-7 as well as literature relating to diagnostic and operative hysteroscopy, I easily convinced my partners to acquire the needed equipment.

DR LEVY: Several scope manufacturers—Wolf, Storz, and Olympus—offer packages for physicians who are making the transition to the office environment for hysteroscopic procedures. They also offer excellent training programs.

Conceptus has relationships with Karl Storz Endoscopy-America, Inc. and Richard Wolf Medical Instruments Corporation to provide Essure-trained physicians access to both the equipment and training needed to perform the Essure procedure in any site of service.

I have performed office diagnostic hysteroscopy for 20 years, so the concept of hysteroscopic in-office procedures was straightforward. I recently began to do in-office ablations; I do not do most hysteroscopic resections in the office.
The learning curve for in-office hysteroscopic sterilization

**DR LEVY:** Transition from heavy to mild sedation in the hospital seems a logical and reasonable approach: You learn the procedure while the patient is under heavy sedation and then use less sedation as you become more familiar with the procedure.

**DR GREENBERG:** I agree that this was a good approach. When I performed my first hysteroscopic sterilization, I did not have the benefit of observing another physician first. I was more concerned with patient comfort than with the relatively simple technical aspects of the procedure. Looking back, I believe that if I could have observed it as an in-office procedure in terms of patient comfort, I would have left the hospital immediately. Fortunately, physicians now have many opportunities to observe and become comfortable with in-office hysteroscopic sterilization.

**DR LEVY:** I agree: the procedure is easy for those used to office hysteroscopy. Otherwise, learning to move the scope 360º takes some practice. I also think that spending a little time working with your team in the office and having practice runs before performing the first few procedures is very helpful.

**DR ZIMMERMAN:** Newer physicians and those with little hysteroscopic experience initially have difficulty rotating the scope (not the camera) and positioning their hands. Most physicians perform the procedure with confidence by the end of the third or fourth case.

**DR GREENBERG:** I find that the rigid scopes are easier to place than the flexible scopes, and they provide a better picture. I use a Storz Bectocchi 5.5 scope (Karl Storz Endoscopy-America, Inc, Culver City, Calif) with a 12º lens. With it, I can visualize the uterus just by rotating the scope rather than repositioning it. If it weren’t for the issue of equipment sterilization, I probably would get rid of my flexible scope.

**DR LEVY:** I have a 3-mm rigid scope with a 30º lens that I use on all my patients. Sometimes I have to push the 30º scope to the side to get the right angle; it probably is somewhat more difficult to use.

**DR ZIMMERMAN:** I use a 5.5-mm Olympus sheath with my 3-mm Olympus scope (Olympus America Inc, Melville, NY) and a 5.9-mm sheath with my Medical Horizons scope. Both scopes have 30º lenses, which I find optimal. The 30º scope also has a minimal learning curve for experienced hysteroscopists.

I love the sheath on the Medical Horizons scope as the inflow and outflow ports can rotate 360º and are easily kept out of the way. The scope is rigid with fiberoptic bundles rather than rod lenses, so it is nearly impossible to break; but the image quality is not quite as sharp as that of the Olympus scope.

Patient counseling: Should clinicians discuss in-office vs hospital setting?

**DR LEVY:** When you counsel patients, do you discuss office vs hospital?

**DR GREENBERG:** No. Today, I am completely comfortable with hysteroscopic sterilization as an appropriate in-office procedure. In my mind, there are enough benefits as an in-office procedure to forego offering the hospital route. I tell each patient that, during the procedure, if she is too uncomfortable, we will stop immediately and try another approach.

Typically, patients report pain levels at 1 to 2 on a 10-point scale

**DR DOBBINS:** I agree. When I have discussed a hospital-based procedure with my patients, they have not been interested.

**DR LEVY:** I look my patients in the eye and tell them, “I don’t believe in pain.” I emphasize that I would not offer a patient a procedure that I didn’t think was very appropriate and safe for her in the office. I joke with them that screaming patients are really bad for business—and thereby underscore that this procedure is appropriate to the office.

Typically, patients report pain levels at 1 to 2 on a 10-point scale and say, “I would do that again in a heartbeat.” Obviously, even with minimal pain medication, patients should not drive and will need a ride home.

Some patients can tolerate the pain and choose to have the procedure without sedation, but I want a patient to walk out and tell others about this pain-free procedure.

**DR ZIMMERMAN:** At Kaiser Permanente, we offer all patients a sterilization class. A nurse educator discusses...
I sterilize 80% to 90% of patients hysteroscopically

no concerns about patency rates; results with hysteroscopic sterilization are comparable to those of tubal ligation. The device is equal to or far superior to other methods of birth control, and its safety is well documented.8,7

DR ZIMMERMAN: I have had only 1 patient decline to have the procedure in the clinic. She knew many of the people who worked in our department and felt more comfortable having her procedure out of the department. We did her procedure in the hospital in our conscious-sedation area with minimal sedation.

DR DOBBINS: A good laparoscopy candidate typically has underlying concerns, such as endometriosis. For other patients interested in permanent sterilization, I counsel that hysteroscopic sterilization is a better option: The procedure is shorter and less expensive, patients experience less pain and do better overall.

DR LEVY: I agree. I discuss with the patient the favorable 5-year outcomes data and our expectation that the procedure will offer life-long effectiveness.8 I stress the importance of scheduling a hysterosalpingogram (HSG) in 3 months to confirm the procedure's success. This reassures my patients—and me. I invite the patient to look at the screen with me during the HSG to see that the tubes are occluded.

DR LEVY: Patient comfort is a key issue in determining whether a procedure is an in-office procedure. I want this procedure to be a “wow experience,” not a tolerable one.

To ensure that it is pain-free, I use ketorolac tromethamine and paracervical block with an oral anxiolytic, such as alprazolam or diazepam (Valium®), and some oral meperidine hydrochloride (Demerol®) with hydroxyzine pamoate (Vistaril®). I avoid other narcotics, and I add hydroxyzine to eliminate the risk of nausea.

For the paracervical, I use a 25-gauge, 1½” needle at the end of a needle extender so that I can use a regular control syringe. The 25-gauge needle permits good visualization and enables me to control local anesthetic placement with less bleeding compared with a 22-gauge needle.

I put 1.5 cc at 12 o’clock. If I need the tenaculum (which will be placed at the 12 o’clock position) for the rest of the block (10 cc at 4 o’clock and 8 o’clock where the uterosacral ligament attaches), the process remains pain-free. Still, I try to complete the block without placing the tenaculum.

I use a mixture of 1% lidocaine and .25% bupivacaine, which helps those few patients who have persistent uterine cramping. Lidocaine acts quickly; bupivacaine has effects of longer duration. Mixing the 2 agents in a 20-cc dose avoids any chance of overdose and provides very rapid onset of the block.

DR ZIMMERMAN: I use the following premedication regimen for all of my in-office operative hysteroscopies. I begin with ibuprofen, 600 to 800 mg, the night before the procedure. One hour preprocedure, patients take another dose of ibuprofen, 1 tablet hydrocodone bitartrate (Vicodin®) or acetaminophen with codeine (Tylenol® No. 3), and 30 mg of oxazepam (SERAX®). I reduce this for patients weighing less than 120 pounds. Immediately before the procedure, patients receive ketorolac, 30 mg.

For my paracervical block, I use mepivacaine 1% (Polocaine®), 25 cc in a 30-cc syringe, with a 22-gauge spinal needle. Mepivacaine is more protein-bound and has tissue characteristics that differ from those of lidocaine, so I can use larger volumes.

I typically inject 8 to 10 cc just above and below the 3 and 9 o’clock positions of the cervix and 2 cc into the anterior cervical lip. I then place an HSG catheter (or an
insemination catheter) into the endometrial cavity and irrigate with 3 to 5 cc of the same solution. For a 150-lb woman, the maximum usable volume is 50 cc; for a smaller woman, 45 cc.

In theory, this protocol blocks numerous receptors: Ketorolac and ibuprofen manage the uterine stretch receptors; the paracervical block, the nerves that extend through the parametrium and uterosacrals; and the medication in the endometrium, the pain fibers at the tubal ostia. In fact, the only sensation that patients experience is that of device placement into the tubal ostia, as those pain fibers are above the reach of the paracervical block.

I do perform my cervical block somewhat differently: After the prep and with a Graves speculum in place, I place a ring forceps into the lateral fornix. I open this about 1 cm so that the lateral fornix can be easily seen. I then place the tip of the needle into position. I remove the ring forceps and comfortably position my hands. I ask the patient to cough; as she does, I insert the needle about ¼" to ½". After negative aspiration for blood, I inject with 1 hand. If the local anesthetic goes in about 1 cc/second with normal pressure, placement is correct. I then inject 9 to 10 cc and reposition the needle to inject just above and just below the 3 o’clock and 9 o’clock positions. I place 2 cc in the anterior cervical lip and go get a cup of coffee. Let me stress that, with this block, you need to wait 10 minutes, but the block will last for 1.5 to 2 hours.

DR GREENBERG: I give diazepam, 5 mg, to anxious patients. I use ketorolac, 45 mg intramuscularly (IM), 15 to 30 minutes prior to the procedure. For the paracervical block, I inject 1% chloroprocaine HCl (Nesacaine®), 10 to 20 cc, with a 22-gauge spinal needle, immediately after inserting a Greenberg speculum. Then I finish setting up my table.

A few nulliparous patients have reported slight discomfort in the cervical canal but not around the fallopian tubes. For nulliparas, I take special care to ensure a good paracervical block.

DR LEVY: You raise an important point: About a third of my hysteroscopic sterilization patients are nulliparous. Many have had only C-sections, and they experience somewhat more discomfort with the scope than those who have had vaginal deliveries. This has colored my choice in offering pain medication.

DR DOBBINS: If a patient is anxious, we provide alprazolam (Xanax®), 0.5 to 1 mg po, to take at home prior to the procedure. We give patients ketorolac, 30 or 60 mg IM, about 20 minutes preprocedure.

For our paracervical block, we use lidocaine and epinephrine, 20 cc. I use a 22-gauge spinal needle and make a paracervical.

We monitor postprocedure pain. We telephone patients later in the day, and then within 2 days, to evaluate pain based on a 1-to-10 pain scale. For our first 60 cases, the average pain associated with the procedure was 3.2; menstrual pain scored 2.76, indicating effective pain control.

We hear from patients who have no discomfort whatsoever; they are very enthusiastic about the procedure.

DR LEVY: Often, insertion and removal of the speculum are the most uncomfortable parts of the procedure.

For nulliparas, I take special care to ensure a good cervical block.

DR GREENBERG: I designed an open-sided, shortened Graves-type speculum. Bringing the cervix 2 cm to 3 cm closer to the opening of the speculum avoids the positioning issues.

DR DOBBINS: I generally try to remove the tenaculum after the scope is in position, if possible.

DR LEVY: The tenaculum is helpful to position the scope, especially if you need to move the scope laterally, but I agree: after you put the scope in, the tenaculum just gets in the way. I have more room to maneuver if I put the scope in as far as the external os and then remove the speculum.

Issues of patient selection for office-based hysteroscopic sterilization

DR LEVY: Are some patients not suitable for an in-office procedure?

DR GREENBERG: This is a very low-risk procedure; however, a patient who has unusual difficulty with basic procedures, such as Pap smears, may need additional medication or even hospital-based anesthesia.

DR LEVY: Yes, some patients need diazepam for a colposcopy and can’t tolerate an in-office LEEP procedure.
They say: “I don’t want to be conscious during the procedure.” They expect pain; it is probably inadvisable to try to talk them into an in-office procedure. Still, this procedure is probably safer in the office than in the OR because there are fewer interventions and less potential for drug interactions. It also is very quick.

**DR GREENBERG:** In general, my patients love the in-office option. That said, on a difficult patient, I would perform the procedure in the OR with an IV and an anesthesiologist, starting with very little analgesia and adding more as needed. There is no reason for any patient to have a bad experience with this procedure.

**DR DOBBINS:** I try to calm a difficult patient with “verbal anesthesia,” comforting and talking calmly or joking with her to help her relax. When I have an especially anxious patient, additional nursing staff sits and chats with her to help her relax. An anxious patient also may benefit from talking with patients who have had the procedure and found it pain-free. But, in some cases, a patient may be more comfortable in the hospital.

**DR LEVY:** Some of our colleagues who don’t perform a lot of office procedures may not be aware of the importance of relaxation techniques: I use my voice and touch to calm patients. For instance, while we’re getting ready, I may touch the patient’s foot and engage in verbal banter about how the preparation takes longer than the procedure. I explain what I’m doing, for instance, that the rustling noise occurs when I unwrap sterile equipment. If a patient’s partner is in the room, he can sit at her head and they can interact while we’re preparing.

**DR GREENBERG:** We have a second screen so the patient can watch. This makes the procedure less frightening—especially if there is no pain.

**DR ZIMMERMAN:** I agree completely. As long as the patient can see the monitor, she is engaged in the procedure and may forget to be nervous. I have had one patient jokingly ask me if I could do the procedure again: she blinked and missed an insertion.

**DR LEVY:** The experience is better in our offices for our patients: They know our staff and the environment. It’s much less intimidating than the hospital environment.

**DR DOBBINS:** Patients are satisfied with the in-office procedure; none of them say that they wish they had had it in the hospital.

### Combining hysteroscopic sterilization and endometrial ablation

**DR LEVY:** Are any of you doing endometrial ablation along with hysteroscopic sterilization?

**DR GREENBERG:** I have done a few endometrial ablations using the ThermaChoice™ (Gynecare Worldwide, division of Ethicon, Inc, Somerville, NJ) device immediately after a hysteroscopic sterilization. With regard to the NovaSure® (Cytyc Corporation, Marlborough, Mass) procedure, it needs to be done prior to hysteroscopic sterilization to avoid the risk of inducing thermal energy into the tubes via the metal coils. However, this may induce more tubal spasm, making the hysteroscopic sterilization more difficult.

**DR DOBBINS:** I have used NovaSure with hysteroscopic sterilization; however, the ostia are often difficult to see without methylene blue dye.

**DR ZIMMERMAN:** I have used the Hydro ThermAblator® (Boston Scientific Corporation, Natick, Mass) and NovaSure in the office for several years; both are very well tolerated. I have used the former in conjunction with hysteroscopic sterilization in 2 patients: I do the hysteroscopic sterilization procedure using a 5.5-mm hysteroscope, and then dilate to 8 mm for the endometrial ablation procedure. The hysteroscopic sterilization devices do not transfer heat so I have no concern about heating the distal coils. The company has conducted thermal transfer benchmark studies prior to their comarketing agreement with Gynecare for the ThermaChoice ablation device.10,11

**DR GREENBERG:** Are most of these combined procedures really suitable in the office?

**DR LEVY:** You raise a good point: We agree that hysteroscopic sterilization belongs in the office setting. However, if a patient has to have endometrial ablation done, is it always advisable to do both at the same time and in the same setting?

Cryoablation is appropriate to the office setting: The 5-mm device requires less dilation than other devices, and the process uses freezing rather than heat.
and does not use pressure. Because cryoablation does not cause scarring, I perform that procedure first and schedule hysteroscopic sterilization weeks later. After cryoablation, the cavity is very easy to work with. I have seen 1 publication from Great Britain describe ThermaChoice in the office setting using a paracervical block; however, I would be concerned about the amount of pressure in the uterus applied for the required duration of time with this level of pain relief.

DR GREENBERG: That study may reveal cultural differences in how people perceive and acknowledge their pain. I studied postpartum pain and suture materials in the United States and compared those findings to that of a British trial. We concluded that, in terms of pain scores associated with childbirth, British and American women were different.

DR LEVY: Perhaps when we read the international literature, extrapolation of all findings to our patients may not be appropriate.

DR GREENBERG: I agree: it’s my responsibility to make sure that my patients are not traumatized and do not experience pain associated with a procedure that I have told them will be comfortable.

DR LEVY: Our job is to be an advocate for our patients and to recommend procedures that we believe are in our patients’ best interests. In this context, I think that moving hysteroscopic sterilization into the office environment is great for our patients.

DR DOBBINS: It certainly would be attractive to do endometrial ablation after the hysteroscopic sterilization procedure, but the pain associated with endometrial ablation has to be a significant factor.

If a patient uses hormonal contraception, I perform the procedure whenever she is not bleeding.

Timing of the hysteroscopic procedure and use of hormonal agents

DR GREENBERG: In terms of patient selection, we also have to consider the patient’s cycle. It’s difficult to place the device during the late luteal phase, for example.

DR DOBBINS: We use medroxyprogesterone (Depo-Provera®) for patients in whom visualization is difficult.

DR GREENBERG: We offer our patients 2 options: (1) use their current birth control progestin or (2) begin using medroxyprogesterone acetate, 10 mg, on the first day of their period until their appointment. The procedure is then easy to perform, even very late in the cycle.

Scheduling and staffing issues for in-office hysteroscopic sterilization

DR LEVY: How do you schedule the procedures? Do you set aside a specific day or do you perform them throughout the week?

DR DOBBINS: We fit the procedure into our schedules according to patient needs, as we do for any office procedure. The procedure takes about a half hour; the patient is in the office for 1 hour. Typically, we do the procedure early in the morning or at noon when I generally don’t have scheduled office visits.
Protocols for in-office hysteroscopic sterilization: A ROUNDTABLE DISCUSSION

A NURSE’S PROCEDURE PROTOCOL
Over the years that I have assisted Dr Levy, I have assembled a list (SEE TABLE) of necessary equipment and other supplies that may be useful. The Essure® device manufacturer (Conceptus Inc, San Carlos, Calif) provides a basic list, but we have added to it. I still review my list and the procedure protocol before every procedure.

From my perspective, a key issue is to be knowledgeable enough about the procedure to assist effectively. We had both off-site and in-office training in the procedure, which helped me become comfortable with subtleties, such as positioning of the tubes. This educational framework was also important because I answer many patient questions and discuss details about the procedure, scheduling, and follow-up.

At a preprocedure visit, I verify insurance coverage, have the patient sign the consent form, and give her pre- and postprocedure prescriptions for meperidine (Demerol #4), 100 mg; diazepam (Valium #1), 10 mg; and hydroxyzine (Vistaril #2), 25 mg. I tell her to take these medications 1½ hour before her procedure appointment. I also give her a handout and checklist for the procedure and review materials with her.

Before the procedure, I administer ketorolac, 60 mg IM (before she empties her bladder, so it begins to absorb). I collect a sample for a pregnancy test. If she is anxious or requires additional pain medication, I have on hand hydroxyzine, 25 mg IM.

Postprocedure, I complete the patient ID card, attach the sticker from the device to identify the lot numbers, and add the physician’s name as location.

—KAY PETERS, RN

Equipment sterilization: Tips to prolong the life of hysteroscopes

DR LEVY: How do you sterilize your equipment? Do you use a gas sterilizer or do you soak the scope?

DR DOBBINS: We’ve had equipment ruined by incorrect sterilization—such as equipment being autoclaved instead of being cold-sterilized. We now have strict sterilization procedures.

DR LEVY: Some new scopes can be sterilized by various methods.

DR GREENBERG: The instructions for most hysteroscopes say “autoclavable” but they don’t specify “gas.” Steam autoclaving can ruin equipment. Glutaraldehyde (Cidex™) is an option, but it is quite caustic and may reduce the life of a scope.

DR LEVY: Until recently, I only soaked my scopes and never had any trouble. But I agree: you have to have someone who knows how to do it and cares enough to perpetuate your equipment.

DR ZIMMERMAN: We autoclave all our equipment. My office is on the same campus as our hospital so everything goes through central processing.

Preparing for the procedure: Practical tips for clinicians

DR DOBBINS: It’s also important to consider having redundant equipment in case of malfunction. It’s embarrassing for a patient to show up for an appointment, and the scope doesn’t work.
DR LEVY: When we started, we had an equipment list that contained everything we could possibly need and followed it (SEE TABLE).

DR DOBBINS: We heat a 3-liter bag in the microwave for 4 minutes on high power. Of course, we shake the bag to avoid the baby bottle effect.

DR ZIMMERMAN: At first we used warm fluid, but I soon switched to room-temperature fluid. One note: With room-temperature fluid, when you clear the air out of the scope, be careful where you point it!

To me, an important piece of equipment is a 3-liter pressure bag for saline. Pressure provides great distension and makes the procedure easier. I use a Gimpelson cervical-sealing tenaculum in cases with distension problems.

DR GREENBERG: A grasper is necessary in case you deploy the device incorrectly and need to remove it.

DR ZIMMERMAN: The grasper also is great for removing fluff that breaks loose and obscures the tubal ostia.

DR LEVY: As a caveat to the use of dilators, you want to dilate only the os; if you go into the cavity, you’ll likely lift up a bit of endometrium and be unable to see. Warmed saline is recommended by the manufacturer to prevent tubal spasm.

### Performing the procedure: Practical pearls

DR LEVY: Let’s talk about each step of the procedure—what happens when a patient walks in the front door of your office?

DR DOBBINS: The patient talks to the nurse and signs the consent form. The nurse administers ketorolac and performs a pregnancy test. The nurse leaves to set up another room for the procedure. While the nurse is doing this, I discuss the procedure with the patient, answer her questions, make sure she understands what will happen, and chat for a few minutes. This helps the patient relax and ensures that enough time has elapsed for ketorolac to be effective. After 20 minutes, the patient is moved to the procedure room and the procedure is performed.

DR LEVY: When the patient is on the table, are you sterile or not sterile?

DR GREENBERG: I set up my own tray and scope. Instead of a Mayo Stand, I use the top of the hystero-

### TABLE

<table>
<thead>
<tr>
<th>Equipment List</th>
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<tbody>
<tr>
<td><strong>Table Drawer/Mayo Stand</strong></td>
</tr>
<tr>
<td>1. Two (2) bags saline (3000 cc) warmed overnight</td>
</tr>
<tr>
<td>2. Open-sided speculum (sterile)</td>
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<tr>
<td>3. PC Block – 1/2 and 1/2 bupivacaine and lidocaine (plain) in 10-cc syringe with needle extender and #25 needle. Leave bupivacaine and lidocaine bottles with #18 needle in drawer as physician will draw up a second syringe.</td>
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<tr>
<td>4. Sterile tenaculum</td>
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<tr>
<td><strong>Supply Baskets</strong></td>
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<tr>
<td>1. PC Block supplies (lidocaine, bupivacaine, control syringe, needle and extender)</td>
</tr>
<tr>
<td>2. Cysto tubing</td>
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<tr>
<td>3. Suction tubing</td>
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<tr>
<td>4. Denniston dilators</td>
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<tr>
<td>5. Hand towels- nonsterile</td>
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<tr>
<td>6. Sterile towels</td>
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<tr>
<td>7. Sterile scissors</td>
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<tr>
<td>8. Hemostat (2)</td>
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<tr>
<td>9. Sterile gloves (sizes 6 and 7½)</td>
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<tr>
<td>10. Under-buttock drape</td>
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<tr>
<td>11. Chux</td>
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<tr>
<td>12. Ketorolac and injection supplies (needle, syringe, alcohol wipes)</td>
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<tr>
<td>13. Ring forceps for tenaculum site, in case of bleeding</td>
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<tr>
<td>14. Scopettes</td>
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<tr>
<td>15. Grasper</td>
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<tr>
<td>16. Scope</td>
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<tr>
<td>17. Sheath</td>
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<tr>
<td>18. Pressure bag (optional)</td>
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<tr>
<td><strong>Bucket</strong></td>
</tr>
<tr>
<td>Suction tubing and under-buttock drape should hang down into bucket at foot of exam table.</td>
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</tbody>
</table>

scopic cart. I put my gown over it as a sterile table cover after setup of the table. The nurse does the tubing. The patient sits on the table. I place the heels of the stirrups wider than normal.

After the patient is positioned, I put on the gown, not for sterility, but because of the back-spraying water.
THE ESSURE HYSTEROSCOPIC STERILIZATION PROCEDURE

The Essure system is composed of a micro-insert, a disposable delivery system, and a disposable introducer. The delivery system consists of a delivery wire, a release catheter, a delivery catheter, and an ergonomic handle that allows for one-handed placement and deployment of the device. It also retracts the outer delivery catheter and allows withdrawal of the inner release catheter, which fully deploys the micro-insert. Steps are as follows:

- The uterus is distended with warm saline.
- Both tubal ostia are identified and assessed hysteroscopically.
- The delivery catheter with micro-insert is inserted hysteroscopically into the proximal section of the tubal lumen.
- When the device is correctly placed, the outer delivery catheter is withdrawn to expose the device.
- When the release catheter is activated via the ergonomic handle, the micro-insert expands.
- The delivery wire is separated from the micro-insert by rotating the handle.
- Once in place, the device results in tissue growth around and in the micro-insert, thus blocking the fallopian tube.

I regard this as a clean, not a sterile, procedure

I put on sterile gloves then. I introduce the open-sided speculum, apply a povidone iodine (Betadine®) prep, and then do the paracervical immediately. While that sets, I hook up my tubing.

DR ZIMMERMAN: After a negative pregnancy test, the patient goes into the procedure room and gets a ketorolac injection.

I do these as “clean” procedures but use leggings and a sterile under-buttocks pouch. I wash her cervix and vagina with povidone iodine and place the paracervical block using nonsterile exam gloves. Once the block is in, I wait for 10 minutes, then gown and glove. I wear a gown to protect my clothing and do not wear a mask.

We use a camera drape: Since we are placing foreign bodies, the operative channel must be kept sterile. I attach the draped camera and sterile light cord to the hysteroscope. I drape the patient and reprep the vagina.

I introduce a sterile open-sided speculum, attach the fluid in the pressure bag to the continuous-flow sheath. With a sterile tenaculum on the anterior cervical lip, I place the scope through the nondilated os. Once the tubal ostia are visualized, we open the devices and do the procedure. I place the Essure introducer into the instrument channel before I start the hysteroscopy. I turn off the flow before I remove the Essure introducer and do not turn it on again until the operating channel has a device inside it. I turn my inflow off again to change devices. I leave the Essure introducer in place during the procedure. You need to be aware not to turn off the stopcock on that channel or you can cut the sheath in half.

DR GREENBERG: We also use a camera drape, not so much for sterility but because back-spraying water occasionally gets between the camera and the lens and distorts the picture.

DR LEVY: I regard this as a clean, not a sterile, procedure. When we set up the room, we place a sterile blue towel—along with other sterile equipment—on a Mayo Stand. I put the towel over the equipment so the room looks less clinical when the patient enters. When I put on my sterile gloves, I flip the towel back over on the Mayo Stand.

My nurse doesn’t put on her sterile gloves until I have placed the scope and know that I can access both tubes. She opens the device containers and then puts on sterile gloves. Until that point, she is not sterile; we are careful to keep items—such as the end of the tubing—sterile. Certainly, the scope is sterile and our devices need to be maintained in a sterile environment.

I don’t scrub the vulva and vagina. I don’t put sterile drapes on the legs. I don’t gown or mask; I wear my white coat. I use an under-buttock drape with a pouch to collect fluid and I put a Chux pad underneath the drape to catch fluid. I also put a Chux pad on my lap to keep my clothes dry.
In 20 years of doing office hysteroscopy as a clean procedure, I have not had a patient develop an infection.

Once I see the ostia and am set up to place each device, I turn off the inflow with the outflow already turned on, so that, as I remove the introducer, I won’t get splashed. When the device is in and the introducer removed, I turn the inflow back on. I preload the operating channel with the introducer prior to inserting the hysteroscope through the cervical os.

**DR DOBBINS:** I place the tenaculum and if the patient has no pain, I feel that it’s ok to proceed. In most cases, I don’t open the dilators, I want to try to insert the scope with hydrodilation whenever possible.

**DR GREENBERG:** I do not routinely dilate patients. I dilate only if there is stenosis or if I am uncertain as to the direction of the canal.

**DR LEVY:** I don’t use the Denniston tapered dilator (Ipas, Chapel Hill, NC) as a dilator as much as a way finder. I have it open and sterile on the Mayo Stand for each procedure in case I need it.

**DR GREENBERG:** Also, I like to photograph and document how many coils are visible. I produce 2 sets of photos: 1 for myself and 1 for my patient.

### Follow up HSG procedure

**DR LEVY:** Do you perform the HSG procedure personally, or do you have your radiologists do it? How do you schedule it?

**DR GREENBERG:** I do the procedure. We worked with our radiology department to set up procedures for scheduling; we schedule the HSG the day the patient has the sterilization procedure. Since the HSG appointment is scheduled in radiology, I get a reminder. This provides some additional safeguards so that, if a patient doesn’t keep her appointment, we know to follow up.

**DR LEVY:** We ask the patient to call us to schedule an appointment, but we also keep it in a computer reminder file.

**DR DOBBINS:** Our nurses are very excited about this procedure, which has helped to make this successful in the office. They follow up with the patients, initially to make sure that the patient is fine after the procedure and later to schedule the HSG.

**DR ZIMMERMAN:** I did all of the HSGs initially, but after about 50, I stopped. They are now done by either our invasive radiologist or one of our specially trained primary-care physicians interested in gynecology. I have worked with everyone who does the HSGs to be sure we all are on the same page. We call patients at 3 months to make an appointment for the next week, assuming they will not be menstruating.

**DR LEVY:** Those who do not perform HSGs must be sure that the radiologists understand the purpose of the HSG and know that the tubes are permanently blocked. Otherwise, they may exert significant pressure to remove the blockage caused by the device and actually reopen the tubes. This pressure also causes significant discomfort for the patient.

### Radiologists must understand the purpose of the HSG

**DR GREENBERG:** That is an excellent point: we can’t expect our radiology colleagues to be aware of every new procedure. It is certainly a courtesy to them and a safety check for patients to make sure that the radiology department is aware of the purpose of the HSG.

**DR LEVY:** I prefer to do the procedure myself. I use a sonohysterogram type balloon catheter that is comfortable for the patient. Although it’s a nuisance to go to the hospital, I want to know that the devices are in the right location and that the tubes are really occluded. I find it is a nice conclusion for the patient to have her gynecologist with her during the HSG.

**DR DOBBINS:** I agree: It’s good closure to know that you did the procedure correctly and a good way to counsel and follow up with the patient.

### Practice-management considerations

**DR LEVY:** I think we agree that, in terms of practice management, the cost for us to go to a hospital is high, considering the time it takes and the reimbursement for that time. When we have an opportunity to move an appropriate procedure into the office setting, it makes absolute financial sense.
Protocols for in-office hysteroscopic sterilization: A ROUNDTABLE DISCUSSION

DR DOBBINS: Yes, it is a highly marketable procedure with the potential to generate significantly more revenues. In our area, we are the only practice that offers it, so it was an excellent financial decision for us.

DR GREENBERG: Considering the savings of this office-based procedure, it is no longer cost-effective to do laparoscopic tubal ligations that take up an OR and an anesthesiologist. Fifteen years ago, people were routinely doing LEEP's in the OR. In the same way, it’s likely to become an anachronism to perform female sterilization in the OR in 5 to 10 years.

DR ZIMMERMAN: Offering the procedure from our offices also gives us greater flexibility, which is especially important if you have to reschedule an appointment. The potential pitfalls of laparoscopy are well-known and being able to offer permanent sterilization without trocar insertion is a great thing. The Essure procedure makes female sterilization less invasive than male sterilization.

REFERENCES


