



# CIS Self-Study Lesson Plan

Lesson No. CIS 256 (Instrument Continuing Education - ICE)

Sponsored by:



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# Obstetrics and Gynecology Instrumentation

## LEARNING OBJECTIVES

1. Define the terms Obstetrics (OB) and Gynecology (GYN), and explain the difference between the two specialties
2. Review common procedures performed in the OB and GYN specialties and review some of the instrumentation used in these procedures
3. Identify challenges associated with instrumentation used in OB and GYN procedures

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## OBJECTIVE 1: DEFINE THE TERMS OBSTETRICS (OB) AND GYNECOLOGY (GYN) AND EXPLAIN THE DIFFERENCE BETWEEN THE TWO SPECIALITIES

Prior to the 17th Century, obstetrics (OB) had been the long-time province of female midwives; this lasted until European physicians began attending to royal and aristocratic families. By the early 19th Century, the U.S. established and recognized this medical discipline and the OB practice has continued to grow and evolve to the specialty it is today.

Gynecology (GYN) as a medical specialty dates back to Greco-Roman civilization, if not earlier. In the mid-19th Century, physicians were able to successfully perform a limited variety of surgical procedures on the ovaries and uterus. American surgeon James Marion Sims and other pioneers of operative gynecology had to combat the prejudice of the public against any exposure or examination of the female anatomy. Two notable advances that finally overcame opposition and made gynecological surgery available were the use of anesthesia and antiseptic methods.

Today, many people believe the two specialties, OB and GYN, are combined, due to the fact that many physicians practice both specialty. These specialties are, however, quite different.

OB is the branch of medicine that deals with all issues related to pregnancies and child birth, up until six weeks

after delivery. GYN, on the other hand, is a specialty that treats all disorders related to female anatomy, not including pregnancy. The treatment of infertility and contraception are part of the GYN specialty.

## OBJECTIVE 2: REVIEW COMMON PROCEDURES PERFORMED IN THE OB AND GYN SPECIALITIES AND REVIEW SOME OF THE INSTRUMENTATION USED IN THESE PROCEDURES

Like all surgical specialties, there are commonly-performed procedures, and instrument technicians should be aware of these procedures to help gain a better understanding of the instruments that may be used. The following are commonly-performed surgical procedures for the OB and GYN specialties:

**LASER SURGERY:** Loop Electrosurgical Excision Procedure (LEEP), used to treat cancer cells, and Endometrial Ablation, which involves scarring or removing of the inner lining of the uterus to treat abnormal bleeding, are two of the most common laser surgeries of the OB and GYN specialties. Instruments used for these procedures are ebonized (coated with a non-conductive material) to avoid electrical shock to the patient and/or surgeon during the procedure. These instruments should be treated carefully since the coating can easily chip or flake. Instrumentation

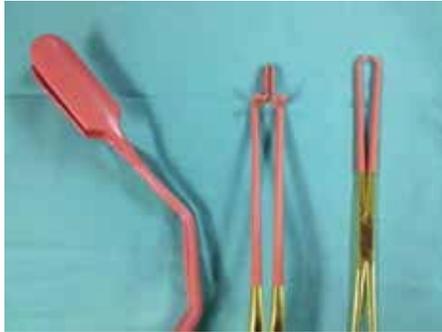


Figure 1: Leep Instruments



Figure 2: Ebonized Weighted Speculum



Figure 3: Appel Needle Holder



Figure 4: Babcock Forceps



Figure 5: Lap J Hook



Figure 6: Jorgenson Scissors



Figure 7: Heaney Needle Holder



Figure 8: Ballentine Forceps



Figure 9: Simpson Forceps



Figure 10: DeLee Retractor



Figure 11: Luikart Forceps



specialists should carefully follow manufacturer's instructions for use (IFU) to avoid damage during cleaning and reprocessing. Figure 1 shows instruments coated for use during LEEP procedures. Figure 2 shows a speculum that has been ebonized.

**LAPAROSCOPIC SURGERY:** Minimally invasive procedures have become the treatment of choice for many GYN conditions. Common procedures include hysteroscopy (visual examination of the uterus using a rigid or flexible scope to treat a number of conditions, such as adhesions and polyps); hysterectomy (removal of the uterus); and pelviscopy (visual examination of the pelvic cavity using a scope for diagnoses or treatment of female reproductive organs). Laparoscopic surgery is often used to treat ectopic pregnancies and tubal ligation (cutting, burning, tying or applying a clip on the fallopian tubes to prevent future pregnancies). Laparoscopic instruments commonly used for minimally invasive procedures include needle holders and various types of forceps. Figure 3 shows an Appel needle holder, Figure 4 shows a laparoscopic Babcock and Figure 5 shows a j hook used for cautery.

### GENERAL GYN SURGICAL

**PROCEDURES:** These procedures include hysterectomy (removal or the uterus, either abdominally or vaginally); dilation and curettage (D&C), which involves widening the cervix to permit evacuation of the contents or scraping of the uterine lining; oophorectomy (surgical removal of the ovaries); and salpingectomy (surgical removal of part or all of the fallopian tube). While many instruments used for general surgery are used for these procedures, there are also specialty instruments designed for use GYN procedures. Because the uterus is a tough muscle, these instruments may

be heavier than many of the general surgery instruments. Some of the more common specialty instruments used include General GYN (vaginal speculums, tenaculums, scissors, biopsy punches, Heaney needle holders, and Heaney or Ballentine forceps). Figure 6 shows a Jorgenson scissors, Figure 7 shows a Heaney needle holder and Figure 8 shows a Ballentine forceps.

**OB PROCEDURES:** OB procedures include Caesarean section (C-section), the surgical procedure to remove the baby via an opening in the mother's abdomen; episiotomy (surgical incision of the perineum and the posterior vaginal wall during second stage of labor to quickly enlarge the opening for the baby to pass through); and vaginal delivery (the birth of a baby through the vagina). Instruments used for OB surgeries may also be the same instruments used for general surgical procedures; however, like GYN surgeries, there are instruments designed specifically for OB procedures. Some of these instruments include Simpson delivery forceps, DeLee retractors and Luikart forceps; these instruments are used to assist with the delivery of the baby. Figure 9 shows a Simpson forceps, Figure 10 shows a DeLee retractor and Figure 11 shows a Luikart forceps.

### OBJECTIVE 3: IDENTIFY THE CHALLENGES ASSOCIATED WITH INSTRUMENTATION USED IN OB AND GYN PROCEDURES

Due to the design of some of the instruments and the types of surgeries in which they are used, these instruments may pose processing challenges for instrument technicians.

**LASER INSTRUMENTS:** Laser instruments must be carefully handled to avoid damaging their coating. Instrumentation specialists must

carefully follow the manufacturer's IFU for cleaning and sterilization. Ebonized instruments may become damaged if cleaned mechanically, especially if they are cleaned with other instruments that can scratch the instruments' surface during the cleaning process. Ebonized instruments must be carefully inspected for cleanliness because the surface is dark in color and can hide the presence of blood and other debris. Color-coated instruments also may need to be processed separately to avoid damage, and it is important to carefully inspect the coated surfaces for damage after cleaning. Instruments with a cracked coating or flaking of the ebonized covering must be removed from service until the coating is replaced; instruments with a damaged coating can cause harm to patients and users.

### LAPAROSCOPIC INSTRUMENTS:

Laparoscopic instruments pose challenges in all phases of the processing cycle. Many facilities have multiple generations of laparoscopic instrumentation in their sets, and each generation has specific cleaning instructions, so careful attention to the IFU during processing is essential. These instruments require careful manual cleaning before any type of mechanical processing can occur. If mechanical cleaning is allowed, ensure these instruments are placed in the mechanical cleaning equipment in such a way that keeps them from bumping against each other and potentially damaging the insulation. During the inspection process, carefully check for cleanliness, especially in the distal, handle and insulated areas. Assemble each instrument and check for proper function. Each insulated instrument must have its insulation tested with an approved testing apparatus. Disassemble each instrument for sterilization, unless approved by the manufacturer to be sterilized in its



assembled state. When assembling sets containing insulated instruments, care should be taken to place the insulated instruments in the set in a manner that prevents them from bumping into other instruments and becoming damaged. Some of these instruments have special sterilization cycles, so checking the manufacturer's IFU for sterilization instructions is critical.

**GENERAL GYN INSTRUMENTS:** Most of these instruments may be mechanically cleaned after manual preparation. Disassemble instruments with multiple parts prior to cleaning. Special attention must be taken when processing plated weighted speculums and some uterine sounds. Plated speculums should not be mechanically cleaned with stainless steel instruments, especially in an ultrasonic cleaner, because doing so can cause the plating on the speculum to flake. Some uterine sounds have special cleaning instructions because they may discolor when processed with other instruments. During inspection, be sure each instrument is clean and functioning properly. Careful inspection of jaw and box lock areas is required. Scissors and other sharps should be tested according to the manufacturer's IFU. Check uterine sounds to ensure the measurement markings are still visible (if the markings should be present on the instrument shaft). Sterilize according to the manufacturer's IFU.

**OB INSTRUMENTS:** Challenges for these instruments arise when the surgical case is completed. Frequent delays occur in delivering the instrumentation to Central Service (CS) after use. Procedures performed in the OB specialty are typically quite bloody, so instrument cleaning can be a challenge if blood and bodily fluids are allowed to dry. Meticulous manual preparation is

needed before mechanical cleaning. Each instrument must be carefully checked for cleanliness. Different patterns of multiple-part delivery forceps look very similar, so each forceps should be carefully matched, assembled and tested for function. OB forceps should be disassembled for sterilization, unless approved by the manufacturer to sterilize the forceps assembled. Scissors in the specialty become dull very quickly and should be tested each time they are processed. If processing circumcision sets, be sure the Gomco clamp parts fit and function appropriately, and that the opening on the Mogen clamps is measured per the manufacturer's IFU.

## CONCLUSION

As surgical procedures in the specialties of obstetrics and gynecology continue to grow and evolve, so will the surgical instrumentation used for these specialties. It is imperative to always follow the manufacturer's Instructions for Use (IFU) to ensure that instruments are reprocessed safely and effectively. Although many of the instruments used in OB and GYN surgical procedures are very familiar to instrument technicians, there are specialty instruments with special cleaning and assembly needs. Proper training and adherence to the manufacturer's instructions will help the instrument technician successfully process these instruments.

## RESOURCES

International Association of Healthcare Central Service Materiel Management. 2007. Central Service Technical Manual, Seventh Edition.

Association of Surgical Technologists Inc. 2007. Surgical Technology for the Surgical Technologist, Third Edition.

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# CIS Self-Study Lesson Plan Quiz - Obstetrics and Gynecology Instrumentation

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## OBJECTIVE 1

1. Gynecology is the branch of medicine that is responsible for all issues related to pregnancy.
  - a. True
  - b. False

## OBJECTIVE 2

2. Instruments with an ebonized coating are used during laser procedures.
  - a. True
  - b. False
3. Hysteroscopy is a frequently performed \_\_\_\_\_ surgery.
  - a. Laser
  - b. Loop Electrosurgical Excision Procedure
  - c. Obstetric
  - d. Laparoscopic
4. An Appel needle holder is used during:
  - a. C-sections
  - b. Laser surgeries
  - c. Laparoscopic surgeries
  - d. Loop Electrosurgical Excision Procedures
5. Jorgenson scissors are commonly used in:
  - a. General gynecological surgeries
  - b. Laser surgeries
  - c. Obstetric surgeries
  - d. All the above
6. Delee retractors are used during:
  - a. Loop Electrosurgical Excision Procedures
  - b. General gynecological surgeries
  - c. Obstetric surgeries
  - d. Hysteroscopies

7. Speculums used for laser surgery are coated with a non-conductive material.
  - a. True
  - b. False
8. Heaney needle holders are frequently used during laparoscopic surgery.
  - a. True
  - b. False

## OBJECTIVE 3

9. Ebonized instruments should always be cleaned in mechanical washers.
  - a. True
  - b. False
10. Different generations of laparoscopic instruments have specific cleaning instructions.
  - a. True
  - b. False
11. All laparoscopic instruments should be sterilized fully assembled.
  - a. True
  - b. False
12. During processing, laparoscopic instruments should be:
  - a. Placed in the mechanical cleaner, so they don't bump against each other
  - b. Manually cleaned before mechanical cleaning.
  - c. Sterilized unassembled
  - d. All the above

13. Plated speculums should not be ultrasonically cleaned next to stainless steel instruments because:
  - a. The measuring marks may be damaged
  - b. The heavy speculum can damage the stainless steel instruments
  - c. The speculum's plating may flake
  - d. All the above
14. Obstetric instruments can be challenging to process because:
  - a. Delivery to the Central Service department can be delayed
  - b. The procedures are usually very bloody
  - c. Different patterns of delivery forceps look similar
  - d. All the above
15. When assembling Mogen clamps, the clamp opening should be measured after each use.
  - a. True
  - b. False

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