

EFFECTIVE PRECEPTOR SERIES

Effective Operating Room Teaching

THE OPERATING ROOM EXPERIENCE FOR THE MEDICAL STUDENT

As Obstetrics and Gynecology educators, the operating room (OR) is an important clinical setting for teaching. Students who commit to being present and active learners in the OR gain insight into OR culture and function, explore the OR environment as a future career element, develop technical skills, and enhance their clinical knowledge. Students who report finding the OR a useful place to learn are able to 1) negotiate the OR environment and the emotional impact of surgery, 2) understand the learning objectives at hand, and 3) be an active member of the care team and learning environment.

However, the OR can be a challenging place for students to learn. Several learning barriers exist, such as concerns about patient safety, the push for greater efficiency, inadequate visualization for the student, separation from the learning during minimally invasive surgery, and the care team's attitude towards students. In addition, the educational focus of the OR is often the resident or fellow's technical performance.

Educators in the OR have several opportunities to make the experience more positive, beneficial, and ultimately fun for the student.

Attributes Of An Excellent Operating Room Teacher

Many studies have attempted to identify what attributes students value in an OR teacher. General themes that emerge include:

- Setting expectations for the student
- Demonstrating sensitivity to learning needs
- Allowing for active participation
- Teaching with enthusiasm
- Remaining calm and courteous

- Giving feedback

Maximizing the student experience in the OR can be easy and fun. Do not forget how important your attitude is during teaching, especially in the OR. It is essential to model professionalism, teamwork and respect in the OR. In addition, decreasing the stress of the OR environment by remaining calm and being courteous to all members of the care team can improve learning. You can set the tone for the learning environment for the OR; encourage residents and fellows, and all members of the care team, to be courteous and have a teaching role. Acknowledging student learners and making them feel part of the team can go a long way to improving the experience for the student.

Familiarize yourself with student learning objectives. Formal OR specific learning objectives may be available for the clerkship or course in which the student is enrolled. In addition, as the educator you can create your own learning objectives for your student. You should also familiarize yourself with the student's level of experience. For example, will this be one of the first experiences in the OR, or is this student comfortable with the OR environment? Is the student familiar with scrubbing and sterile technique? Has someone reviewed instruments and knot tying with the student? If you have time prior to the OR, it can be helpful to provide the student with a checklist of anatomy to know for the case, or to alert them to resources they could consult such as books, videos, or online materials regarding the procedure. Reviewing the patient's pre-operative work-up including the history, pertinent physical exam, laboratory studies, and radiology images before the case can be helpful for students, and makes them feel valued.

Reviewing and communicating the student's learning objectives and his/her role in the OR before the case is very important. What does the student want to get out of the case? What should they expect from the case? Defining clear roles for each member of your OR team can increase efficiency as well as decrease frustration and disappointment. Introducing the student to all members of the OR team, including the circulating/scrub nurses, residents/fellows, and anesthesiologists, sends a strong message that you recognize the student as part of the team.

Talk and teach throughout the case. However, focus on pertinent questions that are appropriate for the level of your student. Being familiar with the student's prior experience and learning objectives can help focus this intra-operative teaching. Recruiting other teachers during the case is another effective approach to teaching the student. For example, you can have an upper-level learner, such as a resident, describe what they are doing or why they are doing it. They could describe potential complications or points of caution to the student. This utilization of upper level learners as teachers is an educational multiplier. It allows you to do multilevel teaching, while still addressing each learner at their level. In addition, scrub nurses can help with surgical instrument recognition during down time in a case. Throughout the case, be sure that the student is positioned so they can see the operative field at all times. If appropriate, consider placing the patient in low lithotomy during laparotomy cases to allow maximum positioning of all team members.

There are many key points in the case which could promote the student's active participation. For example, the student can easily help with position-

ing, prepping and draping. Having an upper level learner (senior student, acting intern, intern, resident, fellow) take a student through these steps can increase teaching confidence for the upper level learner and will involve the student early on in the case so they feel invested in the team. Preoperative examination of a patient can be an important learning opportunity, however be sensitive to this and the need for consent or any policies your institution may have with regards to the examination under anesthesia. Students can take part in Foley catheter insertion and simple suturing. If there is down time during a case, the student can practice suturing or knot tying on a surgical towel. The student can try handling the laparoscope, cystoscope, or hysteroscope. If performing a hysterectomy, the student may be instructed on how to open the uterus to examine the pathologic findings. This can be done on a back table, and provides the student the opportunity to handle surgical instruments. Additionally, the student can then suture the uterus to reclose it. Reviewing the anatomy of the surgically removed specimens also provides an opportunity to teach normal and pathologic anatomy and to assess the student's fund of knowledge. If appropriate, the student can take specimens to pathology and review them with a pathologist. After the case, the student should participate in patient transfer, postoperative note and order writing, and can accompany you while you speak to the family.

Communicating with your student, including debriefing and providing feedback, after the case is another prime teaching moment. At this time you can review objectives met, those that need work, and points for future learning.

MODELS FOR USING THE ABOVE TEACHING TIPS

The BID Model

Roberts and colleagues created a model for teaching in the OR that followed the example of the 1-minute preceptor. This BID (briefing, intraoperative teaching, debriefing) model is quick and easy to remember, as well as easy to enact. By following this model, both

the educator and student are focused on similar objectives for the case, and intraoperative teaching is guided. In addition, the learning that occurs during the case is solidified during the debriefing and the student leaves the OR with feedback and rules to guide future OR experiences.

1. **Briefing:** This is a basic needs assessment that can happen at the scrub sink. Start the conversation with asking the student about past experience and goals for the case. In this way, the educator can assess the needs of the student and have the student assess their own needs, jointly establishing learning objectives for the case.
2. **Intraoperative teaching:** Teaching that occurs during the case should be focused on the learning objectives set during the briefing session.
3. **Debriefing:** This consists of four elements: reflection, reinforcement, correction, and rules. The student should be asked to reflect on their performance and learning objectives. The educator should then reinforce what the student did well during the case, and correct any mistakes that were made. Finally, the student should come away from the encounter with a rule to guide future OR experiences.

The COACH Model

The COACH model is utilized when teaching psychomotor skills in the OR.⁷ This model uses 5 questions that the educator can continually ask themselves to be sure they are on point with teaching the student.

1. **Am I providing a Clear performance model?** This is part of setting expectations for the student. The educator should clearly demonstrate what they expect the student to do in the OR. Remember the importance of visualization.
2. **Am I promoting Openness to learning?** Here the educator must assess their own mood prior to the learning experience and OR. Remaining calm and courteous, and teaching with enthusiasm allow others in the OR to learn without

outside stressors.

3. **Am I Assessing performance?** As an OR educator, be sure that you are thinking about the performance of the students throughout the case.
4. **Am I Communicating effectively?** Modeling in the OR is important, but verbal communication regarding the procedure, points of caution, and decision making are critical for educational success. If communicating about skills, concrete feedback and direction is most effective.
5. **How do I provide Help and follow-up?** Giving immediate formative feedback regarding performance is of utmost importance in the OR. Thinking about ways to improve outside of the OR and suggesting tips for improvement can be beneficial to the student. Be sure to familiarize yourself with simulation models that may be available to students, or offer tips for how a student may practice skills on their own.

Improving Your Skills As An Effective Operating Room Teacher

Working on teaching skills is an important way to improve OR teaching and learning. Simulation and role play are excellent ways to improve effective communication and feedback. Review evaluations of your teaching performance to better understand what students appreciate about your teaching, as well as points for improvement.

TIPS ON MAXIMIZING THE STUDENT OR EXPERIENCE

- Familiarize yourself with clerkship objectives
- Have learning objectives in mind that are important for student to know
- Review the case prior to the OR with the student
- Evaluate the student's level of experience
- Define the role of student during the case
- Set goals for the case
- Be sure student can see operative field at all times
- Talk and teach throughout the case, or have an upper-level learner

- describe what they are doing to a lower level learner
- Ask only pertinent questions
- Get the student involved! Have them take part in:
 - Positioning
 - Prepping
 - Draping
 - Examination of the patient under anesthesia
 - Foley catheter insertion
 - Simple suturing
 - Handling the laparoscope, cystoscope, hysteroscope
 - Practicing skills on operative towel or surgically removed specimen, when appropriate
 - Going to pathology with the specimen
 - Patient transfer

- Writing post-operative orders, notes
- Joining you while you talk to the family
- Recruit other educators in the OR
- Debrief

Conclusion

Making your OR a positive environment for student learning is rewarding and fun. Remember that a positive attitude and welcoming demeanor can set the tone for the OR. Using some simple models, like BID or COACH, for setting objectives and achieving them while in the OR can enhance the experience. And finally, active learning can be easy to incorporate into your OR, and is very exciting and fun for the student learner.

References: Lyon PM. Making the most of learning in the operating theatre: student strategies and curricular initiatives. Med Educ 2003;37:680-8

Cox SS, Swanson MS. Identification of teaching excellence in operating room and clinic settings. Am J Surg 2002;183:251-5.

Iwaszkiewicz M1, Darosa DA, Risucci DA. Efforts to enhance operating room teaching. J Surg Educ. 2008;65:436-40.

Ravindra P1, Fitzgerald J1E, Bhangu A, Maxwell-Armstrong CA. Quantifying factors influencing operating theater teaching, participation, and learning opportunities for medical students in surgery. J Surg Educ. 2013;70:495-501.

Kenton K. How to teach and evaluate learners in the operating room. Obstet Gynecol Clin North Am 2006;33:325-32.

Roberts NK, Williams RG, Kim Mj, Dunnington GL. The briefing, intraoperative teaching, debriefing model for teaching in the operating room. J Am Coll Surg. 2009;208:299-303.

Adapted by Dr. Debra DaRosa from training materials developed by Jbpiego.

BID model from Roberts:

Table 2. Briefing, Intraoperative Teaching, Debriefing Model Card

Stage	Step	Script
Briefing	Set learning objectives for encounter.	“What would you like to focus on?” OR “Today I want you to focus on”
Intraoperative teaching	Teaching during the encounter	Focused on stated objectives
Debriefing	Reflection	“How do you think you did? Why?”
	Rules	“What did you learn for next time?”
	Reinforcement	“You did well at”
	Correction	“Next time, do this”



Original Author: B. Star Hampton, MD, Women & Infants Hospital/Brown University; David A. Forstein, DO, Greenville Hospital System

The Effective Preceptor Series is a project of the Association of Professors of Gynecology and Obstetrics (APGO) Undergraduate Medical Education Committee (UMEC):

Nancy A. Hueppchen, MD, MSc, Chair
Johns Hopkins University School of Medicine

Jodi F. Abbott, MD
Boston University School of Medicine

Samantha D. Buery-Joyner, MD
VCU School of Medicine, Inova Campus

Alice W. Chuang, MD
University of North Carolina-Chapel Hill

Amie J. Cullimore, MD, MSc, BEd
McMaster University

John L. Dalrymple, MD
University of Texas, Houston

Lorraine Dugoff, MD
University of Pennsylvania

David A. Forstein, DO
Greenville Hospital System

B. Star Hampton, MD
Women & Infants Hospital/Brown University

Joseph M. Kaczmarczyk, DO, MPH
Philadelphia College of Osteopathic Medicine

Sarah M. Page-Ramsey, MD
San Antonio Uniformed Services Health Education Consortium

Archana A. Pradhan, MD, MPH
UMDNJ-Robert Wood Johnson Medical School

Abigail Wolf, MD
Thomas Jefferson University

Effective Operating Room Teaching, #11 in a series, © The Association of Professors of Gynecology and Obstetrics, 4/2014.

The Association of Professors of Gynecology and Obstetrics (APGO) promotes excellence in women’s health care by providing optimal resources and support to educators who inspire, instruct, develop and empower women’s health care providers of tomorrow.

This publication is part of the APGO Effective Preceptor Series – a group of pamphlets intended to educate practitioners and learners about the apprentice system or preceptorship. The quality of learning that occurs in an established relationship between the teacher and the student often meets the challenge of educating physicians in today’s chaotic health care environment. It allows doctors in training to practice as much like doctors as good medical practice will allow, and it provides a setting in which some of the best medical education in our nation takes place.

To learn more about APGO and The Preceptorship Series publications, contact:
Association of Professors of Gynecology and Obstetrics (APGO) • 2130 Priest Bridge Drive, Suite #7 • Crofton, MD 21114
Phone (410) 451-9560 • Fax (410) 451-9568 • www.apgo.org