A commonplace item, one found in almost every household, was partially responsible for the explosion of endoscopy in 1980. The item? A VCR. The significant impact, and the rapid changes that were forthcoming, affected everyone working in the operating room. Several surgeons in various parts of the world were expanding the use of scopes with surgery, but it took substantial proof to make us believers. Interestingly enough, we are now backing away from using the VCR due to legal issues. More and more options for pictorial operative reports are available and will become as standard as the written operative report before too long.

Unlike open procedures, operative endoscopy requires the surgeon to rely more on the team, in a different way. The surgeon’s “eyes” are in someone else’s hands—a new, and somewhat uncomfortable feeling. The surgeon must also depend on the team to set up, operate, and troubleshoot a new array of instrumentation and equipment. This chapter is written from the operating room nurse’s perspective. It is intended to assist the entire team in making endoscopic procedures run more smoothly. Such an approach to surgery requires a committed, competent, and organized team. This chapter covers the endoscopic team and their roles. Education of the team is also addressed, an area that has been overlooked in the past as surgeons were offered numerous courses, but few existed for the other team members. Room set-up, instrumentation, equipment and complications, how to prepare for procedures and potential complications, how to react if complications occur, and how to keep the patient safe are covered from a nursing perspective. Teams must change in order to succeed with endoscopy. Resistance to change may have inhibited progress the past few years.

The Team
Preparation for a Procedure
With the advent of endoscopic surgery came the term endoscopic team. Although staffing situations and team member titles will vary from one institution to another, a few roles are universal. Each operating room suite should have an endoscopy coordinator or team leader. In a large institution where a high volume of endoscopy is performed, this may be a full-time position, while in a smaller institution, several people may share the responsibility of making sure that things are well coordinated. Someone should be specifically responsible for ensuring that all equipment and instruments are in working order at all times. Staff training needs to be systematic and consistent.

When an endoscopic procedure is posted, the availability of staff, video equipment, and instrumentation must be considered. Some of the following questions should be asked. First of all, where does this case fall on the surgery schedule? Is there more than one endoscopy procedure posted for that day, and, if so, is it in the same room? If they are not in the same room, will they possibly overlap? Is there more than one complete set of instruments and video equipment available in case they do need to be going on simultaneously? This is not usually a problem in a large institution but could be in one that is not accustomed to higher volumes of scope cases. If possible, it is best to arrange the schedule to avoid possible conflicts. Endoscopic surgery can be very unpredictable, especially early in the surgeon’s experience. A planned two-hour procedure can easily turn into a four-hour procedure if complications arise. This may affect surgical cases slated to follow. The endoscopic coordinator should be aware of this and plan accordingly.
Circulating Nurse

Ideally, two circulating nurses should be assigned to every advanced endoscopic procedure: one to take care of direct patient care circulating duties, and the other to assist the scrubbed personnel with video equipment, set-up, and supplies. The circulator must be familiar with how to set up and troubleshoot equipment such as video systems, irrigators, and energy sources. Knowledge of the different types of endoscopic instruments, their general use, and location is essential. Surgical endoscopy should be considered a specialty in itself, just as the cardiovascular service has a specialized team of circulators for open heart procedures, the same staffing philosophy should be adopted for endoscopic surgery when possible. Because it is difficult to really learn a surgeon’s routine with sporadic exposure, rotating nurses in and out of endoscopy procedures can create frustration, not only for the nurses, but also for the surgeon working with different staff from day to day.

Scrub Nurse

The scrub nurse/technician role may be filled by an individual employed by the hospital or may be someone employed by a physician or group of physicians. Many surgeons find it beneficial to hire a private scrub because having someone who knows his routine and set-up for every procedure can make things go more smoothly. The same benefit to the surgeon can be obtained by assigning the same personnel to scrub on all scope cases. The scrub nurse should have a thorough knowledge of all instruments and their uses. It is important to know the difference between a grasper and a dissector and what instruments are traumatic versus atraumatic. All instruments should be checked for intact insulation, sharpness of reusables, and ease of opening/closing instrument handles. Of course, the scrub nurse should ensure that all potentially necessary equipment and supplies are readily available. It is also important to be familiar with the different methods of obtaining hemostasis, such as use of monopolar and bipolar cautery, other energy sources, endolops, endoknots, intracorporeal and extracorporeal suturing techniques, and use of endoscopic stapling devices (including the proper trocar sizes used with different sized staplers). If trocar sizes need to be changed, transfer rods must be available. The possibility of converting to an open procedure is always present in endoscopy. It may occur in an emergency situation, and the scrub nurse should know how to quickly set up and pass instruments for the open technique.

Camera Operator

The camera operator is another member unique to the endoscopic team. This role is crucial to the successful and safe completion of an endoscopic procedure. Since the camera operator serves as the eyes for the surgeon and assistant, absolute familiarity with the planned procedure is vital. This individual should be skilled at scrubbing the same procedure. This ensures familiarity with the sequence of events and with what the surgeon feels is important to visualize at different stages of the procedure. It is worth mentioning that the camera operator must have good visual acuity at the distance at which monitors are placed. What is considered a clear image by the camera operator must also be clear to the rest of the team.

The camera operator should be familiar with techniques for obtaining and maintaining a clear image throughout the procedure. Proper white balancing of the camera is essential and must be done correctly each time the camera is turned on. It is important to make sure the scope lenses are free from scratches or smudges, and that the eyepiece and camera are completely dry before connecting them. Rinsing scopes in warm water and using an antifog solution will help decrease fogging when entering the abdominal cavity. When the scope becomes dirty, the best way to clean it is to take it out and wipe it with a wet sponge. When it is not feasible to remove the scope, a quick touch with a side swipe on the liver or uterus will often clear the lens nicely. Do not leave the scope in contact with any tissue for a prolonged period of time, as this could result in a burn. It is best not to touch the bowel at all with the scope. Irrigating the lens from within using the suction/irrigator is also a good way to clear the scope when removal from the abdomen is not an option.

The camera operator should always keep the surgeon’s instruments in the middle of the screen. This helps the surgeon maneuver instruments safely by keeping them and their immediate surroundings in view. The position of the surgeon’s instruments is constantly changing and the camera should follow these changes. The assistant is also maneuvering instruments and should not be forgotten by the camera operator, especially when the surgeon is changing instruments. This is often a good time for the assistant to reposition graspers and it is important that the camera operator facilitate this. The camera operator’s eyes should not leave the abdominal/chest cavity as long as an instrument is still in. The temptation to assist the scrub nurse or look at something else in the room must be avoided. When the surgeon re-enters the abdominal cavity after changing instruments, the camera operator should always make sure the surgeon can see where the instrument is entering.

The camera operator should white balance the camera properly, as this is the basis for a good image with true color. Improper white balancing can adversely affect the image on the monitor. Care should be taken not to get the scope too close to the operative site, as the surgeon requires a clear view of the surrounding area. When zooming in or panning out with the scope, the focus may