

# Training Standards for Physicians Performing Uterine Artery Embolization for Leiomyomata

## Consensus Statement Developed by the Task Force on Uterine Artery Embolization and the Standards Division of the Society of Interventional Radiology—August 2000

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Abbreviation: UAE = uterine artery embolization

UTERINE artery embolization (UAE) is a therapy that offers an alternative to traditional surgical procedures such as myomectomy and hysterectomy for women with symptomatic leiomyomata (fibroids). The clinical experience and the published literature indicate that this is an effective and safe therapy (1–9).

For patients to receive the best possible care before, during, and after the embolization procedure, the Society of Interventional Radiology Task Force on Uterine Fibroid Embolization has developed this consensus statement to define the appropriate qualifications for physicians practicing in this field.

### PHYSICIAN QUALIFICATIONS

To ensure patient safety and a successful outcome, UAE should be performed by physicians trained to properly select and evaluate patients for

treatment, technically skilled to perform the procedure, and capable of periprocedural patient management and follow-up. The skills required are best met by a collaboration of interventional radiologists and gynecologists, each applying their skills to optimize patient care. The Task Force strongly recommends that interventional radiologists develop a cooperative relationship with gynecologists to ensure that patients receive proper preprocedural evaluation and postprocedural monitoring and care.

### REQUISITE BACKGROUND INFORMATION

The Task Force also believes that all physicians performing this procedure should understand basic gynecologic principles regarding fibroids, including symptoms, differential diagnosis, medical management, surgical options, and natural history. In addition, basic understanding of related clinical issues such as ovarian function, fertility, and menopause is important. With this in mind, the Task Force believes that all practitioners who perform this procedure should attend at least 15 hours of continuing medical education addressing uterine embolization and associated gynecologic issues.

### REQUISITE ANGIOGRAPHIC SKILLS

The procedure represents an extension of embolotherapy used to treat postpartum hemorrhage and pelvic tumor embolization. As such, UAE requires similar operator skills for a safe and successful procedure. During the UAE procedure, a percutaneous catheter is introduced into an artery and manipulated under fluoroscopic guidance into the uterine arteries. After arteriographic filming, embolization is undertaken until the fibroid vasculature is occluded.

At each stage, specific angiographic skills are needed and, therefore, all physicians performing UAE must be qualified to perform diagnostic angiography according to the standards of the American College of Radiology. The operating physician must be capable of percutaneous arterial puncture, safe passage of a catheter into the aorta, subselective catheterization from the aorta to the uterine artery, angiographic imaging, embolization with use of standard arteriographic catheters and microcatheters, and the subsequent assessment of the angiographic result. Given the complexity of the procedure, it is the consensus of the Task Force that certain minimum

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training, skills, or experience are necessary for physicians who wish to perform this procedure. There are three pathways to gain the requisite angiographic skills.

## PATHWAYS TO QUALIFICATION

Physicians wishing to perform UAE may qualify by one of the following three pathways. The requirements were reached by a consensus of physicians who are performing this procedure and who are very familiar with the technical skills necessary to ensure a successful procedure. It must be recognized that the qualifications outlined are guidelines and may be changed to meet the individual skill levels of the physicians applying for privileges.

### Fellowship Training

The physician may qualify by completion of an accredited fellowship in vascular and interventional radiology. The candidate should be certified or eligible for a certificate of added qualification in the subspecialty. During the fellowship, the candidate should have completed at least 100 arteriographic procedures, including at least 50 visceral catheterization procedures. In addition, the candidate should have successfully completed at least 25 selective embolization procedures. The director of the fellowship program should confirm the experience outlined.

### Qualification by Experience

Physicians who have not completed an accredited fellowship may still qualify based on their angiographic experience. The physician should have completed at least 100 angiographic procedures, including at least 50 visceral catheterization procedures and at least 25 selective embolization procedures. The physician should be prepared to present a log of completed cases, including success and complication rates, which must meet the quality thresholds of the Society of Interventional Radiology and American College of Radiology.

### Qualification by Proctorship

Some physicians may not qualify based on their formal training or experience. These physicians may still qualify, but it should be recognized that uterine embolization is a technically advanced procedure that requires considerable angiographic skill. Without any experience, it will take considerable proctoring to reach an acceptable level of training. Initially, the physician should attend at least 15 hours of continuing medical education on UAE of leiomyomata and associated gynecologic issues. If the operator has had no experience in angiography, observation of five cases should precede any participation in procedures. The key skills are as follows:

*Percutaneous arterial puncture.*—The operator should complete 100 arteriographic procedures with no significant complications among them. This should include selection of the skin entry site, anesthetization of the skin, puncture of the vessel and guide wire passage, catheter exchange and placement, catheter removal, and manual compression at the conclusion of the procedure without significant hematoma.

*Selective uterine artery catheterization.*—This is the most challenging portion of this procedure. The operator should successfully complete bilateral uterine catheterization procedures in 25 patients. As a result of this experience, the candidate should demonstrate an understanding of the arterial anatomy of the hypogastric artery and the various locations of the uterine artery origin. In addition, the candidate must demonstrate knowledge of the use of digital roadmapping and the use of oblique fluoroscopy to guide the catheterization. The candidate must become familiar with the use of selective catheters, microcatheters, and guide wires and demonstrate sufficient knowledge and skill to allow successful catheter placement in difficult cases.

*Uterine arteriography.*—The operator should perform uterine arteriographic studies on 25 patients in association with the catheterizations previously described. The operator should demonstrate an understanding of the use of proper positioning and collimation, film rates, and contrast material injectors.

*Uterine embolization.*—The physician should complete uterine embolizations on 25 patients without evidence of misembolization to nonuterine arterial branches. The operator should demonstrate detailed knowledge of the principles of embolotherapy and embolic materials, including particle type, size, and safe delivery.

Each case must be proctored and attested to by a qualified individual.

### Radiation Safety Training

Uterine artery embolization is a procedure that requires fluoroscopic and angiographic imaging. The radiation dose has been studied and it is clear that an at least moderate absorbed skin and ovarian dose is a likely result of the treatment. The data available would suggest that the radiation dose could be reduced dramatically if close attention is paid to dose limitation measures. Therefore, physicians who perform this procedure must be trained in radiation physics and radiation safety. The Task Force recommends that:

1. Each physician should be trained in the safe use of fluoroscopy and angiographic imaging and this training should be documented. At a minimum, this training should include 5 hours of continuing medical education.
2. For UAE procedures, the fluoroscopic time and number of angiographic images should be recorded. This information should be recorded in the procedure report. This information should also be regularly reviewed as part of the institution's continuing quality improvement efforts.

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