

Response to the ACC/ACP/SCAI/SVMB/SVS Clinical Competence Statement on Catheter-based Peripheral Vascular Interventions

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Abbreviations: ACC = American College of Cardiology, AHA = American Heart Association

THE August 16, 2004, issue of the *Journal of the American College of Cardiology* contains an article titled "Clinical Competence Statement on Vascular Medicine and Catheter-Based Peripheral Vascular Interventions (1)." It is an official multisociety statement from the American College of Cardiology (ACC), the American College of Physicians, the Society of Cardiac Angiography and Interventions, the Society for Vascular Medicine and Biology, and the Society for Vascular Surgery. The statement had its origins in an ACC/American Heart Association (AHA)/American College of Physicians task force and originally included authors from interventional radiology as well. The Society of Interventional Radiology (SIR) had fundamental disagreements with significant portions of the document that prevented endorsement from the Society and resulted in the removal of the names of the interventional radiology authors from the document. When the statement was submitted to a vote by all of the AHA scientific council leaders after open discussion, a narrow

majority voted several times to remove the AHA's name and endorsement from the document. Instead, it was published through the ACC with endorsement from the other listed societies.

The document contains two separate parts. The first part is a training curriculum for those who wish to be called vascular medicine specialists. This involves a description of the optimal training to produce a specialist competent to care for patients with any vascular problem of any complexity. The SIR does not disagree with the value of the suggested curriculum, although recognition of medical specialties and creation of training curricula come from the American Board of Medical Specialties and the Residency Review Committee rather than from statements from those within the field.

The second part of the document is a revision of the original 1992 AHA minimum training necessary for competence to perform catheter-based peripheral vascular interventions (2). The original AHA training requirements (also adopted by the ACC [3]) were authored by members from interventional radiology, interventional cardiology, and vascular surgery. The requirements were 100 diagnostic peripheral arteriograms, 50 peripheral angioplasty procedures, and 10 cases of percutaneous catheter-directed thrombolysis, of which 50% must be performed as primary operator. The new requirements as stated in the current ACC document have two major changes. There are separate require-

ments for extracranial cerebral interventions (section 2d in the **Table**) and there are now categories of competence restricted to individual arterial vascular beds (aortoiliac/brachiocephalic, infrainguinal, and renal; section 3 in the **Table**). The SIR has fundamental disagreements with these revisions.

For competence to perform extracranial cerebral interventions (predominantly carotid artery stent placement), the ACC statement has two training pathways. If the physician is fellowship-trained in peripheral vascular interventions, there are no specific requirements for performance of diagnostic cerebral arteriography or extracranial cerebral interventions. For established physicians without such previous fellowship training in peripheral vascular interventions, the statement requires the operator to have performed 30 diagnostic cerebral arteriography procedures and 25 extracranial cerebral interventions, with at least half of the procedures as primary operator. The diagnostic arteriography procedures and interventions are likely to be performed on the same patient in the same sitting. Therefore, the requirements are only 15 diagnostic arteriograms (as primary operator) and 13 interventions (as primary operator). These cases contribute to the overall requirement of 100 diagnostic peripheral arteriograms and 50 interventions in any vascular bed that the physician must still meet. The document acknowledges that the cerebral vasculature is a unique category be-

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ACC Procedural Training Recommendations 2004 (1)

1. Common Requirements
 - a. Completion of required training within 24-month period
 - b. Training under proctorship of formally trained vascular interventionalist competent to perform full range of procedures described in this document
 - c. Written curriculum with goals and objectives
 - d. Regular written evaluations by proctor
 - e. Documentation of procedures and outcomes
 - f. Supervised experience in inpatient and outpatient vascular consultation settings
 - g. Supervised experience in a noninvasive vascular laboratory
2. Procedural requirements for competency in all areas
 - a. Diagnostic peripheral angiograms—100 cases (50 as primary operator)
 - b. Peripheral interventions—50 cases (25 as primary operator)
 - c. No fewer than 20 diagnostic and 10 interventional cases in each area, excluding extracranial cerebral arteries*
 - d. Extracranial cerebral (carotid/vertebral) arteries—30 diagnostic (15 as primary operator), 25 interventional (13 as primary operator)
 - e. Percutaneous thrombolysis/thrombectomy—5 cases
3. Requirements for competency in subsets of areas (up to 3, excluding carotid/vertebral arteries)
 - a. Diagnostic peripheral angiograms per area—30 cases (15 as primary operator)
 - b. Peripheral interventions per area—15 cases (8 as primary operator)
 - c. Must include aortoiliac arteries as initial area of competency

* Vascular areas are (i) aortoiliac and brachiocephalic arteries; (ii) abdominal visceral and renal arteries; and (iii) infrainguinal arteries.

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cause of unique technical difficulties in catheterizing these vessels and the narrow safety margins of catheter procedures in these vessels. However, the assumption is that a physician who meets the minimum requirements for peripheral interventions needs zero or a relatively small number of cerebral cases to be competent in this vascular bed. The SIR disagrees with this. The American Academy of Neurology requires 100 training diagnostic cervico-cerebral angiograms to be credentialed just for diagnostic angiograms in this vascular bed (4). The current proposed revision of the American College of Radiology standard requires a similar number of training cases for radiologists, regardless of previous experience, to be credentialed for diagnostic neuroangiography. The consensus recommendation from the professional societies of interventional radiology, interventional neuroradiology, neurosurgery, and neurology is that at least 100 diagnostic cervicocerebral arteriograms are necessary before even beginning training in neurologic interventions (5,6). This recommendation is supported by the documented learning curve in the performance of diagnostic cerebral angiography (7), the multisociety requirements for specialty training in neurointerventions

(8), and the consensus of the societies that created the field of diagnostic and interventional neurovascular procedures during past decades.

Although there are no trials to indicate that one recommended training is superior to another for particular groups of physicians (a situation common to most training in most specialties), the comparison of training requirements for carotid interventions versus coronary interventions is helpful. Training for coronary interventions requires a minimum of 24 months of core cardiology and 8 months of training in cardiac catheterization in a program approved by the Accreditation Council for Graduate Medical Education, then a minimum of 300 cardiac catheterizations (200 as primary operator) before starting training in coronary interventions, and then a minimum of 12 months of advanced training in coronary interventions with performance of at least 250 interventions (9). This is serious training for serious work. There are no shortcuts for physicians with catheter expertise or cognitive knowledge in other vascular beds, even if they are board-certified cardiothoracic surgeons or interventional radiologists. The ACC recommendation of *zero* cerebral arteriograms and *zero* carotid

stent placement procedures (15 arteriograms and 13 stents as primary operator for postfellowship training) is vastly more lenient than the requirements for coronary interventions, as well as the training requirements for diagnostic and interventional neurovascular procedures that the neurology, neurosurgery, and radiology fields impose on themselves. In the American Medical Association evaluation process for suggesting payment for carotid artery stent placement, cardiology contributors indicated that carotid artery stent placement is significantly more complex and intense than coronary stent placement, making the appropriateness of very lenient training criteria for carotid artery stent placement even more questionable.

The SIR also disagrees with the concept of allowing limited training to achieve competency restricted to a particular vascular territory. The ACC statement allows competency in the aortoiliac vessels with 30 diagnostic and 15 interventional cases (with at least half as primary operator) but no experience performing percutaneous catheter-directed peripheral vascular thrombolysis. This recommendation is a revision of the Society of Cardiac Angiography and Interventions guidelines that required for interventional cardiologists only

three training cases for each vascular bed (10). It is reasonable that a physician who has extensive previous endovascular experience in the coronary arteries will not need 100 diagnostic peripheral arteriograms to learn basic catheter and guide wire skills applicable in peripheral vessels, but the new restricted category is available to any vascular physician who wishes a gradual entry into peripheral vascular work. In fact, the ACC statement removed a note from an earlier draft that restricted competency "assumes the physician has an adequate command of basic skills in catheter manipulation." The new restricted category actually minimizes the training requirements for those with the least experience. Full competency in catheter interventions should be required. If the full number of training cases is performed in only one vascular territory, competency should be restricted to that territory.

The ACC document does not provide outcome standards, even though it does state that the outcomes of procedures should be documented and comparable to published standards. SIR has published these standards, including definitions of and outcome thresholds for appropriate indications, technical success, and major complications. The SIR quality improvement document on carotid stent placement includes these thresholds (11). The clinical benefit of carotid revascularization is present only if the revascularization can be performed with exceedingly low complication rates and high rates of technical success (12). Given the controversy among specialties concerning the extent of training necessary to perform carotid stent placement, accountability with objective outcomes is necessary to assure excellent—or even adequate—practice performance for carotid stent placement and all endovascular procedures. Unfortunately, this accountability will represent a retrospective tally of strokes and deaths.

Despite the title of the document stating that it defines competence in catheter-based peripheral vascular interventions, the focus of the document is revascularization procedures and does not include many other catheter-based peripheral vascular interventions. It is implied that meeting the training criteria of the document is sufficient to perform any endovascular

procedure. There are no requirements for experience performing embolization, venous access, dialysis graft interventions, or inferior vena cava filter placement. All these procedures have their own learning curve and require adequate training to have routinely good outcomes. The ACC document overreaches inappropriately by including all endovascular interventions and could lead to physicians with no experience in some procedures receiving blanket credentials to perform any and all peripheral endovascular interventional procedures.

The ACC document confuses optimum and minimum requirements. In contrast to the 1992 AHA minimum requirements that qualified any physician who met the procedure and cognitive requirements, the ACC is now requiring fellowship training in catheter-based interventions. We agree that optimal care is provided by a fellowship-trained and board-certified interventionalist who is trained in all possible interventions in all vascular beds and performs large numbers of cases in all vessels. However, excellent care can also be provided by non-fellowship-trained physicians who meet the procedure and knowledge criteria for peripheral interventions and whose cases have outcomes commensurate with national quality thresholds.

The ACC paper has the laudable goal of standardizing training for all of us who perform peripheral endovascular procedures. There is much in the paper that is thoughtful and helpful, including defining how to count "procedures" and describing the necessary cognitive knowledge for some procedures. There is also much with which we disagree and which raises concerns regarding adequate patient care. Perhaps outcomes data in the future will demonstrate how much training is truly necessary to perform endovascular procedures by those with varying backgrounds. Some data indicate an extended learning curve for interventional cardiologists performing carotid stent placement (13,14). Complete information regarding ideal training for each individual and specialty is not available now, and may never be available. That is why formal, accredited programs exist. Until then, we rely on the consensus of experts and we disagree among specialties. Until then, the SIR stands by its training

standards for endovascular procedures, including carotid interventions. We believe our standards best serve the purpose of patient care.

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