



DEFINITION AND APPLICATION OF TERMS USED IN ACR PRACTICE GUIDELINES

ACR Practice Guidelines use several terms such as “supervision”, “performance”, “interpretation”, “reporting”, and “review” in discussion of physician qualifications. Often some number of cases is specified in one or more of these categories. However, the precise meaning of these terms is left to the reader. While these concepts may be relatively straightforward in a traditional learning environment such as in a residency or fellowship program, they are less clear in other situations such as when practicing physicians learn a new technique primarily through independent study. With increasing scrutiny of new procedures by hospitals, insurers, physicians, and the public, clearer definitions are needed.

The concepts of “supervision” and “performance” of an examination are often related and can vary substantially among examinations. In interventional procedures and invasive diagnostic procedures, there is a hands-on component of performance that includes direct interaction with the patient. As part of performance of the procedure, the physician is also directly involved in supervision of the procedure and other personnel involved in its performance. At the other extreme are examinations that are completely performed by technologists with only limited general supervision by a physician. This includes general radiography and many basic cross-sectional examinations. The physician may be involved in developing and revising protocols that define performance of the procedures. There is an intermediate class of examinations that may require some level of physician participation in the performance, and this level of involvement might vary from case to case even for the same type of examination. In general, increasing levels of physician involvement in the performance of an examination relate to more immediate supervision of others also involved in performing the examination. Examples would include CT and MRI studies that require post-processing of image data and ultrasound studies where the physician might perform additional imaging. In addition, newer and/or more complex examinations may require a greater level of supervision than more established examinations.

The concepts of “interpretation” and “reporting” are more important to physician credentialing, except perhaps for interventional and invasive procedures, than are supervision and performance. These terms are closely related and nearly synonymous. Both refer to detailed analysis of the case, but reporting specifically indicates issuance of the “final report” that is part of the medical record whereas interpretation might indicate that the final report is issued by another physician. “Review”, however, may indicate a less stringent level of evaluation of an examination, possibly with the actual final report available at the time of review.

In assessing physician qualification to independently perform, supervise, interpret, and/or report an examination, there is a second usage of the term “supervision”. In some circumstances, the physician is expected to perform, supervise, interpret, and/or report some number of examinations “under supervision”. This concept of “supervision” related to the interaction of two parties, the “expert” physician and the “training” physician. The expert physician should at minimum meet the defined qualifications for the procedure in question, and ideally the expert physician’s training and experience should significantly exceed the minimum level defined for independent practice. In some cases of a new procedure, the expert physician may be one of the original physicians who described and performed the procedure and as such will not have had formal supervision or training during his/her initial experience, but such physicians will have extensive experience and be recognized as leaders in their field. More than one expert physician will often mentor a single training physician and an individual expert physician may mentor several training physicians at any time. At the conclusion of the period of training, the expert physician(s) should be able to verify the qualifications of the training physician to perform and interpret the procedure independently and

should be able to document the number of procedures performed, supervised, interpreted, and/or reported under supervision if needed.

In the ideal situation, the training physician and the expert physician work together supervising and/or performing the examination as appropriate to the specific situation and then interpreting and reporting the examination. When there is a procedural component to the examination, the training physician should be the primary operator or the first assistant and should work directly with the expert physician. The performance of such examinations may be more important, and certainly carries more risk to the patient, than the associated interpretation. As such, beyond initial limited training on phantoms, animals, or simulators, there is no substitute for performance of clinical cases under the supervision of a qualified physician. A specific number of procedures as primary operator will usually be expected. In all situations, the training physician ideally initially interprets the examination independently and then reviews the case with the expert physician prior to issuing the final report, but the two physicians may work together to simultaneously interpret the examinations. During the process, the training physician receives direct feedback as to his/her performance, and the expert physician can evaluate the progress and competency of the training physician. This type of arrangement is typical in a residency or fellowship training program, but it could also occur outside of a formal educational setting.

However, in some situation, particularly when new procedures or examinations develop, this type of direct training is not possible for the large number of physicians who need to learn and later independently perform and interpret a new examination. In such situations, training may occur using a data base of previously performed and interpreted cases. While independent review of such cases and the reports issued by expert physicians can be of substantial educational value, if the competency of the training physician is to be assessed, a more rigorous and interactive approach is usually preferred. Methods of instruction for non-procedural examinations could include a lecture format with use of an audience response system that is traceable to the individual participant, a view box or computer monitor based program of case reviews with expert supervisions and instruction, or an individual instruction system such as a CD-ROM or web-based program. In any of these alternative situations, the training physician should evaluate cases and should either independently respond to specific questions that are integral to the proper interpretation of the cases or should formulate a report of the cases for review by the expert physician. The training physician should also receive direct feedback regarding his/her responses, and the expert physician, either directly or indirectly, should be able to assess the competency of the training physician. The training physician should have resources available to remediate areas of weakness if needed. An additional alternative after an initial but incomplete period of training is to perform studies at the training physician's institution and formulate a preliminary report that is reviewed for accuracy and corrected as needed by an expert physician before the report is finalized. This situation could closely mimic the traditional residency or fellowship training relationship, especially if rapid electronic transfer of images to the expert physician is possible, which in addition to shortening the time to review could allow the two physicians to simultaneously review the case from different locations and discuss the findings as if they were in the same location.