

ACR Appropriateness Criteria[®] Background and Development

Background

In 1993, the leadership of the American College of Radiology (ACR) determined that in the changing health care environment, a premium would be placed on the efficient use of resources including appropriate use of radiologic services. Additionally, ACR leadership concluded that there was an immediate need to develop a system of nationally accepted, scientifically based guidelines to assist radiologists and referring physicians in making appropriate imaging decisions for given patient clinical conditions.

The ACR had received multiple inquiries from radiologists, hospitals, and payers concerning the availability of such criteria. These contacts emphasized the need for the discipline of radiology to take a leadership role in criteria development. The ACR Task Force on Appropriateness Criteria was created for this purpose. It was recognized from the beginning that setting criteria would require use of broad-based consensus techniques, because data from existing scientific outcome and technology assessment studies are usually insufficient for this purpose. It was also recognized that the input of physicians from other medical specialties would be invaluable to the effort. This was the background that led to the current structure and process of the Task Force.

In creating the ACR Appropriateness Criteria[®], the Task Force, incorporated attributes for developing acceptable medical practice guidelines used by the Agency for Healthcare Research and Quality (AHRQ; formerly AHCPR) as designed by the Institute of Medicine. These attributes are:

Validity: Guidelines are valid if they lead to better outcomes. Validity assessment should be based on the quality of the scientific evidence and the method of evidence evaluation.

Reliability/Reproducibility: Another set of experts should be able to produce similar guidelines when using the same methodology to evaluate the same scientific evidence.

Clinical Applicability: Guidelines should include an explicit description of the applicable patient population.

Clinical Flexibility: Guidelines must specify known or expected exceptions.

Clarity: Guidelines must be unambiguous with clearly-defined terms. They should be presented in a logical manner and be easy to follow.

Multidisciplinary Process: Affected provider groups should have representation in the guideline development process.

Scheduled Review: All guidelines should undergo scheduled review to determine whether revision is indicated based on current scientific evidence.

Documentation: The development procedure, the participants, the evidence, and the methods of analysis should be documented.

The AHRQ is explicit in stating its intent that scientific evidence should be used as much as possible but that judgment and group consensus will be necessary in the development of medical guidelines. The National Guidelines Clearinghouse (NGC), one of the initiatives of AHRQ, is a public resource for evidence-based clinical practice guidelines. Many of the ACR Appropriateness Criteria[®] topics are posted on the [NCG site](#).

Committee Structure

In 2000, the Task Force became the Committee on Appropriateness Criteria under the ACR's Commission on Quality and Safety. Together, panel leaders and the chair of the Committee on Appropriateness Criteria, act as a Steering Committee to oversee the activities of seventeen consensus panels - nine diagnostic and eight therapeutic. The diagnostic panels are organized along organ system lines with exceptions for panels on pediatric and women's imaging. There are separate treatment decision panels for radiation oncology and interventional radiology. Each consensus panel is chaired by an individual with leadership capabilities and national recognition of expertise in the area of focus.

The Appropriateness Criteria Committee develops policy and provides direction for the expert panels, including management of the overall criteria development process and time table conformance. Consultants to the Committee provide expertise as needed; for example, providing advice in the development of consensus techniques and handling legal implications associated with the setting of national criteria.

Each panel chair is responsible for selecting panel participants. Broad representation is imperative and radiologists with diverse geographical representation are included from academic and private practice settings. Members have expertise in applicable imaging modalities.

The ACR recognized the importance of contributions from a variety of sources in the development of the appropriateness criteria. Major scientific societies representing specialties outside of radiology also participate in the development of the criteria. Members from over 15 non-radiology specialty organizations are currently participating.

Over 200 physician representatives are involved in the criteria development process. The funding for the process is assumed entirely by the American College of Radiology. ACR staff provides support to the expert panels, including literature searches, acquisition of scientific articles, dissemination of materials for the Delphi process, collation of results, computer entry, and general assistance of the panel participants.

Process of Criteria Development

Each panel selects clinical conditions to be addressed based on the prevalence of the condition, the variability of practice, the relative cost, the potential for morbidity or mortality, and the potential for improved care. Each question is clarified and refined to be as specific as possible and frequently clinical conditions are broken down into a number of variants. Once the clinical condition and its variants have been defined, literature searches of peer-reviewed medical journals are conducted and the major applicable articles are identified and collected. One or two topic leaders within a panel assume the responsibility of developing an evidence table for each clinical condition, based on the analysis of the current literature. These tables serve as the basis for developing a narrative specific to each clinical condition.

The ACR Appropriateness Criteria[®] presently address over 160 clinical conditions with over 700 variants. New topics are added to reflect changes in technology and clinical practice. It is believed that this systematic process of criteria development provides credible guidelines for radiology decision-making based on scientific analysis and broad-based consensus techniques.

Delphi Method

Since data available from existing scientific studies are usually insufficient for meta-analysis, broad-based consensus techniques are needed for reaching agreement in the formulation of the appropriateness criteria. The ACR Appropriateness Criteria[®] panels use a modified Delphi technique to arrive at consensus. Serial surveys are conducted by distributing questionnaires to consolidate expert opinions within each panel. These questionnaires are distributed to the participants along with the evidence table and narrative as developed by the leader(s). Questionnaires are filled out by participants in their own professional setting without the influence of the other panel members. Voting is conducted using a scoring system from 1-9, indicating the least to most appropriate imaging examination or therapeutic procedure. The survey results are collected, tabulated in anonymous fashion, and redistributed after each round. A maximum of three rounds are conducted and opinions are unified to the highest degree possible. Eighty percent agreement is considered consensus. This modified Delphi technique

enables individual, unbiased expression, is economical, easy to understand, and relatively simple to conduct.

If consensus cannot be reached by the Delphi technique, the panel is convened and group consensus techniques are utilized. The strengths and weaknesses of each test or procedure are discussed and consensus reached whenever possible. If “No consensus” appears in the rating column, reasons for this decision are added to the comment sections

The appropriateness criteria are reviewed annually and updated by the panels as needed, depending on introduction of new and highly significant scientific evidence.

Use of Appropriateness Criteria

Clinical practice guidelines are meant to apply to the majority of patients. More specifically, the ACR Appropriateness Criteria[®] are intended to guide radiologists, referring physicians, and patients in making initial decisions about diagnostic imaging and therapeutic techniques. The complexity and severity of a patient’s clinical condition dictates the selection of appropriate imaging procedures and treatments. Additionally, the availability of equipment or trained personnel may influence the selection of appropriate imaging procedures or treatments. The ultimate decision on the appropriate use of any specific examination or treatment is one that is made by the radiologist and the referring physician in light of all the circumstances presented in an individual situation.

Imaging techniques classified as investigational by the Federal Drug Administration have not been considered. The Committee believes that the study of new equipment and applications should be encouraged.

Market forces are influencing physicians and provider organizations to practice cost-effective medicine while still maintaining quality. Utilization management of radiology services is a significant component of this change. The ACR Appropriateness Criteria[®] can be used to enhance the quality of patient care while contributing to the most efficacious use of radiology resources.

Summary

It is believed that this systematic process of criteria development will provide credible guidelines for radiology decision-making based on scientific analysis and broad-based consensus techniques. It is hoped that the end result will be the cost-effective practice of high-quality radiology.

For more information on the ACR Appropriateness Criteria[®], please contact the ACR at acr_ac@acr.org