ACR Appropriateness Criteria®
Overview

Prologue

In creating the ACR Appropriateness Criteria® (ACR AC), the ACR Task Force on Appropriateness Criteria, incorporated attributes for developing acceptable medical practice guidelines used by the Agency for Healthcare Research and Quality (AHRQ) 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 has been 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. The ACR AC topics are posted on the NGC site, as well as on the ACR website (www.acr.org/ac).

Committee Structure

In 2000, the ACR Task Force on Appropriateness Criteria became the Committee on Appropriateness Criteria under the ACR's Commission on Quality and Safety. In 2012, two separate AC Committees were created – the Committee on Diagnostic Imaging (DI)/Interventional Radiology (IR) Appropriateness Criteria and the Committee on Radiation Oncology (RO) Appropriateness Criteria. The DI/IR AC committee is comprised of the panel chairs from the DI and IR panels and the RO AC committee is comprised of the RO panel chairs. These Committees oversee the activities of their expert panels. The diagnostic panels are mainly organized along body systems (breast, cardiac, gastrointestinal, musculoskeletal, neuroradiology, thoracic, urologic, vascular, pediatric, and women's imaging). The RO panels are organized by disease site (bone metastases, brain metastases, breast, gastrointestinal, gynecologic, head and neck, lymphoma, lung, and prostate). Each expert panel is chaired by an individual with leadership capabilities and national recognition of expertise in the area of focus.

The Subcommittee on Radiation Exposure assigns and regularly reviews the relative radiation levels for the procedures included in the topics and updates the "Radiation Dose Assessment Introduction" document as needed.

The Subcommittee on Appropriateness Criteria Methodology provides methodological oversight to all the panels. Its purpose is to ensure that consistent, sound methods are used in developing and revising AC topics across all the panels. It includes members from the various AC panels as well as individuals with methodological and research expertise.

Each panel chair is responsible for selecting the radiology or radiation oncology panel participants. Physicians from different geographic regions, representing academic and private practice settings, are included. Panelists are expert in the relevant imaging modalities or clinical settings. Major medical societies, representing clinical specialties outside of radiology, also participate in the development of the criteria. More than 80 representatives from 23 medical specialty organizations participate on the ACR AC expert panels.

Over 450 volunteer physicians are involved in the criteria development process. The funding for the process is assumed entirely by the American College of Radiology. ACR staff support the expert panels through the conduct of literature searches, acquisition of scientific articles, drafting of evidence tables, dissemination of materials for the Delphi process, collation of results, conference calls, document processing, and general assistance to the panelists.

Current Content

The ACR AC addresses 211clinical conditions with more than 1,050 variants. New topics are added to reflect changes in technology and clinical practice. The ACR AC are reviewed and updated by the panels every 3 years or sooner, depending on the introduction of new and important scientific evidence.

Process of Criteria Development

The ACR AC are based on a systematic review of evidence as demonstrated by literature search, evidence table development, and topic development documents. Topic selection may be 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, the clinical conditions are broken down into a number of variants.

Once a clinical condition has been defined, a literature search of peer-reviewed medical journals is conducted and the relevant articles are identified and collected. The topic author assesses the literature then drafts or revises the narrative summarizing the evidence found in the literature. ACR staff drafts an evidence table based on the analysis of the selected literature. These tables rate the study quality for each article included in the narrative.

The expert panel reviews the narrative, evidence table and the supporting literature for each of the topic-variant combinations and assigns an appropriateness rating for each procedure listed in the variant table(s). Each individual panel member assigns a rating based on his/her interpretation of the available evidence.

Defining Appropriateness

The ACR has adopted the AQA's definition of appropriateness. "The concept of appropriateness, as applied to health care, balances risk and benefit of a treatment, test, or procedure in the context of available resources for an individual patient with specific characteristics. Appropriateness criteria provide guidance to supplement the clinician's judgment as to whether a patient is a reasonable candidate for the given treatment, test or procedure."[1]

An assumption when assessing appropriateness is that the ordering health care provider has not yet determined whether a radiological procedure is clinically useful for the specific situation. The expert panel may recommend no radiological procedure as being appropriate for a specific clinical scenario. In those instances where more than one radiological procedure may be appropriate, the expert panel will provide additional guidance or clarification of the issues.

Rating Appropriateness

The ACR AC methodology is based on the RAND Appropriateness Method[2]. The appropriateness ratings for each of the procedures or treatments included in the AC topics are determined using a modified Delphi method. A series of surveys are conducted to elicit each panelist's expert interpretation of the evidence, based on the available data, regarding the appropriateness of an imaging or therapeutic procedure for a specific clinical scenario. The expert panel members review the evidence presented and assess the risks or harms of doing the procedure balanced with the benefits of performing the procedure. The direct or indirect costs of a procedure are not considered as a risk or harm when determining appropriateness. When the evidence for a specific topic and variant is uncertain or incomplete, expert opinion may supplement the available evidence or may be the sole source for assessing the appropriateness.

The appropriateness is represented on an ordinal scale that uses integers from 1 to 9 grouped into three categories: 1, 2, or 3 are in the category "usually not appropriate" where the harms of doing the procedure outweigh the benefits; and 7, 8, or 9 are in the category "usually appropriate" where the benefits of doing a procedure outweigh the harms or risks. The middle category, designated "may be appropriate", is represented by 4, 5, or 6 on the scale. The middle category is when the risks and benefits are equivocal or unclear, the dispersion of the individual

[1] *from the AQA Principles for Appropriateness Criteria - These principles are a subset of the general AQA Parameters for Selecting Measures for Physician Performance. They are not to be viewed independently of that document.*

[2] *Fitch K. The Rand/UCLA appropriateness method user's manual. Santa Monica: Rand; 2001.*

ratings from the group median rating is too large (i.e., disagreement), the evidence is contradictory or unclear, or there are special circumstances or subpopulations which could influence the risks or benefits that are embedded in the variant.

The ratings assigned by each panel member are presented in a table displaying the frequency distribution of the ratings without identifying which members provided any particular rating. To determine the panel's recommendation, the rating category that contains the median group rating without disagreement is selected. This may be determined after either the first or second rating round. If there is disagreement after the second rating round, the recommendation is "May be appropriate."

This modified Delphi method enables each panelist to articulate his or her individual interpretations of the evidence or expert opinion without excessive influence from fellow panelists in a simple, standardized, and economical process. For additional information on the ratings process see the Rating Round Information document.

Additional Information

Additional methodology documents, including a more detailed explanation of the complete topic development process and all ACR AC topics can be found on the ACR website in English at www.acr.org/ac.

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

Disclaimer: *The ACR Committee on Appropriateness Criteria and its expert panels have developed criteria for determining appropriate imaging examinations for diagnosis and treatment of specified medical condition(s). These criteria are intended to guide radiologists, radiation oncologists and referring physicians in making decisions regarding radiologic imaging and treatment. Generally, the complexity and severity of a patient's clinical condition should dictate the selection of appropriate imaging procedures or treatments. Only those examinations generally used for evaluation of the patient's condition are ranked. Other imaging studies necessary to evaluate other co-existent diseases or other medical consequences of this condition are not considered in this document. The availability of equipment or personnel may influence the selection of appropriate imaging procedures or treatments. Imaging techniques classified as investigational by the FDA have not been considered in developing these criteria; however, study of new equipment and applications should be encouraged. The ultimate decision regarding the appropriateness of any specific radiologic examination or treatment must be made by the referring physician and radiologist in light of all the circumstances presented in an individual examination.*