ACR Appropriateness Criteria®
Rating Round Information

Overview

The appropriateness for each procedure in the Appropriateness Criteria (AC) topics is determined using a modified Delphi method. The expert panel members review the evidence presented in the Summary of Literature Review and assess the risks or harms of doing the procedure balanced with the benefits of performing the procedure. Expert opinion may supplement the available evidence or may be the sole source for assessing the risk-benefit ratio when the published evidence for a specific topic and variant does not exist or is incomplete or contradictory.

The appropriateness is rated 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 is called "may be appropriate" and is represented by 4, 5, or 6 on the scale (Table 1). The middle category is when the risks and benefits are equivocal or unclear, the dispersion of the individual ratings from the group median rating is too large, 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.

General information:

- All panel members (including society representatives) are expected to participate in all of the rating rounds. If a panel member feels he or she does not have the relevant expertise to rate a particular topic, the panel member is expected to notify the ACR staff at the beginning of the rating rounds. The panel member's name will be removed from that topic.
- Panel members review all information included on the evidence table and narrative to assign the appropriateness ratings for each procedure. The ratings are based on the assessment of the risks and benefits of performing the procedure for the specified clinical scenario using the available evidence. Expert opinion is required to interpret the evidence and may determine the rating when the evidence is incomplete, contradictory, or non-existent.
- For existing topics being reviewed or updated, the panel rates only those procedures they have determined require consideration due to new and significant evidence, new or modified procedures or techniques, or changes in practice behaviors. For new topics/variants, all procedures are rated.
- Two rating rounds are conducted. A conference call is held after the first rating round to discuss the evidence and clarify the document, not to finalize the recommendations.
- The ACR staff sends the following materials for:
  - Rating Round 1: Narrative, evidence table (ET), Rating Round 1 forms.
  - Conference Call between Rating Round 1 and 2: Narrative, ET, tabulations from Rating Round 1.
  - Rating Round 2: Narrative, ET, notes from the conference call, rating round two forms.
  - After Round 2: Final draft document with completed variant tables with ratings.

Ratings assumptions:

The ACR adopted the definition of appropriateness mentioned in the RAND/UCLA Appropriateness Method User's Manual (Fitch 2001) where "the expected health benefit (e.g., increased life expectancy, relief of pain, reduction in anxiety, improved functional capacity) exceeds the expected negative consequences (e.g., mortality, morbidity, anxiety, pain, time lost from work) by a sufficiently wide margin that the procedure is worth doing, exclusive of cost" (Brook et al., 1986; Park et al., 1986).

Some risks or benefits may vary due to factors that are unique to a specific patient and provider situation. For example, MRI may be contraindicated in some patients (eg, those with an implanted medical device). This individual patient characteristic is important in the final selection of an appropriate procedure for this specific patient. Therefore, the final decision made by the provider and the patient may appropriately use a different modality even when the medical evidence and expert opinion strongly support the use of MRI in that clinical scenario.

The following list explains guidelines and assumptions that are to be used by AC panelists when rating appropriateness. A more detailed explanation may be found in Appendix 1.

When assigning appropriateness ratings to procedures, panelists should assume that:

- The patients (as defined in the topic and variant) do not have contraindications for any of the procedures listed in the rating table.
- All procedures in the rating table are available and accessible.
- All procedures in the rating table are performed and interpreted by an expert.
- The direct or indirect costs of a procedure are not considered as a risk or harm when determining appropriateness.
- The Relative Radiation Level (RRL), radiation exposure, radiation dose or the amount of radiation produced from performing a procedure in the rating table are not considered as a risk or harm when determining appropriateness as these are difficult to calculate and very low for a specific individual. The overall benefits of the procedure for a given clinical presentation should be assumed to outweigh any theoretical risk due to potential exposure to ionizing radiation when determining the appropriateness category.

Determining the Panel's Recommendation:

- Ratings represent an individual's assessment of the risks balanced with benefits of performing a specific procedure for a specific clinical scenario on a numeric scale. The recommendation is the rating category (i.e., "Usually appropriate", "May be appropriate", or "Usually not appropriate").
- 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".
- Disagreement is defined as excessive dispersion of the individual ratings from the group median as determined by comparison of the Interpercentile Range (IPR) and the Interpercentile Range Adjusted for Symmetry (IPRAS). In those instances when the IPR is greater than the IPRAS, there is disagreement. For a complete discussion, please refer to chapter 8 of the RAND/UCLA Appropriateness Method User Manual.
- Once the final recommendations have been determined, the panel reviews the document. If two thirds of the panel feel a final recommendation is wrong (eg, does not accurately reflect the evidence, may negatively impact patient health, has unintended consequences that may harm health care, etc.), the entire topic must be withdrawn and the process must be started again from the beginning.

Clarifying recommendations for procedures with the same rating:

In those instances where two or more procedures are in the "usually appropriate" category, additional information to clarify the recommendations may be included in the comments. A more in-depth explanation can be found in Appendix 2.

Table 1. Appropriateness Category Names and Definitions

Rating	*Category Name*	*Category Definition*	*Disagreement*
7, 8, or 9	Usually appropriate	The imaging procedure or treatment is indicated in the specified clinical scenarios at a favorable risk-benefit ratio for patients.	The dispersion of the individual ratings from the panel median rating is assessed to determine if there is no disagreement. When the individual ratings are too dispersed from the panel median (disagreement), "May be appropriate" is the designated rating category.
4, 5, or 6	May be appropriate	The imaging procedure or treatment may be indicated in the specified clinical scenarios as an alternative to imaging procedures or treatments with a more favorable risk-benefit ratio, or the risk-benefit ratio for patients is equivocal.	
1, 2, or 3	Usually not appropriate	The imaging procedure or treatment is unlikely to be indicated in the specified clinical scenarios, or the risk-benefit ratio for patients is likely to be unfavorable.	

APPENDIX 1

Rating Assumptions

I. Rating Assumptions

The panelist is tasked to determine which procedure(s) are "appropriate" based on the available evidence supplemented by their expert opinion for a defined clinical scenario in an "ideal" world (e.g., in which patients are similar, all procedures are available, etc.). Clarifications about the assumptions related to rating appropriateness will facilitate all panelists to rate in a similar manner so that risks and benefits can be assessed uniformly.

1. *Relative radiation levels*

   When rating appropriateness**, the panelist should not consider relative radiation level of the procedure when determining the appropriateness category.**

   Explanation/Clarification

   Relative radiation levels of the procedure should not be considered when determining the appropriateness category. The overall benefits of the procedure should be assumed to outweigh any risk due to potential exposure to ionizing radiation when determining the appropriateness category.

2. *Procedures that depend on the expertise of the practitioner.*

   When rating appropriateness, **the panelist should assume that all procedures are performed by an expert**.

   Explanation/Clarification

   Some procedures may be appropriate but the benefits may largely depend on how well the operator or practitioner performs the procedures. A note may be placed in the comment section with further discussion in the text that explains that the results are operator dependent or requires special training or expertise for performance, supervision, or interpretation.

3. *Availability of the procedure*

   When rating appropriateness, **the panelist should assume that all procedures are available.**

   Explanation/Clarification

   The rating should only be based on the evidence of the appropriateness of performing the procedure. The lack of the availability of one procedure should not enhance (or diminish) the appropriateness of another procedure. If the procedure is not generally available, a note may be made in the comment section as well as a suggestion for which procedure may be optimal in the event that another procedure (which may be more appropriate) is likely not to be available.

4. *Procedures that are contraindicated*

   When rating appropriateness, **the panelist should assume that the patients defined by the topic and variants do not have contraindications for any of the procedures**

   Explanation/Clarification

   The rating should only be based on the evidence of the appropriateness of performing the procedure for the described topic and variant. Contraindications should not enhance or diminish the appropriateness of any procedure within a variant.

5. *Cost of the procedure*

   When rating appropriateness, **the panelist should not consider the procedure cost.**

   Explanation/Clarification

   Cost or insurance coverage issues may be discussed in the narrative but procedure costs/coverage issues should not be noted in the comment section of the rating table.

APPENDIX 2

Alternative, Complementary, and Follow-up Procedures

In order to help users clearly understand when separate procedures receive the same "usually appropriate" recommendation, when multiple procedures should be performed, or when follow up procedures are recommended, panelists should follow the instructions below.

1. *Equivalent procedures*

   When two or more procedures in the "usually appropriate" category are equally appropriate and sufficient to address the clinical scenario, the procedures are equivalent alternatives. All procedures within a rating category should be assumed to be alternative procedures unless otherwise stated. The term "alternative" will be used in the comment field of the rating table when additional clarification is warranted.

2. *Multiple procedures*

   The term "complementary" will be used in the comment field of the rating table when two or more procedures in the "usually appropriate" category are appropriate to perform *together* to address the clinical scenario. If there is a sequence to performing the procedures, this will also be noted in the comments.

3. *Follow up procedures after the initial procedure*

   When a follow-up procedure may be necessary to make the initial diagnosis for a given clinical condition, a separate variant is created to make the recommendations.