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Appropriate Use Criteria as a Tool and Clinical Decision Aides – Lessons from the US

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Affiliation/Financial Relationship	Company
Consultant	Abbott Laboratories (paid to the institution), Abiomed (spouse), Boston Scientific, CardioKinetix (paid to the institution), Cardiovascular Systems Inc, Medscape, Siemens Medical Solutions, Spectranetics, The Medicines Company, Roivant Sciences Inc, Volcano Corporation
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Equity, <1%	Claret Medical, Elixir Medical
Executive Committee	Janssen Pharmaceuticals, Osprey Medical
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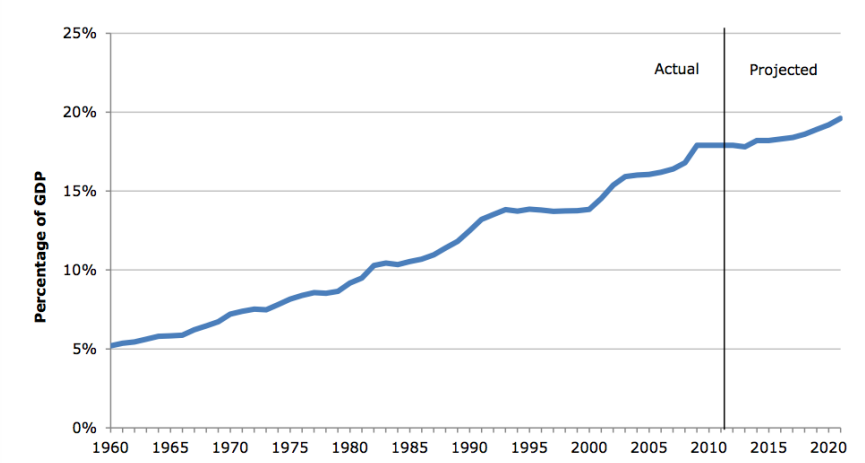
Introduction

- Medical development has resulted in improved survival but has also increased costs
- This higher cost has led to greater regulations to reduce spending and reimbursement
- There is an imperative need to improve the utilization of diagnostic and therapeutic tools in the most cost-effective fashion

National Health Expenditures as a share of GDP in the US, 1960-2021



Source: Centers for Medicare and Medicaid Services.

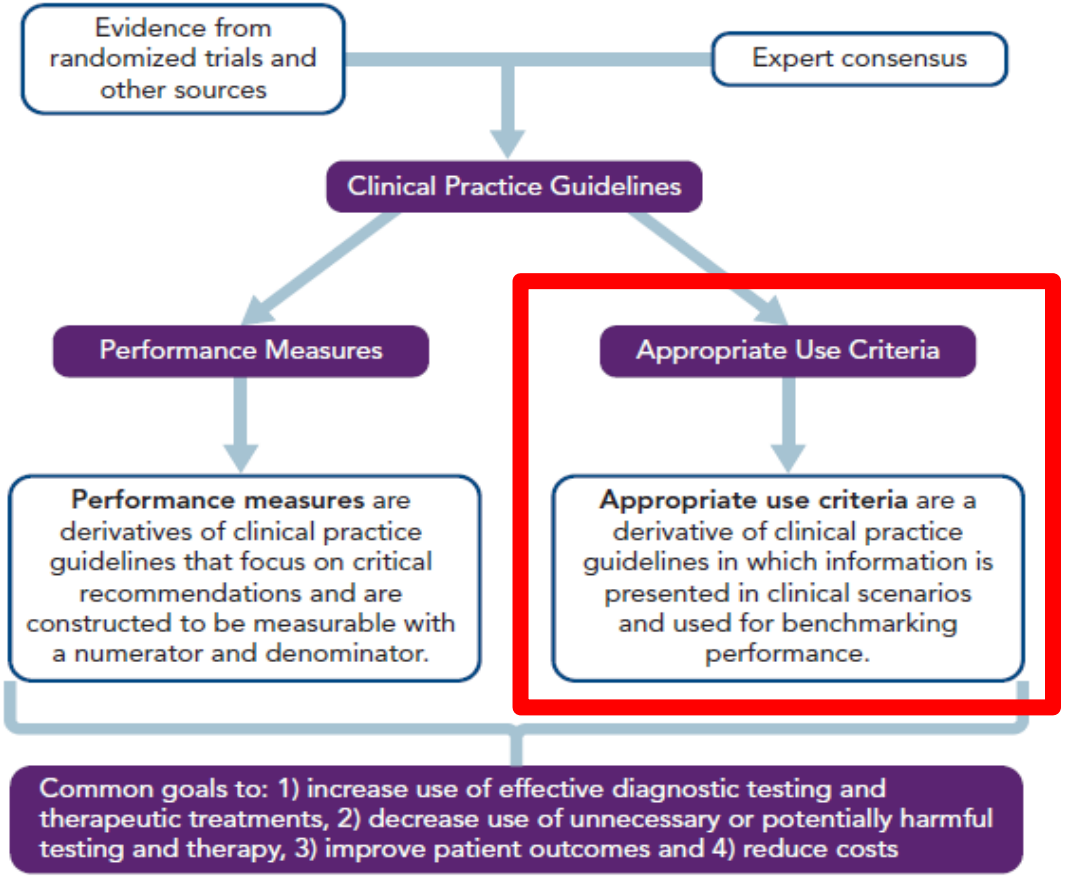
What is AUC?

Set of individual criteria that present information in a manner that links a specific clinical condition or presentation, one or more services, and an assessment of the appropriateness of the service.

Main objective: Identify patients who will most benefit from a procedure and those who will not, resulting in a more effective and equitable allocation of resources.

'The right patient receives the right test at the right time'.

Appropriate Procedure = **Evidence-based** + **Cost-Effective** + **Individualized to patient**



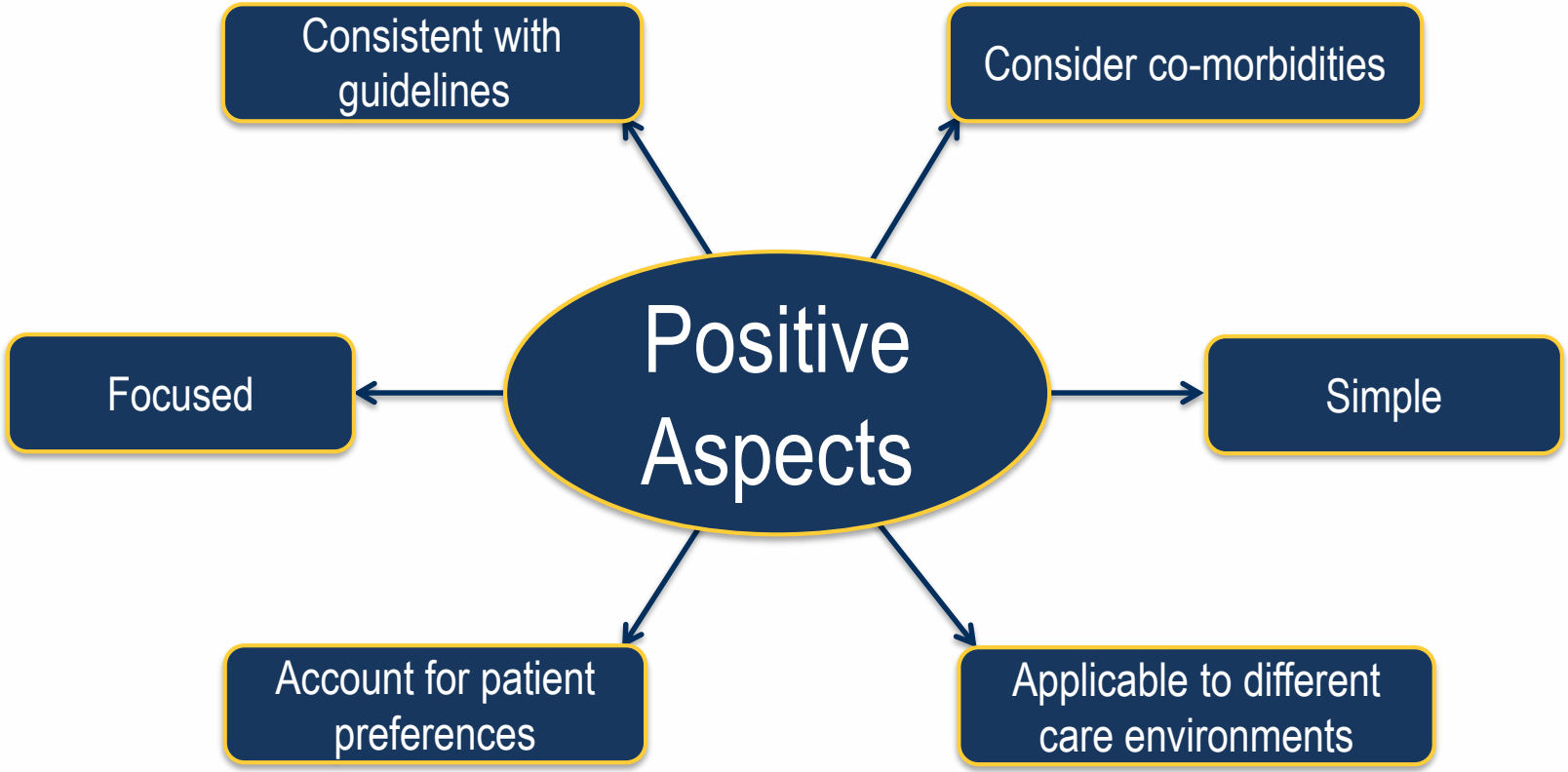
Ward, R. P. (2012). *Journal of the American Society of Echocardiography*, *25*(6), 599-602.

Why we need AUC?

- Clinical practice guidelines were created to assist physicians in practicing evidence-based medicine, but in 2004, on the basis of mounting evidence of unexplained geographic variation in use and increasing cost and regulatory pressures, the American College of Cardiology decided to create a new category of standards, appropriate use criteria (AUC).

- Healthcare reform has yielded an unprecedented focus on improving value-added care

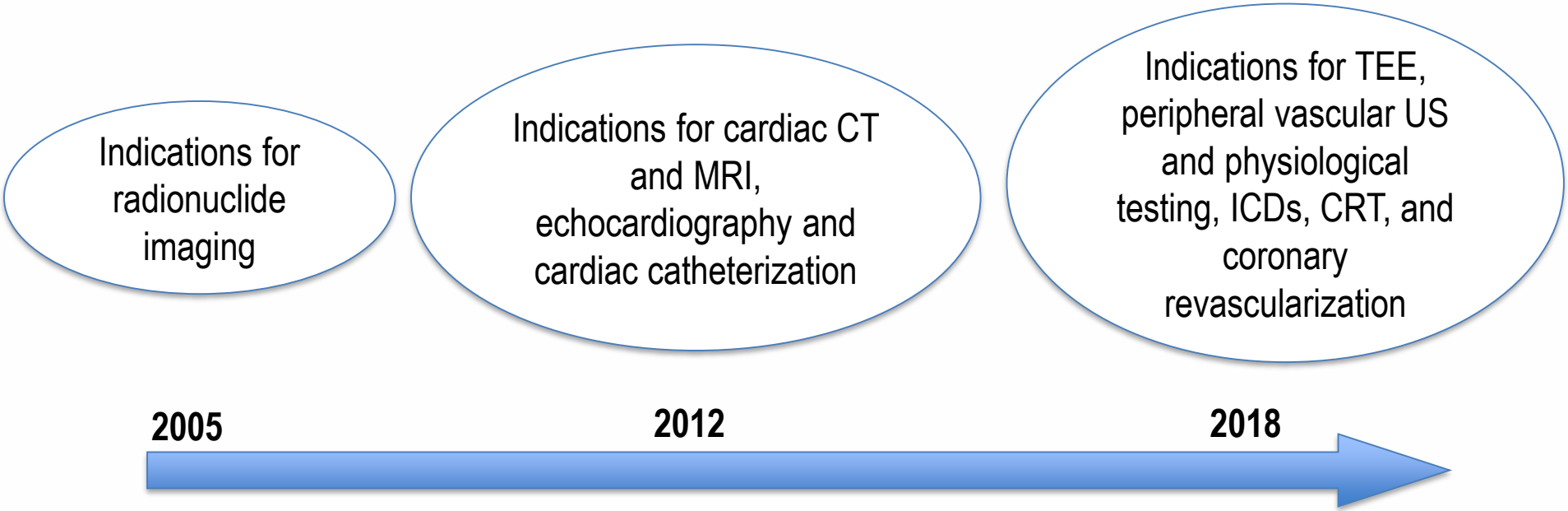
VOLUME of service → VALUE of service


Positive Aspects
Consistent with guidelines
Consider co-morbidities
Focused
Simple
Account for patient preferences
Applicable to different care environments

Potential Impact of AUC

- Establishment of partnership among clinicians and payers
- Education of clinicians regarding their practice habits
- Emphasis of clinical indications to drive testing
- Facilitate reimbursement for “appropriate” and “maybe appropriate” indications
- Support for review and reduction of “rarely appropriate” indications
- Help bend the cost curve

Timeline of AUC in Cardiology

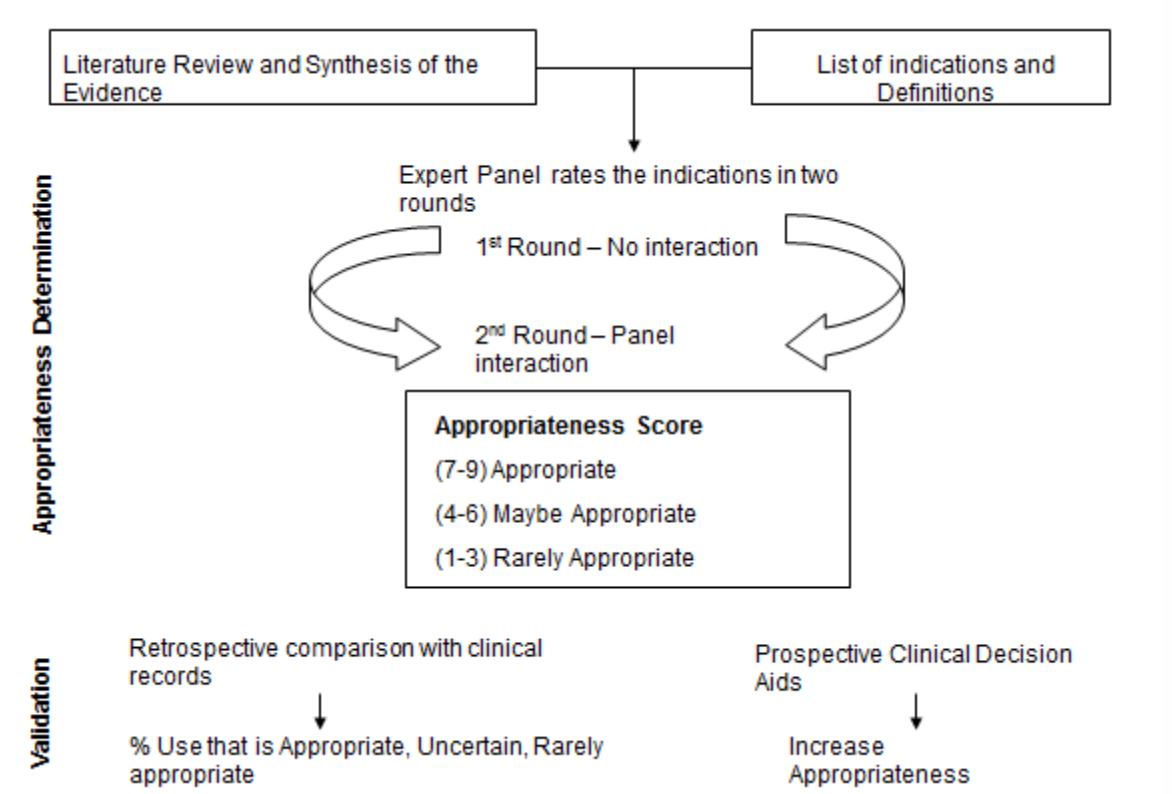


AUC Organizational Structure

AUC Task Force	• At least 7 ACC members from various cardiovascular disciplines • Oversight body for evaluation, development and implementation of AUC
Writing Group	• Selected by the task force from multiple societies and diverse organizations • Group of experts in the discussed technique, responsible for writing the AUC
Review Panel	• Selected by the task force and provide feedback to the writing group • The only 'external review' before voting on appropriate use of specific technology
Rating Panel	• Typically made of 13 – 17 individuals • Group of professionals responsible of rating each clinical scenario • Balance between specialists using the technique and referring clinicians.

Relationships with Industry

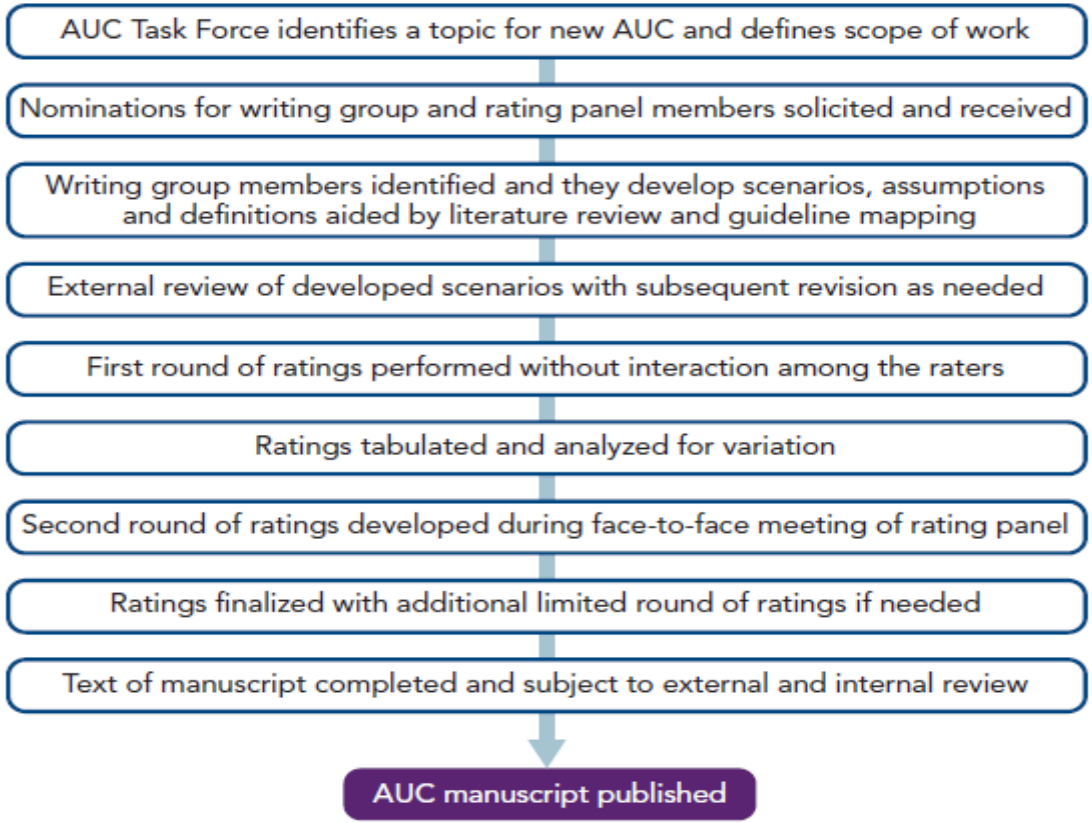
- ACC tracks relevant industry relationships for all its members.
- Writing groups chaired by a member with no relationship with industry.
- No more than 50% of **rating panel members** may have relevant relationship with industry.



Fitch, K. (2017). The RAND/UCLA Appropriateness Method User's Manual. 2001. Santa Monica, CA: RAND Corporation.

Rating of Indications

- **7-9: Appropriate (A)** test for specific indication
  - Test **is** generally acceptable and **is** a reasonable approach for the indication
- **4-6: Maybe Appropriate (M)** or unclear if appropriate for specific indication
  - Test **may** be generally acceptable and **may** be a reasonable approach for the indication
- **1-3: Rarely Appropriate (R)** test for specific indication
  - Test is **not** generally acceptable and is **not** a reasonable approach for the indication



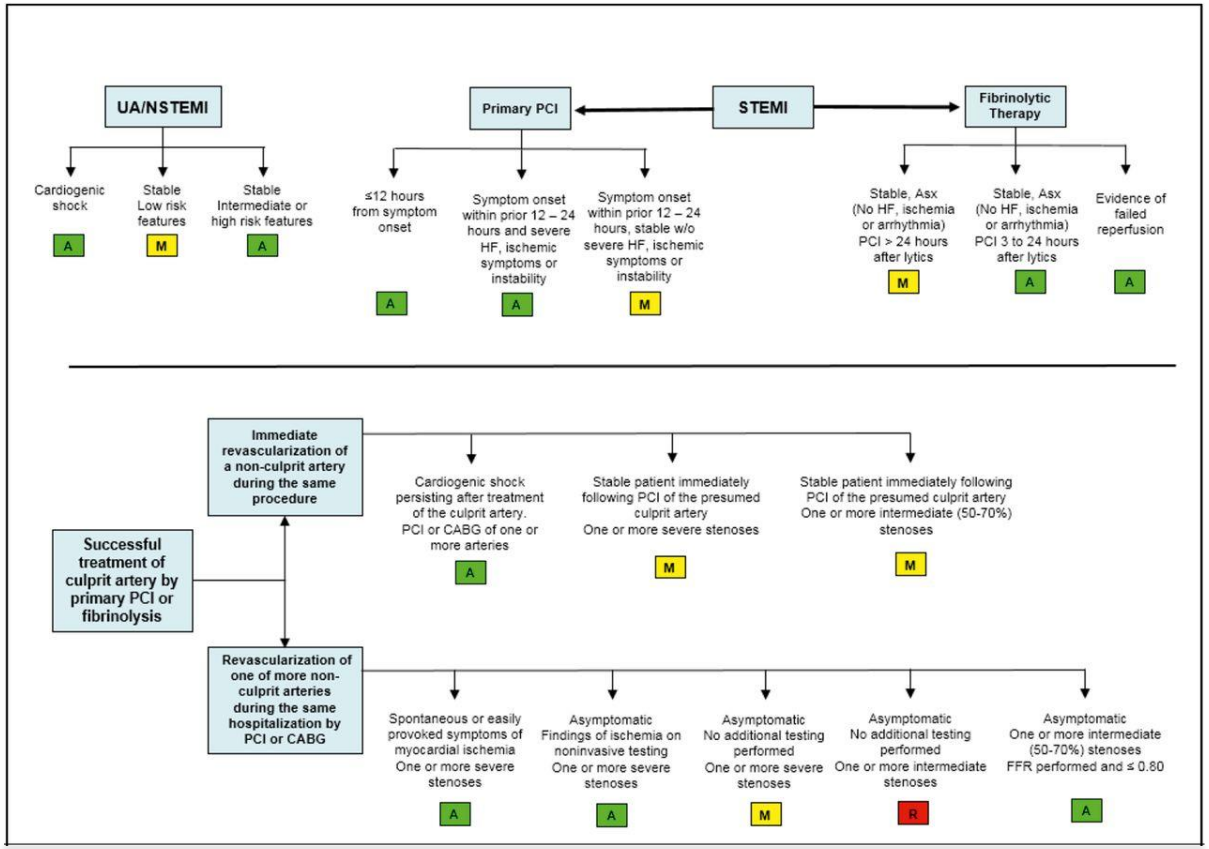
Ward, R. P. (2012). *Journal of the American Society of Echocardiography*, *25*(6), 599-602.

AUC Focused Updates

- Yearly revision for possible updates by the original writing group
- Update or revision of guidelines usually lead to partial or complete revision of AUC
- Initial AUC members are required by ACC policy to be involved in review for at least 5 years after publication

Example

Flow diagram for the determination of appropriate use of PCI in patients with ACS



Patel, M. R., 2017. *Journal of the American College of Cardiology*, *69*(5), 570-591.

Application of AUC

- Excellent for ongoing review of one's practice using the criteria will help guide a more effective, efficient, and equitable allocation of healthcare resources, and ultimately, better patient outcomes

- In situations where there is substantial variation between the appropriateness rating and what the clinician believes is the best approach for a specific patient, further considerations may be appropriate.

Obstacles

- Although evidence should be the foundation for the development, modification, and endorsement of AUC, we recognized that not all aspects of a criterion will be evidence-based, and that a criterion does not exist for every clinical scenario.

- As currently proposed, if this regulation is fully integrated into the practice of medicine, the consequences will be time-consuming documentation processes that impose substantial costs on physician practices already suffering from rising overhead.

Implementation and evaluation

- AUCs are published in leading journals and on ACC websites; subject to updates
- Used as a major parameter in imaging laboratory accreditation; more accreditation institutions will adopt it in the future

The ***Protecting Access to Medicare Act***, passed by Congress in 2014, included a provision requiring all advanced diagnostic imaging services, excluding echocardiography, to undergo an appropriate use criteria (AUC) consultation prior to the completion of the imaging service in order to receive payment approval from the Centers for Medicare and Medicaid Services (CMS).

The AUC Program mandates that ordering professionals must consult with AUC through a clinical decision support mechanism (CDSM) for all Medicare patients receiving applicable advanced imaging care.

Positive effect since adoption of AUC

- One-half of nuclear cardiology laboratories used AUC (survey done 6 years after the publication of first AUC).
- Lower procedural volume appear to be correlated with AUC publication.
- Significant decrease (50%) in non-acute PCIs procedures, from the Cath/PCI Registry (national registry).

Desai NR et al., JAMA Intern Med. 2015; 175:1988–90. Arbel Y et al. Am Heart J. 2016;175:153–9. Kline KP et al. J Am Coll Cardiol Img. 2017;10:824–5. Tilkemeier P. J Nucl Cardiol. 2012;19: 1170–5.

Limitations of AUC

- Appropriate use criteria are intended to assist patients and clinicians, but are not intended to diminish the acknowledged difficulty or uncertainty of clinical decision making and cannot act as substitutes for sound clinical judgment and practice experience

- They identify common clinical scenarios—but they cannot possibly include every conceivable patient presentation.

Continuing Improvements

- The refinements to AUC methodology reflect the ACC's continued commitment to adapting and responding to the ever-evolving needs of cardiovascular practice.

- Over time, the College and AUC Task Force will continue to focus on reflecting the evolution of contemporary practice patterns and accruing scientific evidence, while remaining steadfast in their aim of ensuring patient-centered, professional stewardship of technology application within cardiovascular medicine.

Conclusions

- Medical development has resulted in improved survival but has also increased costs.
- AUC helps identify patients who will most benefit from a procedure and those who will not, resulting in a more effective and equitable allocation of resources.
- We need AUC because healthcare reform has yielded an unprecedented focus on improving value-added care

Conclusions

- AUC documents have been successfully adapted into processes of clinical care (education, accreditation, and quality improvement programs).
- AUC is providing better healthcare with substantial reduction in unnecessary costs.
- AUC serves as a guiding tool, final decision to be taken based on each patient's goals.