

---

PERSONAL NARRATIVE

# The need for Self-Regulation employing Appropriate Use Criteria (AUC)

**Mohammad Hafizullah**

Governor ACC-Pakistan.

Cardiology Department, Lady Reading Hospital, Former Vice Chancellor  
Khyber Medical University, Peshawar-Pakistan

**Copyright** © The Author(s). 2022

This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



**Citation:**

Hafizullah M. The need for Self-Regulation employing Appropriate Use Criteria (AUC). PJCVI. 2022; 2(1):1-5

**Corresponding Author Email:**

hafizullah.mohammad@gmail.com

**DOI:**10.58889/PJCVI.2.1.5

**Funding:**

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

**Conflicts of Interests:**

The authors have declared that no competing interests exist.

**Received** 08/04/2022

**Accepted** 11/05/2022

**First Published** 01/06/2022

---

**Abstract**

Involvement of our cardiology community in developing indigenous AUC in the light of current evidence shall enhance our understanding of the benefits and risks of different indications of procedures. The appropriate and universal use of AUC has the potential to improve patient care and, at the same time, prevent misuse of procedures. This shall surely result in a reduction of the overall cost. The way to rationally look at AUC is to understand that the mirror of AUC helps us reflect on the value of care we provide to patients. If we work hard towards this goal, we should be able to retain the privilege of self-regulation and, more significantly, the trust of our patients and community. To conclude, if we as cardiologists do not work hard to not only clearly define AUC but actively measure appropriateness, we stand a great chance of losing to self-regulate our clinical practice.

---

**Keywords**

Self-Regulation, Employers, Appropriate Use Criteria, PCI, Inspection.

## Introduction

### Let me paint three scenarios.

- Some twenty-five years ago, while observing PCI procedures in a catheterization laboratory in Stanford, USA, I noticed that a particular cardiologist was using Swan Ganz catheter in all his cases – single or double vessel PCIs. On my query from the nursing staff, the answer was that he was a 'careful operator' and wanted to monitor pulmonary artery pressures. On further discussion, it transpired that the operator claimed higher fees by declaring it a complex procedure necessitating Swan Ganz Catheterization.
- Three years ago, while visiting a cath lab in one of the leading cardiac centers in the USA, I was briefed that the number of interventional procedures had reduced by almost half, especially in the setting of stable angina. On further questioning, it was initially speculated to be due to aggressive preventive strategy and better medical management. Later, we all agreed it was due to the wider and astute application of AUC.
- Conducting inspections on behalf of the Pakistan Society of Interventional Cardiology (PSIC) and KP Health Care Commission, we observed that there was a lack of documentation of clinical details and indications for interventions. Many operators were observed to operate with minimal symptoms and on moderate lesions. An operator working in isolation in a private setup was the judge, the jury, and the executioner. There was no universal process of audit, overseeing, and accountability. A patient refused for sound reasons by an experienced operator may be operated upon by another less experienced operator without recording details.

These three scenarios paint a picture that demands a system of regulation. Cardiology is a challenging specialty and is expanding by leaps and bounds. New equipment and new techniques are being

introduced at a high rate. The urge to serve the maximal number of patients and the ability to perform procedures sometimes blur the thin line of evidence on which procedures are helpful in the alleviation of symptoms and prolonging life<sup>1</sup>. There is ample evidence available, and guidelines have taken that into account, and we have clear indications for procedures for all to adopt and follow. The need is to apply these guidelines in our clinical practice<sup>2</sup>. These clear, unambiguous indications for doing a procedure or not doing it form the basis of 'appropriate criteria' – when it is appropriate to perform a procedure and what makes it 'inappropriate' to undertake a procedure. Of course, there will be exceptions to the rule, and every person is a different and unique individual. Even in the US, there had been allegations of performing percutaneous interventions when not indicated or deemed to be unnecessary, and the number has been documented as high as 50% in some studies<sup>3</sup>.

Historically doctors have had autonomy in the way they practice and treat their patients; the same holds for cardiology, but the autonomy has to be balanced with responsibility and self-regulation<sup>4,5</sup>. The need for self-regulation shot into prominence when society and the paying agencies started demanding more information on indications and accrued benefits of some commonly performed procedures. The same sources to curtail unnecessary procedures asked for preauthorization to check the 'appropriateness' of indication and demanded access to more clinical and procedural details for post-procedure verification. Also, to discourage the spiraling number of procedures, the remuneration was drastically reduced<sup>6</sup>. These measures had a remarkable effect, and the number of procedures in the West dwindled down by half<sup>7</sup>.

The profession has a choice – either to self-regulate or someone else shall step in to regulate us. The way forward is to adopt 'appropriate use criteria (AUC) for requesting investigations (especially those entailing higher costs) and performing procedures. More than a decade ago American College of Cardiology took the lead and, in

collaboration with other professional bodies, developed AUC for investigations – especially cardiovascular imaging modalities like nuclear and performing interventional procedures<sup>8-10</sup>. These have been re-examined and refined from time to time incorporating newer techniques and emerging indications.

A decade ago, survey data was reported examining the AUC for coronary revascularization. An electronic survey of 85 practicing cardiologists was conducted, asking them to rate one-third of the 198 clinical scenarios described in the coronary revascularization AUC. Clinical scenarios were recorded as appropriate, uncertain, or inappropriate. Overall, there was agreement in the median appropriateness rating (appropriate, uncertain, or inappropriate) in 84% of the indications reviewed out of this 94% (34 of 36) for appropriate indications, 73% (16 of 22) for uncertain indications, and 70% (7 of 10) for inappropriate indications. The study reported the "nonagreement" - defined as 25% of the individual ratings being scored in a different appropriateness classification. This was an interesting observation as the agreement was in 84% of cases<sup>11</sup>.

AUC must remain current – to be revisited and continuously updated in the light of new evidence. Only then can it be used for benchmarking, implemented rationally and without impeding innovation. In the decade since the first AUC was published, 3 of the 5 AUCs have already been updated, and an update of the coronary revascularization AUC is being regularly undertaken. The role of PCI has been well documented in ACS, but its perceived beneficial role in stable angina has been the focus of research in recent times<sup>12-14</sup>. The process of research and reform must continue with open minds. A position statement was published recently by the Society of Coronary Angiography and Intervention suggesting ways in which future appropriate use criteria (AUC) for coronary revascularization might be updated. It suggested (1) incorporating improvement in quality of life (QOL) and angina relief as primary goals of therapy, (2) integrating the findings of recent trials

into quality appraisal, and (3) employing the combined information of the coronary angiogram and invasive physiologic measurements together with the results of stress test imaging to assess risk, and (4) recognize the essential role that patient preference plays in making individualized therapeutic decisions<sup>15</sup>.

Sehat Sahulat Card (SSC) in Khyber Pakhtunkhwa (KP) is a micro-health insurance program available to all citizens of KP. It is being implemented through an insurance company selected on merit. More than 7.2 million families are getting free indoor treatment at a yearly cost of 18 billion. All interventional procedures – up to three stents, EP procedures, and devices are being implanted with no cost to patients in this scheme. A spiral growth in the number of interventional procedures was observed. New Cath labs opened in the metropolis and in many remote districts. According to the audit report, 209,177 patients availed the facilities, and more than 17,000 patients benefit from free cardiac procedures. Of the top ten services, cardiology was the first one entailing a cost of 2,170 million<sup>16,17</sup>. A need was felt to regulate these procedures and assess if they were being performed for an appropriate criterion. The paying insurance company started slapping constraints - asking for objective evidence of ischemia for angiography instable angina, reduced remuneration, and abolishing extra payment for added stents to discourage deploying more stents. It became imperative to regulate interventional procedures and EP procedures even though it was a free service.

It is equally vital that there should be a cogent and responsive mechanism of feedback from the end users. In the US, data registries like National Cardiovascular Data Registry (NCDR) is being utilized to understand the differences between real-life application and the recommended AUC. In Pakistan, we have only a few centers utilizing NCDR. However, the Pakistan Society of Interventional Cardiology (PSIC) is emphasizing the use of the indigenously developed Cardiology Registry of Pakistan (CROP) for data collection from all active catheterization laboratories across the

country. CROP has been developed with a mission to improve the health of the cardiovascular patient through research, guidelines, awareness, and quality improvement. Annual reports offer a wealth of data for us to ponder on demographics, indications, results, and trends<sup>17</sup>. More than 200 Cardiac Cath laboratories have already been enrolled. Benchmarking specific catheterization laboratories and individual operators may offer a better chance of understanding different practice patterns. Once PSIC has access to the national data and analyzes it, we may become wiser to understand the current scenario and correlate them with recommended AUC. After analysis of the data, we then must discuss steps to be taken by society and cardiologists themselves to regulate interventional cardiology practice.

More importantly, the involvement of our cardiology community in developing indigenous AUC in the light of current evidence shall enhance our understanding of the benefits and risks of different indications of procedures. The appropriate and universal use of AUC has the potential to improve patient care and, at the same time, prevent misuse of procedures. This shall surely result in a reduction of the overall cost. The way to rationally look at AUC is to understand that the mirror of AUC helps us reflect on the value of care we provide to patients. If we work hard towards this goal, we should be able to retain the privilege of self-regulation and, more significantly, the trust of our patients and community. To conclude, if we as cardiologists do not work hard to not only clearly define AUC but actively measure appropriateness, we stand a great chance of losing to self-regulate our clinical practice.

## References

- 1) Hafizullah M. Evidence-based medicine. *J Postgrad Med Inst.* 2004; 18(1): 1-2.
- 2) Hafizullah M. Putting guidelines into clinical practice. *J Postgrad Med Inst.* 2004; 18(3): 341-342.
- 3) Anderson HV, Shaw RE, Brindis RG, et al. Relationship between procedure indications and outcomes of percutaneous coronary interventions by American College of Cardiology/American Heart Association Task Force Guidelines. *Circulation* 2005;112:2786-91.
- 4) Cruess SR, Johnston S, Cruess RL. "Profession": a working definition for medical educators. *Teach Learn Med* 2004;16:74-6.
- 5) Cruess SR, Johnston S, Cruess RL. Professionalism for medicine: opportunities and obligations. *Med J Aust* 2002;177:208-11.
- 6) Patel MR, Wolk MJ, Allen JM, Dehmer GJ, Brindis RG. The privilege of self-regulation: the role of appropriate use criteria. *J Am Coll Cardiol.* 2011;57(14):1557-9.
- 7) Mohammad Hafizullah Dwindling's number of coronary interventional procedures. *Pakistan Heart Journal* 2016; 49 (2)
- 8) Brindis RG, Douglas PS, Hendel RC, et al. ACCF/ASNC appropriateness criteria for single-photon emission computed tomography myocardial perfusion imaging (SPECT MPI): a report of the American College of Cardiology Foundation Quality Strategic Directions Committee Appropriateness Criteria Working Group and the American Society of Nuclear Cardiology. *J Am Coll Cardiol.* 2005;46: 1587- 605.
- 9) Patel MR, Spertus JA, Brindis RG, et al. ACCF proposed a method for evaluating the appropriateness of cardiovascular imaging. *J Am Coll Cardiol.* 2005;46:1606-13.
- 10) Patel MR, Dehmer GJ, Hirshfeld JW, Smith PK, Spertus JA. ACCF/SCAI/STS/AATS/AHA/ASNC 2009 appropriateness criteria for coronary revascularization: a report by the American College of Cardiology Foundation Appropriateness Criteria Task Force, Society for Cardiovascular Angiography and Interventions, Society of Thoracic Surgeons, American Association for Thoracic Surgery, American Heart Association, and the American Society of Nuclear Cardiology. *J Am Coll Cardiol.* 2009;53:530-53.
- 11) Chan PS, Brindis RG, Cohen DJ, et al. Concordance of physician ratings with the appropriate use criteria for coronary revascularization. *J Am Coll Cardiol.* 2011;57:1546-53.
- 12) Lin GA, Dudley RA, Redberg RF. Why physicians favor the use of percutaneous coronary intervention to medical therapy: a focus group study. *J Gen Intern Med.* 2008;23:1458-63.
- 13) Lin GA, Dudley RA, Redberg RF. Cardiologists' use of percutaneous coronary interventions for stable coronary artery disease. *Arch Intern Med.* 2007;167:1604-9.
- 14) Rothberg MB, Sivalingam SK, Ashraf J, et al. Patients' and cardiologists' perceptions of the benefits of percutaneous coronary intervention for

- stable coronary disease. *Ann Intern Med.* 2010;153:307–13.
- 15) Klein LW, Tamis-Holland J, Kirtane AJ et al. The appropriate use criteria: Improvements for its integration into real-world clinical practice *Catheter Cardiovasc Interv.* 2021;98(7):1349-1357.
  - 16) Sehat Card Plus. Sehat Sahulat Program KP. 2022. Available at: <https://sehatsahulat.com.pk/>
  - 17) Cardiac Registry of Pakistan. CROP. 2019. Available at: <https://crop.com.pk/home>