

Pediatric Appropriate Use Criteria for Echocardiography: Implications for Clinical Practice

Ritu Sachdeva, MBBS, Cyrus Samai, MD, Robert N. Vincent, MD

The first pediatric Appropriate Use Criteria (AUC) were recently published by the American College of Cardiology.¹ This document consists of common clinical scenarios for which a transthoracic echocardiogram is ordered in outpatient settings. Echocardiography is the most common imaging modality used in the outpatient setting to assess children with suspected heart disease. However, it is known that echocardiography is not cost-effective or high yield for some common indications such as chest pain, syncope, or murmurs.²⁻⁴ The AUC have been developed to guide physician decision-making for appropriate testing and to improve resource utilization. In addition to pediatric cardiologists, a wide variety of providers including pediatricians, family practitioners, and other pediatric subspecialists order this imaging test. Therefore, this document has a very broad audience. Although appropriateness criteria may be a new concept in the pediatric world, adult cardiologists have been using these standards for various invasive and noninvasive procedures for almost a decade.⁵ In the first half of 2000, because of the dramatic augmentation of cardiac imaging, concerns were raised about excessive spending on these tests compared with other areas of health care. Consequently, health plans started adopting a variety of strategies to manage utilization, such as preauthorization. Concurrently, the American College of Cardiology Foundation established an AUC Task Force to guide appropriate testing. The purpose of the AUC was to guide physicians about “when and how often” to order a given procedure in an individual patient on the basis of current scientific evidence and health care resources. The overall goals of the AUC are to evaluate patterns of care by physicians and to serve as a framework for appropriateness of care. The AUC are along the lines of the 6 tenets of a health care system defined by the Institute of Medicine, namely, a safe, timely, equitable, efficient, effective, and patient-centered health care system.⁶

Preauthorization has been instituted by various insurance companies to help curtail the cost of spending by reducing the rate of inappropriate testing. However, unintended consequences have resulted from preauthorization. More often than not, some proprietary algorithms are followed for approval that may be inconsistent with current literature. In

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addition, the person responsible for preauthorization frequently has little knowledge about the specialized testing in question. Preauthorization in some cases not only inadvertently restricts appropriate testing but also delays access to timely care. In addition, obtaining these approvals requires an enormous amount of time and personnel that are unaccounted for. Practices have incurred increased costs by hiring staff who are exclusively dedicated to obtaining preauthorization. More important, the delay for patients to receive appropriate care and the subsequent potential for a missed diagnosis may result in poor outcomes.⁷

Modern day medicine is increasingly characterized by adherence to evidence-based methods for patient care. However, unlike adult cardiology, pediatric cardiology is handicapped by a paucity of clinical trials and practice guidelines. The AUC approach encompasses a process of practicing medicine that is not based solely on clinical trials and guidelines but also takes expert opinion into account. The first pediatric cardiology AUC effort was intentionally restricted to the initial outpatient transthoracic echocardiogram because this test represents one of the most common areas of utilization. This effort followed a well-defined, multistep process that was used in developing the AUC for adult cardiology and is based on modified Delphi methodology used by the Rand Corporation.⁸ The AUC Task Force solicited nominations from various academic societies including the American Academy of Pediatrics to form a writing group. This group developed a comprehensive set of clinical scenarios for which initial transthoracic echocardiograms are ordered in clinics. The document was then reviewed by a multidisciplinary panel consisting of 30 individuals, including pediatricians, pediatric cardiologists, and experts in the field of quality and outcomes. The

document was revised on the basis of the multidisciplinary panel's feedback. The document was then sent to an independent 15-member rating panel with expertise in imaging, but included very few cardiologists specializing in echocardiography. This rating panel scored each scenario on a scale of 1 to 9. The indications were rated as "Appropriate" (median score: 7–9), "May Be Appropriate" (median score: 4–6), or "Rarely Appropriate" (median score: 1–3) on the basis of the median scores of the rating panel.

AUC have important implications on our practice. The AUC agree in concept with preauthorization to reduce the number of "Rarely Appropriate" indications, but in cases of "Appropriate" indications preauthorization can potentially delay the diagnosis. It is important to recognize that there may be unique clinical situations that have not been included in the AUC document or the provider may have additional information that dictates the need to do a certain test in scenarios rated as "Rarely Appropriate." The AUC document emphasizes that physician judgment in such scenarios surpasses the rating in the document. AUC simply provide a guide as to when it is reasonable to do a particular test in a clinical situation and are not meant to be used for denial of reimbursement. Instead, they are to be used to identify patterns of care by providers, and those with a consistent pattern of ordering a large number of tests for "Rarely Appropriate" indications should be subjected to educational intervention. Despite the aforementioned intent, providers must recognize that the AUC might be used not only by payers but also by hospitals and accreditation bodies for monitoring appropriateness of care and utilization of financial resources and physician quality performance.

This is new territory into which the pediatric world is venturing and it could be understandably quite anxiety provoking for some. The reaction to

early AUC documents in adult cardiology and radiology ranged anywhere from condemning them to willingly accepting them. It would not be surprising to have a similar reaction to this first pediatric AUC document. Nevertheless, it is reassuring to know that eventually AUC have been embraced by our colleagues in adult medicine and have become an integral part of their clinical practice. The AUC process has definitely matured over the past decade. For example, the appropriateness rating in the initial documents in adult cardiology included the terms "Uncertain" and "Inappropriate" indications for what are now called the "May Be Appropriate" and "Rarely Appropriate" indications, respectively.⁸ The AUC Task Force had intended the appropriateness categories to reflect a spectrum of benefits and risks to various patient populations and not to be viewed as concrete silos. The terminology was changed once it was recognized that it was leading to misperception by all stakeholders about which patients may be considered appropriate for testing.

The AUC have served as an important tool for quality improvement and education in adult cardiology. Studies using various educational interventions have shown a reduction in the rate of echocardiograms for "Rarely Appropriate" indications.⁹ Similar to the adult AUC, the pediatric AUC will almost certainly need to be revised in the future as gaps are identified in the current document and as scientific evidence and health care resources change.¹⁰

Our primary responsibility is doing what is right for our patients. Despite the fears of lawsuits and denial of reimbursements, we must continue our efforts to provide high-quality patient care in a cost-effective manner. In the current era, while the tussle with the payers continues, providers need to continue to practice with the best interest of their patients in mind.

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