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*Editorial*

# Reconciling the 2025 ESC/EACTS Valvular Heart Disease Guideline With ACC/AHA Guidance: Convergence, Divergence, and Implications for Practice

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## 1. Introduction

Clinical guidelines translate emerging evidence into practical recommendations for patient care, yet differences between international societies can complicate their application. The 2025 European Society of Cardiology (ESC) and European Association for Cardio-Thoracic Surgery (EACTS) guideline on valvular heart disease introduces substantial revisions in the management of aortic stenosis, mitral regurgitation (MR), tricuspid disease, and the organisation of cardiology services [1]. These changes contrast in several areas with the 2020 American College of Cardiology/American Heart Association (ACC/AHA) guideline [1]. This editorial analyses the principal areas of convergence and divergence and considers their clinical implications for hospital-based practice.

## 2. Transcatheter Aortic Valve Implantation Versus Surgical Replacement

The ESC 2025 guideline broadens its recommendation for transcatheter aortic valve implantation (TAVI), advising its use in patients aged 70 years or older with tricuspid aortic stenosis who are anatomically suitable, regardless of surgical risk [1]. Surgical aortic valve replacement (SAVR) remains indicated for younger individuals and those with bicuspid anatomy or unfavourable procedural features. By contrast, the ACC/AHA guidance places greater emphasis on surgical risk, anatomy, and patient preference rather than a fixed age threshold [1]. The European position is informed by data from low-risk TAVI trials and registry outcomes showing sustained benefit in older cohorts [2]. However, concerns about valve durability and coronary access persist for younger patients. In practice, cardiology teams should adopt a lifetime management perspective, balancing durability and procedural feasibility when advising patients between 65 and 75 years of age.

## 3. Mitral Regurgitation: Defining the Atrial Phenotype

Both ESC 2025 and ACC/AHA 2020 maintain surgical mitral repair as the treatment of choice for primary (degenerative) MR where technically feasible. The ESC document, however, strengthens indications for surgery in selected asymptomatic patients with preserved ventricular function and favourable morphology [1]. A key addition is the recognition of "atrial secondary mitral regurgitation" (A-SMR) as a distinct clinical phenotype, with graded recommendations for surgical repair (Class IIa) or Transcatheter Edge-to-Edge Repair (TEER, Class IIb) following optimisation of rhythm and heart failure therapy [3]. The ACC/AHA guidance refers to functional MR but does not delineate atrial and ventricular forms separately [1]. This clarification is clinically relevant, as distinguishing between atrial and ventricular mechanisms aids prognosis and procedural planning. The integration of multimodality imaging, including cardiac magnetic resonance and three-dimensional echocardiography, is vital for defining aetiology and directing appropriate intervention [4].

## 4. Tricuspid Regurgitation: Advocating Earlier and Combined Repair

The ESC 2025 guideline promotes earlier recognition and management of tricuspid regurgitation (TR), recommending standardised staging and a lower threshold for concomitant tricuspid repair when annular dilatation is observed during left-sided valve surgery [1]. While the ACC/AHA guideline acknowledges the importance of TR, its recommendations are less directive [1]. The European approach reflects mounting evidence that delayed correction leads to right ventricular dysfunction and adverse long-term outcomes. Consequently, cardiology teams managing left-sided valve disease should routinely evaluate the tricuspid valve preoperatively and consider early repair to mitigate progression to right-sided failure and reduce postoperative morbidity.

## 5. Imaging and the Evolution of Specialist Cardiology Centres

ESC 2025 introduces a detailed and structured imaging framework, advocating sequential assessment using echocardiography, computed tomography, and cardiac

magnetic resonance to evaluate disease stage and guide timing of intervention [3]. The guideline further advances the establishment of dedicated cardiology centres with defined procedural volumes, imaging capability, and outcome monitoring. Although the ACC/AHA guidance endorses multidisciplinary collaboration, it is less explicit regarding institutional structure [1]. These recommendations underscore the centrality of imaging in clinical decision-making and the value of institutional expertise. Hospitals should strengthen cardiology pathways, ensuring timely referral and coordinated review of complex valve cases within accredited centres.

## 6. Reasons for Divergence

Several factors underlie the differences between the European and American recommendations. The ESC 2025 guideline incorporates data from more recent trials, including extended follow-up from low-risk TAVI cohorts and studies of TEER in heart failure populations [4]. It also reflects European practice models, where service organisation and procedural access differ from the North American system. European authors place greater weight on age and anatomical suitability, while American experts prioritise individualised assessment based on surgical risk, comorbidities, and shared decision-making [1]. The age-based TAVI recommendation illustrates a pragmatic approach in which improved prosthesis performance and reintervention strategies have shifted perceptions of long-term feasibility for older, anatomically suitable patients. These variations demonstrate differing interpretations of the same evidence rather than conflicting clinical philosophy.

## 7. Anticipated Developments

Future updates will likely narrow the gap between these two major guidelines. Long-term data from contemporary low-risk TAVI trials will clarify valve durability and inform more precise thresholds for intervention. For mitral disease, forthcoming randomised studies in atrial and ventricular secondary MR are expected to refine selection criteria for transcatheter versus surgical approaches, potentially leading to stronger recommendations for TEER [4]. In tricuspid disease, the emergence of dedicated transcatheter systems and multicentre registries will establish clearer procedural indications and refine patient pathways. Moreover, advances in artificial intelligence and computational imaging promise to enhance risk prediction and procedural planning. Cardiology teams will increasingly rely on such technologies to deliver personalised lifetime valve management within structured care networks.

## 8. Conclusion

The 2025 ESC/EACTS guideline represents an important evolution in the management of valvular heart disease, reflecting advances in procedural technology, imaging, and service organisation. While the ESC and ACC/AHA guidelines diverge in certain emphases—particularly regarding age-based TAVI recommendations, formal recognition of atrial secondary MR, and earlier tricuspid intervention—they share common foundations in evidence-based, multidisciplinary, and patient-centred practice. Hospital physicians should interpret these guidelines as complementary frameworks, integrating both perspectives to ensure consistency, transparency, and equity in cardiology-led valve care. As the evidence base expands, harmonisation between international recommendations is likely to progress further, supporting a unified approach to optimised lifetime management of valvular disease.

## Key Points

• The 2025 ESC/EACTS guideline introduces substantive revisions in the management of aortic, mitral, and tricuspid valve disease, and several recommendations diverge from earlier ACC/AHA guidance because they incorporate more contemporary evidence.

• An age-based threshold for TAVI, explicit recognition of atrial secondary mitral regurgitation, and a directive stance on earlier tricuspid repair represent the most consequential departures from the ACC/AHA 2020 document.

• Both guideline systems continue to emphasise multimodality imaging and multidisciplinary assessment, yet the ESC 2025 framework sets out a more structured institutional model that highlights the role of specialised centres.

• The differences in recommendations primarily arise from varying interpretations of emerging trial data and differing healthcare delivery contexts rather than any fundamental divergence in clinical philosophy.

• Harmonisation is expected as long-term TAVI durability data, further evidence for transcatheter mitral and tricuspid therapies, and advances in computational imaging refine international practice standards.

• Clinicians should integrate both guideline perspectives to support consistent, equitable, and evidence-aligned lifetime management of valvular heart disease within contemporary cardiology services.

## Availability of Data and Materials

Not applicable.

## Author Contributions

YA and HHA designed the work. YA drafted the manuscript. Both authors contributed to the important editorial changes in the manuscript. Both authors read and approved the final manuscript. Both authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

## Ethics Approval and Consent to Participate

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## Conflict of Interest

The authors declare no conflict of interest.

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