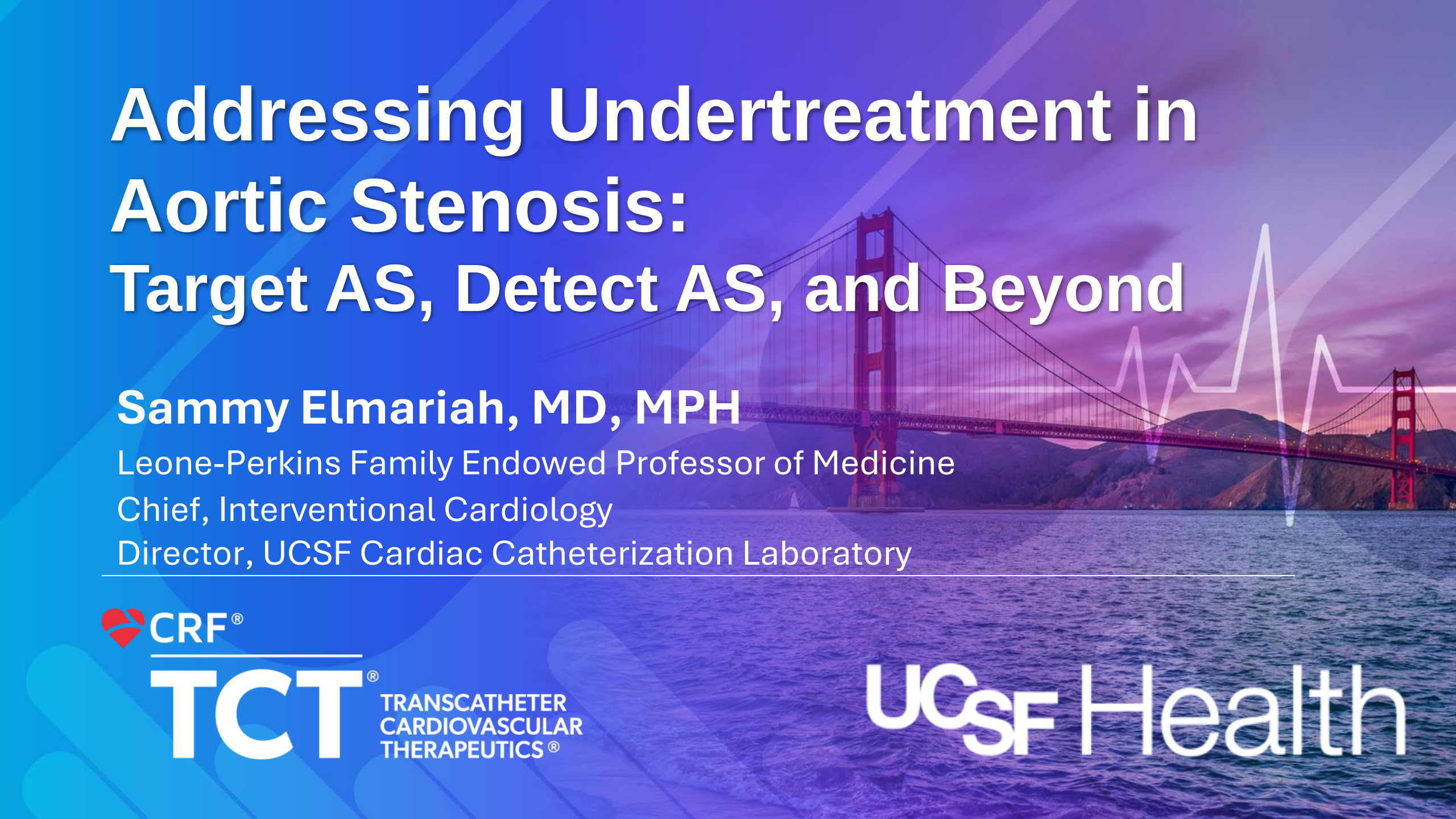
Addressing Undertreatment in Aortic Stenosis:
Target AS, Detect AS, and Beyond

Sammy Elmariah, MD, MPH
Leone-Perkins Family Endowed Professor of Medicine
Chief, Interventional Cardiology
Director, UCSF Cardiac Catheterization Laboratory



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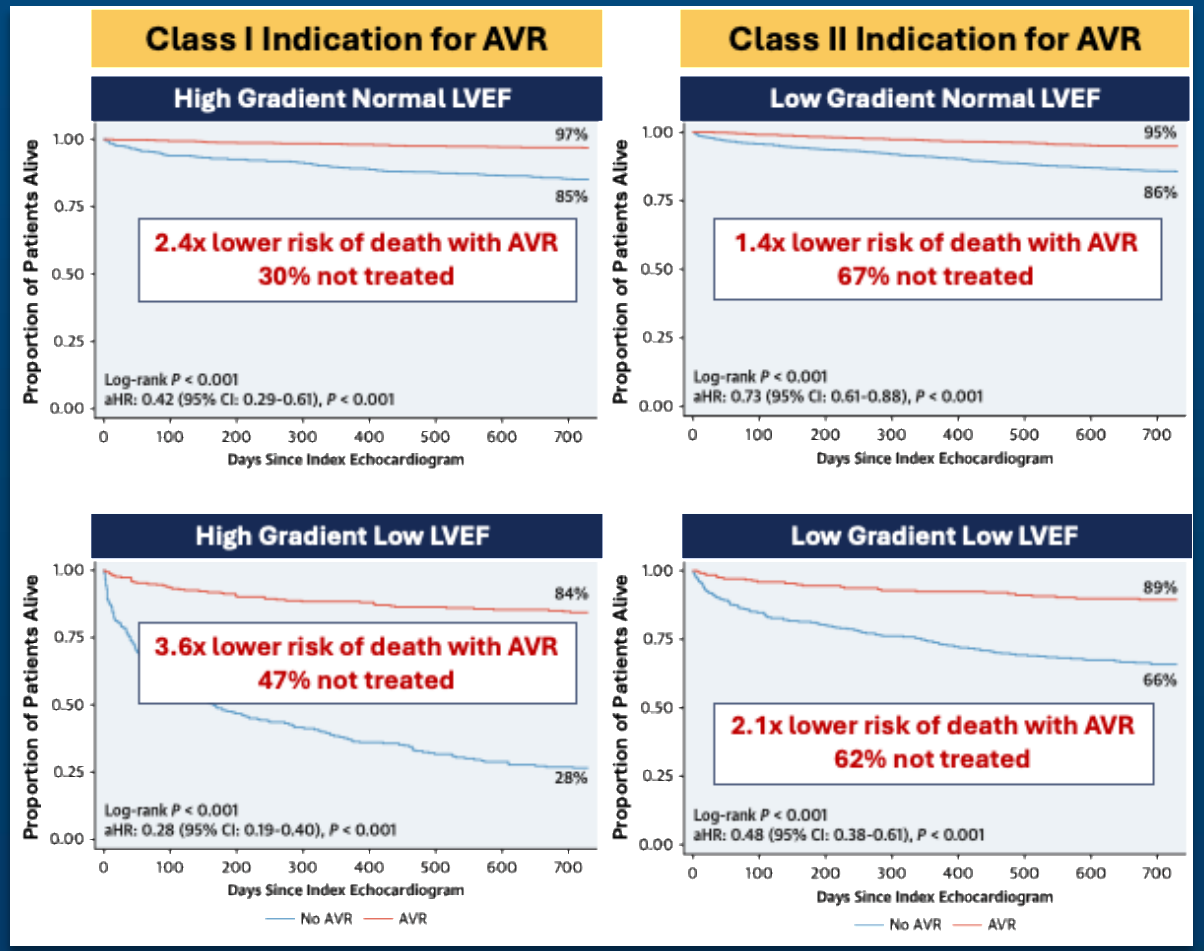
Disclosure of Relevant Financial Relationships

Within the prior 24 months, I have had a financial relationship with a company producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients:

Nature of Financial Relationship	Ineligible Company
Grant/Research Support	Edwards Lifesciences, Medtronic, Abbott
Consultant Fees/Honoraria	Edwards Lifesciences, Abbott
Individual Stock(s)/Stock Options	Prospect Health
Royalties/Patent Beneficiary	
Executive Role/Ownership Interest	
Other Financial Benefit	

Background

- Symptomatic severe aortic stenosis (AS) is associated with high morbidity and mortality when left untreated.
- Aortic valve replacement (AVR) is curative, prolonging life across the spectrum of AS subtypes.
- AS is markedly undertreated, especially among women, the elderly, and racial/ethnic minority groups.[1,2]



[1]Li SX… Elmariah S. J Am Coll Cardiol. 2022;79:864-77.
[2]Crousillat DR… Elmariah S. J Am Heart Assoc. 2022;11:e025692.

American Heart Association.
Target: Aortic Stenosis

Target: Aortic Stenosis

An AHA Quality Initiative

Aortic Stenosis Patient Care Pathway

American Heart Association. Target: Aortic Stenosis	✓	✓	✓	✓	✓	✓
Current Procedural Registries					✓	✓

For Systems: Implementation of quality measures based on updated guidelines

For Health Care Providers: Delivery of guideline-directed, optimal-care standards education

For Patients: Increasing patient awareness and engagement

75 Hospital Contracted & Engaged

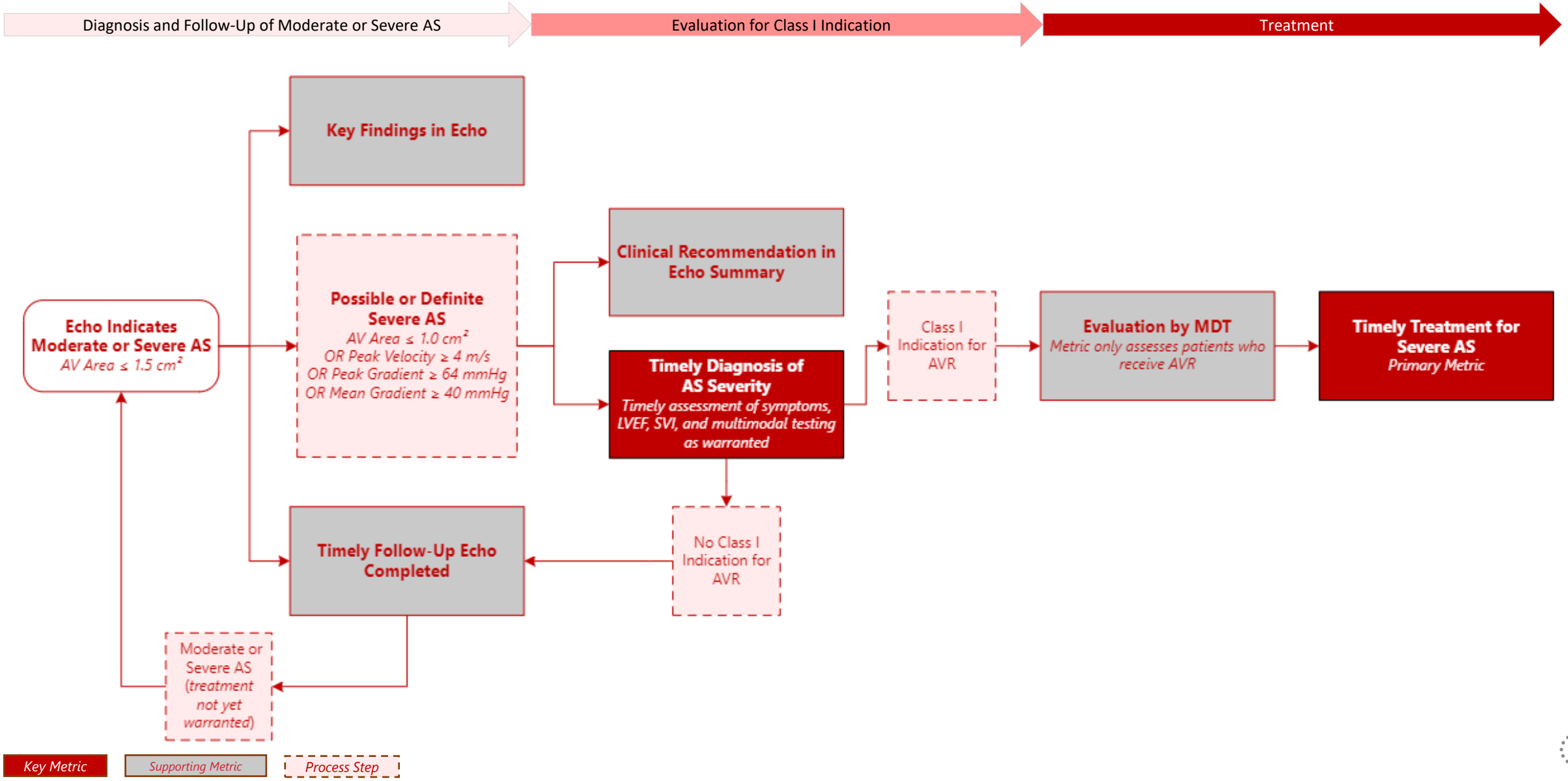
12,386 Patient Records Entered with 47,704+ Encounters

Data as of 24SEP2025

Edwards Lifesciences is the national sponsor of American Heart Association's Target: Aortic Stenosis.

American Heart Association®
Target: Aortic Stenosis

Measure Relationship Diagram



American Heart Association.
Target: Aortic Stenosis

2025 HOSPITAL RECOGNITION CRITERIA

(based on 2024 data)

2026 Recognition Criteria Under Development

PRIMARY MEASURE

75%

Timely Treatment for Severe Aortic Stenosis:

Percentage of patients with a class 1 indication for Aortic Valve Replacement who receive definitive treatment (SAVR or TAVI) within 90 days of initial diagnosis

**6 patient minimum in denominator*

50%

Defect-Free Timely Diagnosis

Percentage of echoes with potential severe Aortic Stenosis who have all necessary* evaluation and testing completed to clarify severity and determine whether a Class 1 Indication exists.

**30 echoes minimum denominator*

Supporting Measures: Must report, but no threshold set for achievement and no minimum requirement for denominator

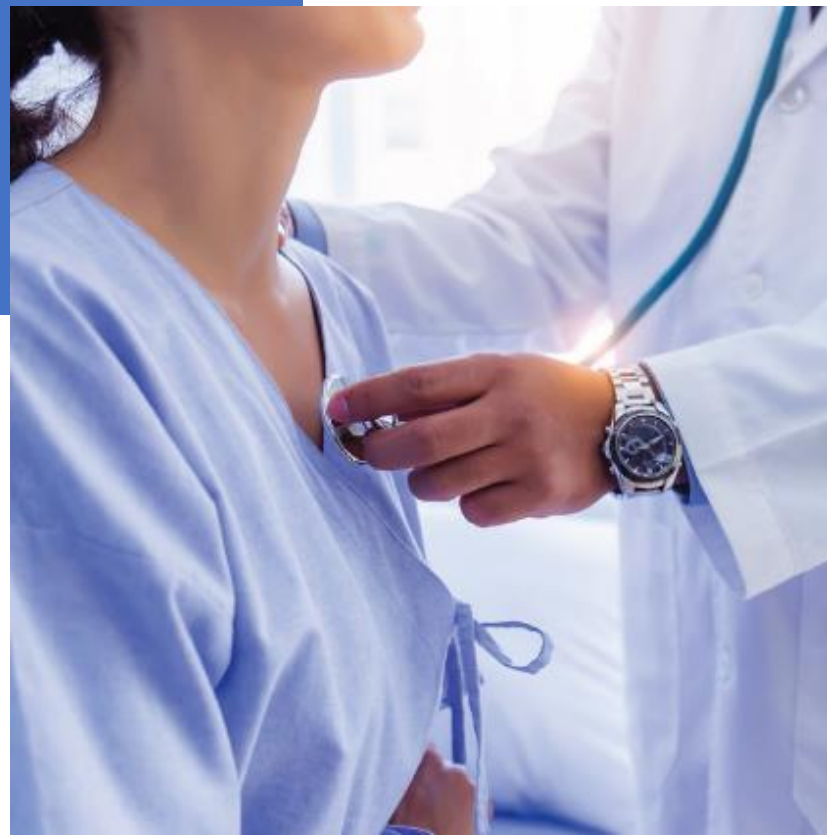
- Key Findings in Echo Report and Summary/ Conclusion
- Evaluation by Multidisciplinary Team
- Timely Follow up Echocardiogram Completed

• VOLUME CRITERIA •

must have 40 patients in the registry to qualify for recognition

American Heart Association®

Target: Aortic Stenosis



Does your site *Target: Aortic Stenosis*?

Limited participation stipend spots available!

REGISTRY FEATURES

- GUIDING BEST PRACTICES
- PERFORMANCE METRICS
- FOCUS ON HEALTH EQUITY
- REAL TIME REPORTING
- RESEARCH INFRASTRUCTURE

For information on how your hospital can participate visit:
www.heart.org/TargetAS

Or email:
TargetAorticStenosis@heart.org

Edwards Lifesciences is the national sponsor of American Heart Association's Target: Aortic Stenosis

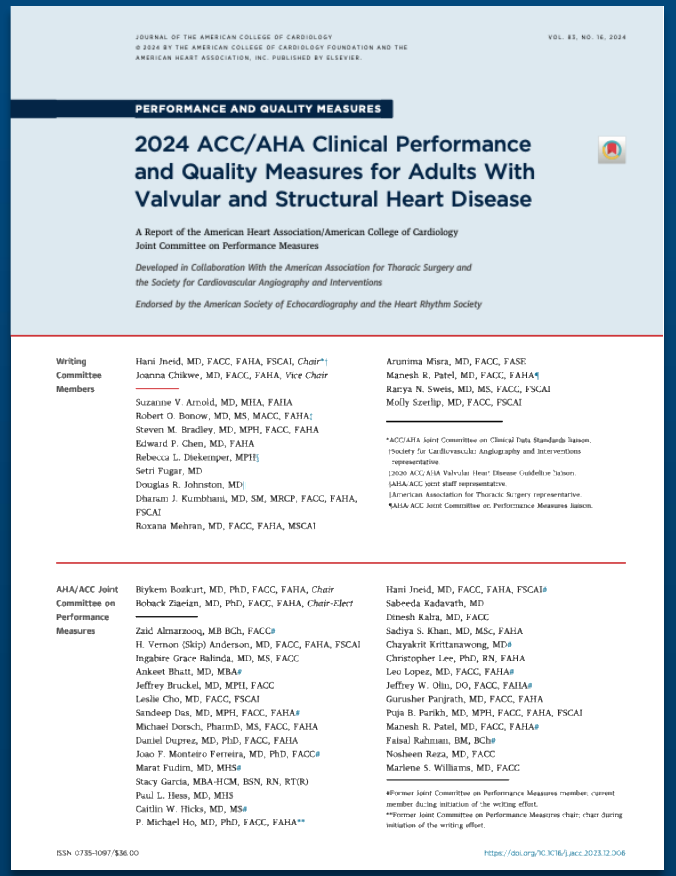
New Quality Standards for VHD

- The **AHA Target: Aortic Stenosis** initiative launched with the intent to improve care and outcomes for patients with severe AS upstream of AVR.[1]

- **ACC/AHA** performance measures "ready for public reporting and pay-for-performance programs".

  - **Proportion of patients with symptomatic severe AS receiving AVR within 90 days of diagnosis.[2]**

There is a clear and unmet need for effective, low-cost, and scalable tools to bolster guideline-driven management of severe AS.



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PERFORMANCE AND QUALITY MEASURES

2024 ACC/AHA Clinical Performance and Quality Measures for Adults With Valvular and Structural Heart Disease

A Report of the American Heart Association/American College of Cardiology Joint Committee on Performance Measures

Developed in Collaboration With the American Association for Thoracic Surgery and the Society for Cardiovascular Angiography and Interventions

Endorsed by the American Society of Echocardiography and the Heart Rhythm Society

Writing Committee Members

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Ranya N. Sweis, MD, MS, FACC, FSCAI
Molly Szerlip, MD, FACC, FSCAI

*ACC/AHA Joint Committee on Clinical Data Standards liaison.
†Society for Cardiovascular Angiography and Interventions representative.
‡2020 ACC/AHA Valvular Heart Disease Guideline liaison.
§AHA/ACC joint staff representative.
‖American Association for Thoracic Surgery representative.
¶AHA/ACC Joint Committee on Performance Measures liaison.

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Manesh R. Patel, MD, FACC, FAHA#
Faisal Rahman, BM, BCh#
Nosheen Reza, MD, FACC
Marlene S. Williams, MD, FACC

#Former Joint Committee on Performance Measures member; current member during initiation of the writing effort.
**Former Joint Committee on Performance Measures chair; chair during initiation of the writing effort.

ISSN 0735-1097/$36.00 https://doi.org/10.1016/j.jacc.2023.12.006

[1]*Lindman BR, et al. Circ Cardiovasc Qual Outcomes. 2023;16(6):e009712.*
[2]*Jneid H, et al. J Am Coll Cardiol. 2024 Apr 23;83(16):1579-1613.*

DETECT AS Trial

The DETECT AS Trial

Study Design

Pragmatic, single-blinded, cluster randomized controlled trial and quality improvement initiative conducted within the multicenter MGH academic health system.

Patients with TTE revealing aortic valve area (AVA) ≤1.0 cm^2

1:1 Randomization of Clinical Providers

Hierarchical assignment durable through subsequent patients

Electronic Provider Notification (EPN)

285 providers caring for 945 patients enrolled

Usual Care

Primary Endpoint: The proportion of patients receiving AVR within 1-year of the index TTE

Follow-up: Complete 1-year

Investigator-initiated study sponsored by Edwards Lifesciences

DETECT AS Trial

Personalized Electronic Provider Notifications

Personalized EPN via e-mail and EMR in-basket:

1. High gradient, normal LVEF
   - mAVG ≥40 mmHg, LVEF ≥50%
2. High gradient, low LVEF
   - mAVG ≥40 mmHg, LVEF <50%
3. Low gradient, normal LVEF
   - mAVG <40 mmHg, LVEF ≥50%
4. Low gradient, low LVEF
   - mAVG <40 mmHg, LVEF <50%

Hello Dr ------

Your patient, -----, recently underwent a transthoracic echocardiogram that identified severe aortic stenosis with preserved ejection fraction.

The ACC/AHA Guidelines for the Management of Valvular Heart Disease make the following recommendations which may apply to this patient:

- In symptomatic patients with severe AS, AVR is indicated. (class 1 recommendation)
- In asymptomatic patients with severe AS and low surgical risk, AVR is reasonable when:
  - AS is very severe (defined as an aortic velocity of ≥5 m/s) and there is low surgical risk, AVR is reasonable. (class 2a recommendation)
  - An exercise test demonstrates decreased exercise tolerance or a fall in systolic blood pressure of ≥10 mmHg from baseline to peak exercise. (class 2a recommendation)
  - Serum B-type natriuretic peptide (BNP) level is >3 times normal. (class 2a recommendation)
  - Serial testing shows an increase in aortic velocity ≥0.3 m/s per year. (class 2a recommendation).
  - LVEF progressively declines on at least 3 serial imaging studies reaching <60%. (class 2b recommendation)

Patients with severe valvular heart disease should be evaluated by a Multidisciplinary Heart Valve Team when intervention is considered. (class 1 recommendation)

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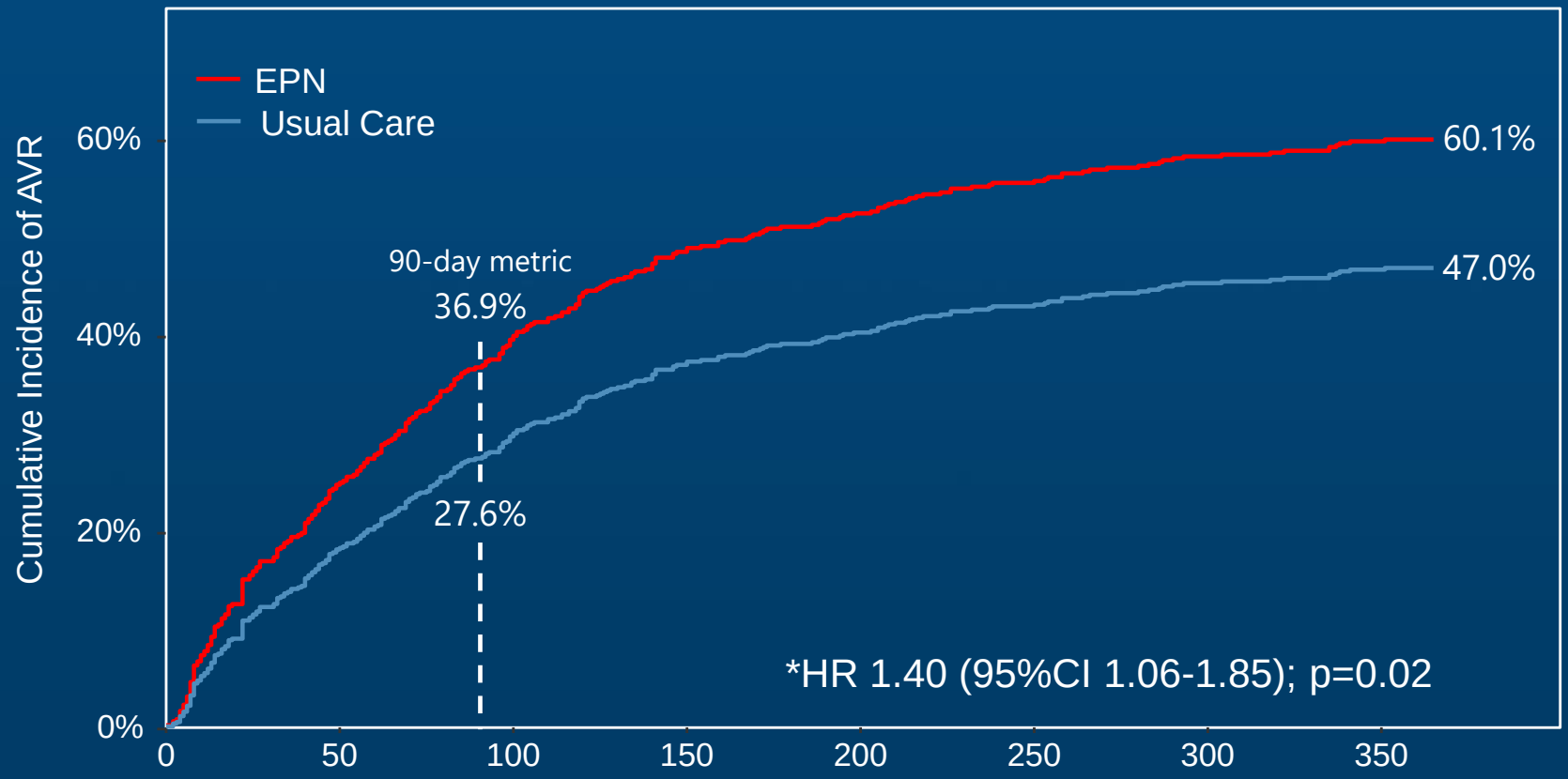
AVR Treatment in Symptomatic Patients



Number at risk

EPN	305	220	166	138	123	110	95	87
Usual Care	241	177	146	120	110	100	91	87

Cause-specific Cox model of AVR and competing risk of mortality

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Tanguturi V... Elmariah S. Circulation. 2025

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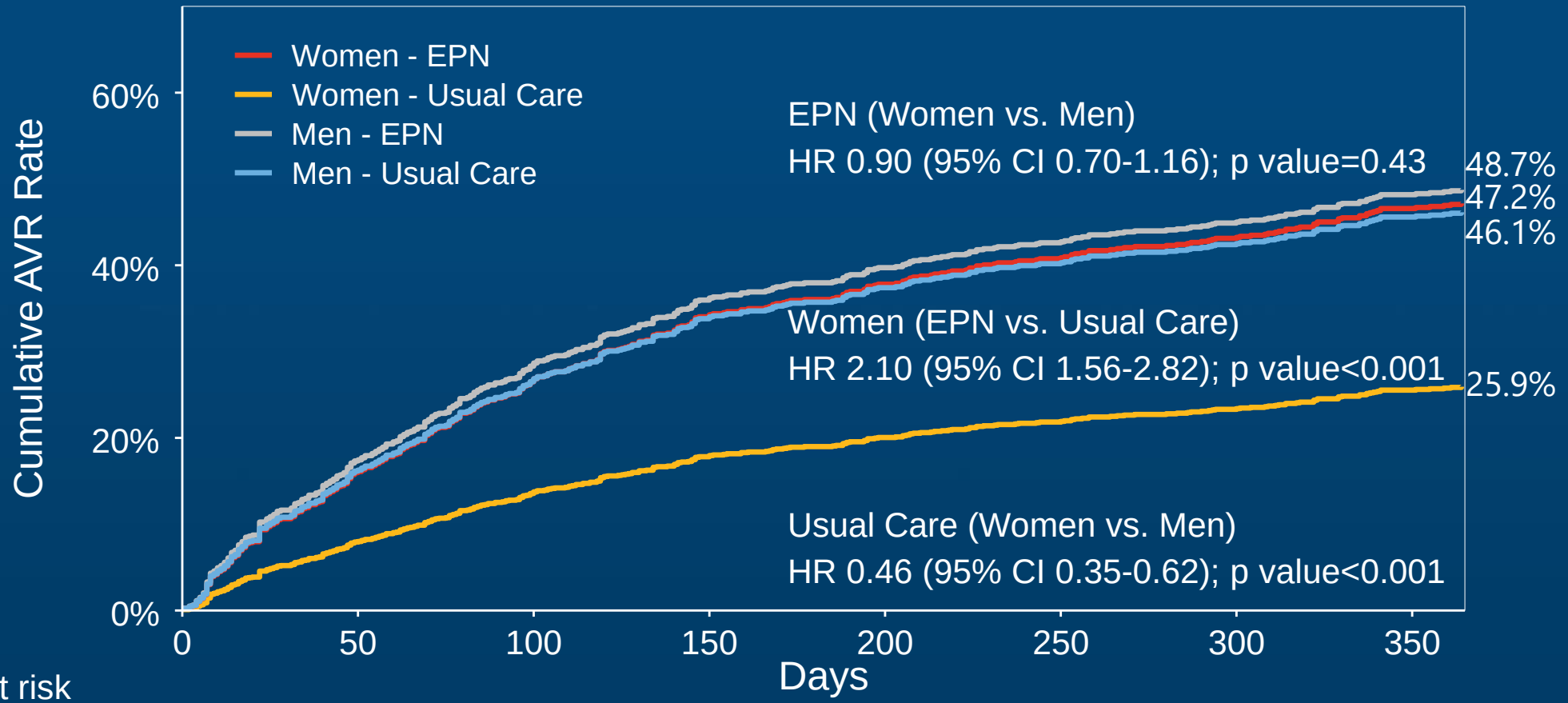
Gender Subgroup Analysis

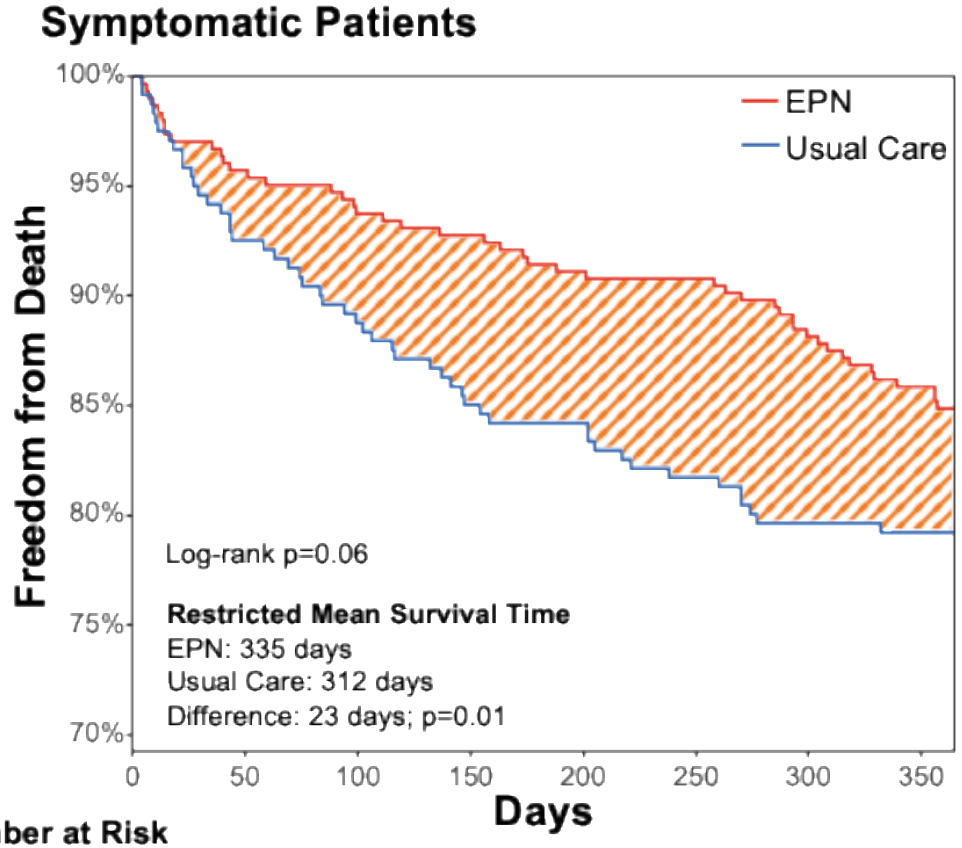


Number at risk

Women - EPN	248	203	171	153	139	132	124	118
Women - Usual Care	189	166	157	144	136	128	124	121
Men - EPN	247	199	166	144	134	122	110	97
Men - Usual Care	253	195	164	143	131	126	118	106

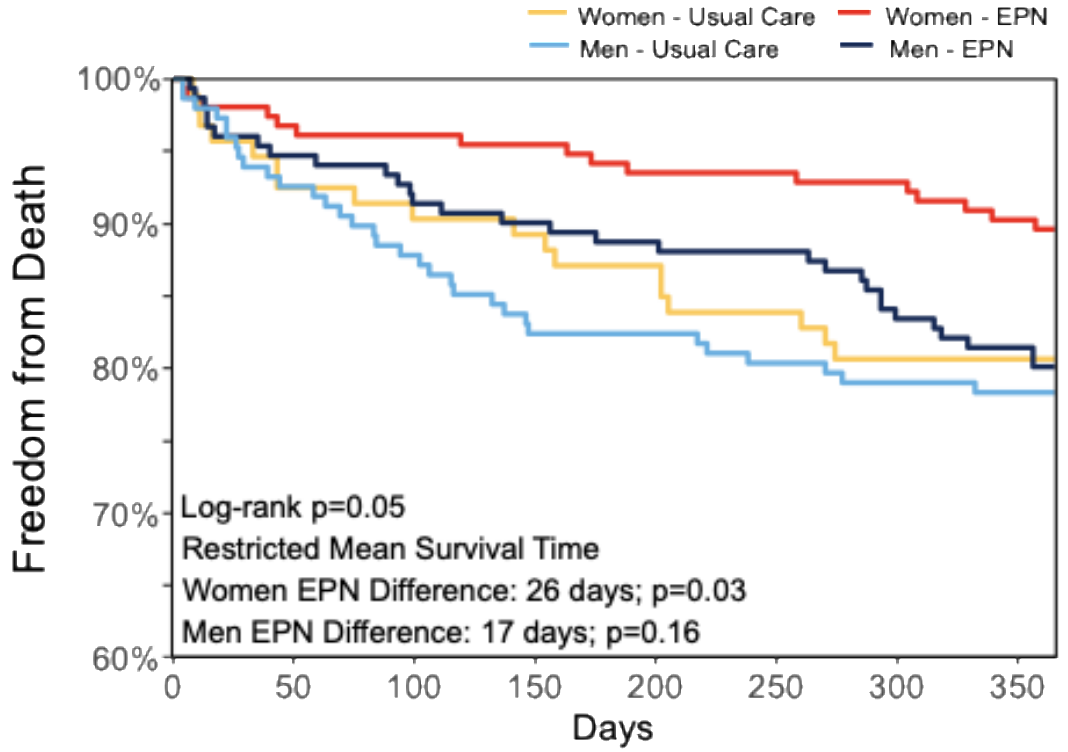
DETECT AS Trial

EPN Prolong Survival



Number at Risk

	305	292	286	283	278	277	269	262
Usual Care	241	223	214	205	203	197	192	191



Number at Risk

Women - EPN	154	149	148	147	144	144	143	139
Women - Usual Care	93	86	84	83	81	78	75	75
Men - EPN	151	143	138	136	134	133	126	123
Men - Usual Care	148	137	130	122	122	119	117	116

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DETECT AS Trial

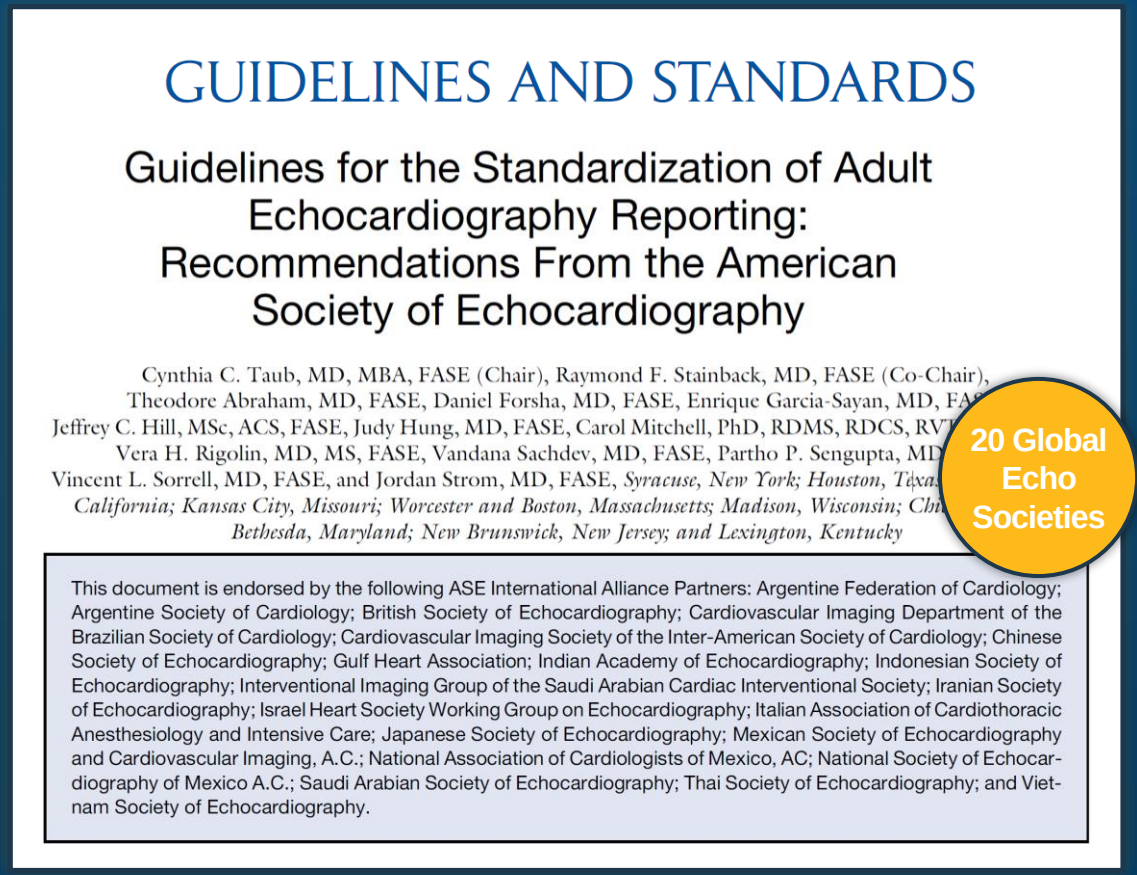
Conclusions

In the management of patients with aortic stenosis and AVA ≤ 1.0cm^2, EPN resulted in:

- Higher rates of AVR at 90 days and 1 year
- Prolonged survival time
- Reduced disparities in AS management

The DETECT AS Trial demonstrated the potential impact of AI-based alerts, decision support, and management tools in improving quality of care.

The 2025 ASE Standardization Guidelines



GUIDELINES AND STANDARDS

Guidelines for the Standardization of Adult Echocardiography Reporting: Recommendations From the American Society of Echocardiography

Cynthia C. Taub, MD, MBA, FASE (Chair), Raymond F. Stainback, MD, FASE (Co-Chair), Theodore Abraham, MD, FASE, Daniel Forsha, MD, FASE, Enrique Garcia-Sayan, MD, FA
Jeffrey C. Hill, MSc, ACS, FASE, Judy Hung, MD, FASE, Carol Mitchell, PhD, RDMS, RDCS, RV
Vera H. Rigolin, MD, MS, FASE, Vandana Sachdev, MD, FASE, Partho P. Sengupta, MD
Vincent L. Sorrell, MD, FASE, and Jordan Strom, MD, FASE, *Syracuse, New York; Houston, Texas; California; Kansas City, Missouri; Worcester and Boston, Massachusetts; Madison, Wisconsin; Chi Bethesda, Maryland; New Brunswick, New Jersey; and Lexington, Kentucky*

20 Global Echo Societies

This document is endorsed by the following ASE International Alliance Partners: Argentine Federation of Cardiology; Argentine Society of Cardiology; British Society of Echocardiography; Cardiovascular Imaging Department of the Brazilian Society of Cardiology; Cardiovascular Imaging Society of the Inter-American Society of Cardiology; Chinese Society of Echocardiography; Gulf Heart Association; Indian Academy of Echocardiography; Indonesian Society of Echocardiography; Interventional Imaging Group of the Saudi Arabian Cardiac Interventional Society; Iranian Society of Echocardiography; Israel Heart Society Working Group on Echocardiography; Italian Association of Cardiothoracic Anesthesiology and Intensive Care; Japanese Society of Echocardiography; Mexican Society of Echocardiography and Cardiovascular Imaging, A.C.; National Association of Cardiologists of Mexico, AC; National Society of Echocardiography of Mexico A.C.; Saudi Arabian Society of Echocardiography; Thai Society of Echocardiography; and Vietnam Society of Echocardiography.

KEY GUIDELINE UPDATES

- Critical findings, including **severe AS**, should be documented in the report and **verbally communicated** to the ordering provider **within minutes**
- Echocardiologists should include a **recommendation statement for further referral / evaluation** of significant AS

> "This patient has significant aortic stenosis that, according to the current American College of Cardiology/American Heart Association/ASE valvular heart disease guidelines, may warrant treatment. As clinically appropriate, further evaluation and/or referral should be considered."

"These guidelines may help **redefine the role of echocardiography in patient care** from passive, descriptive reporting **to active physician-guided participation in patient management**."

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Taub CC, et al. *JASE*. 2025; 38 (9) **735-774**. DOI: 10.1016/J.ECHO.2025.06.001

Goals for Active Surveillance

To facilitate regimented surveillance and unbiased and timely evaluation and management of significant aortic stenosis.

- EMR integrated prompts for surveillance echocardiograms.
- Facilitated referral to Heart Valve Team with time-limited “opt-out”.
- Avoidance of loss of follow-up.
- Acknowledge reasons for not executing referring.

Patient meets criteria for severe aortic stenosis with an EF <= 49% and does not have a referral to the UCSF Valve Clinic or a visit in the past 90 days. Consider placing a referral below

Thank you!

Sammy.Elmariah@ucsf.edu

@SammyElmariahMD